Criminal Thinking in a Community Mental Health Sample: Effects on Treatment
Engagement, Psychiatric Recovery, and Criminality

by

Nicole R. Gross, M.A.

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Robert Morgan, Ph.D.
Committee Chairperson

Stephen Cook, Ph.D.

Kelly Cukrowicz, Ph.D.

Sheila Garos, Ph.D.

Mark Sheridan, Ph.D.
Dean of the Graduate School

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ABSTRACT

People who engage in crime evidence thinking styles that support and reinforce antisocial behavior such as manipulateness, impulsivity and irresponsibility (Yochelson & Samenow, 1976; Walters, 1990). Research with criminal justice (CJ) populations has found criminal thinking to be prevalent among persons with severe mental illness who are incarcerated and that their thinking styles are similar to those of incarcerated persons without serious mental illnesses (Morgan, Fisher, Duan, Mandracchia, & Murray, 2010; Wolff, Morgan, Shi, Fisher, & Huening, 2011). Additionally, a study by Gross & Morgan (2013) found that persons with mental illness admitted to a short-term psychiatric facility with a history of, but no current, CJ involvement evidenced criminal thinking similar to incarcerated persons with mental illness. What remains unclear is whether criminal thinking styles are prevalent in community-based clinical samples and, if so, whether criminal thinking styles affect treatment engagement, psychiatric recovery and CJ outcomes. Current community-based interventions for CJ involved persons with serious mental illnesses, are efficacious in reducing mental health symptoms but not in preventing criminal recidivism (Morrissey, Meyer, Cuddeback, 2007; Calsyn, Yonker, Lemming, Morse, & Klinkenberg, 2005). The purpose of this study was to determine the prevalence of criminal thinking in community-based clinical samples, and understand the effects of criminal thinking on psychiatric (e.g., rehospitalization, treatment engagement) and CJ (e.g., reincarceration, arrest) outcomes. Participants ($N = 225$) were composed of male and female consumers enrolled in Assertive Community Treatment (ACT) and Forensic Assertive Community Treatment (FACT; or programs with a like model of

service delivery) programs in four separate states. Results of the between subject Multivariate Analysis of Variance and univariate Analysis of Variance analyses revealed no differences in criminal thinking when comparing participants in ACT and FACT programs, and participants with and without a history of CJ involvement. Additionally, there were no significant differences in the number of PICTS-L-SF scale elevations for participants in ACT and FACT programs, and participants with and without a history of CJ involvement. Linear regression analyses indicated a significant relationship between general criminal thinking and mental health symptomatology. Specifically, both the overall level of symptom distress and the number of mental health symptoms experienced were positively associated with general criminal thinking. It is important to note that the results are limited in that there were substantially fewer participants in FACT programs as compared to ACT programs, and participants without a history of CJ involved as compared to those with a history of CJ involvement. Further, there was high number of community mental health programs that refused to participate in the study or that researchers were unable to contact regarding participation. Researchers were unable to assess for differences between participating and non-participating programs, and results may not generalize to or be representative of all persons enrolled in community mental health programs. The implications of the results will be discussed with reference to the treatment programming and future directions for research. Specifically, the importance of integrated treatment approaches that concurrently address mental health and criminogenic needs for persons with mental illness receiving community mental health services.

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CHAPTER ONE

INTRODUCTION

People who engage in crime evidence thinking styles that support and reinforce antisocial behavior such as manipulateness, impulsivity and irresponsibility (Yochelson & Samenow, 1976; Walters, 1990). Andrews and Bonta (2010) identified antisocial cognitions (i.e., criminal thinking) as one of the “Big Four” risk factors that increase one’s likelihood to engage in criminal behavior. Criminal thinking (see Definition of Terms) not only contributes to engagement in criminal behavior, but influences prolonged and persistent involvement in criminal activity. Specifically, “a criminal belief system supports the evolving criminal lifestyle by shielding it from the light of corrective environmental experience” (Walters, 2006a, p. 5). Research has begun to examine the role of criminal thinking in the disproportionate involvement of persons with mental illness (PMI; see Definition of Terms) in the criminal justice (CJ) system.

Research with CJ populations has found that criminal thinking is prevalent among PMI who are incarcerated as they evidenced criminal thinking styles that was consistent with non-mentally ill offenders (Morgan, Fisher, Duan, Mandracchia, & Murray, 2010; Wolff, Morgan, Shi, Fisher, & Huening, 2012). Additionally, the psychiatric symptomatology of the incarcerated PMI was similar to that of inpatient psychiatric samples (Morgan et al., 2010; Wolff et al., 2012). Furthermore, Gross and Morgan (2013) found that PMI admitted to a short-term psychiatric facility with a history of, but no current, CJ involvement evidenced criminal thinking similar to incarcerated PMI. These results suggest that PMI who are CJ involved “are both mentally ill psychiatric patients

and criminals” (Morgan et al., 2010, p. 333). Finally, Girard and Wormith (2004) found that CJ involved PMI evidenced higher total scores on the General Risk/Need scale of the Levels of Service Inventory/Case Management Inventory (LSI/CMI; a commonly used measure of criminal risk assessment) than CJ involved individuals without mental illness.

Interestingly, criminal thinking may be a risk factor for PMI that are not CJ involved. Carr and colleagues (2009) examined criminal thinking styles in a sample of civil psychiatric patients, and found that civil psychiatric patients scored significantly higher on five out of eight criminal thinking style scales than an incarcerated sample without mental illness. This increased prevalence of criminal thinking in PMI appears to impact CJ and psychiatric outcomes such as mental health relapse leading to rehospitalization or criminal behavior leading to incarceration. When compared to offenders without mental illness, PMI who are placed in community supervision (i.e., parole) after being released from a correctional facility are significantly more likely to recidivate (continued criminal behavior resulting in arrest and/or reincarceration; Messina, Burdon, Hagopain, & Prendergast, 2004). Similarly, it is estimated that up to 53% of PMI released from mental health facilities psychiatrically recidivate, that is decompensate and are consequently readmitted to a mental health facility, within 12 months of being discharged (Millman, 1993; Segal & Burgess, 2006). These high rates of criminal and psychiatric recidivism (see Definition of Terms) may be attributable to shared risk factors that similarly affect both criminal and psychiatric recovery. For example, PMI receiving community mental health services attributed factors such as unemployment, lack of education, lack of housing, and economic difficulties as contributing to their likelihood of psychiatric

recidivism (i.e., rehospitalization; Mgustshini, 2010), and these factors correspond to risk factors used in the prediction of criminal behavior (Andrews & Bonta, 2010; Draine, Salzer, Culhane, & Hadley, 2002). Additionally, Incarcerated PMI were found to have psychiatric hospitalization rates that were three times higher than PMI who were not CJ involved (Fisher, Packer, Banks, Smith, Simon, & Roy-Bujnowski, 2002) suggesting a unique feature, that may increase the potential for psychiatric hospitalization.

Given the poor CJ and psychiatric outcomes related to traditional mental health treatment, it has been suggested that treatment programs that address both criminogenic (e.g., substance abuse, emotion management, criminal attitudes, criminal associates) and psychiatric (e.g., medication compliance, mental illness awareness, social-skills, problem solving) needs of offenders will prove most efficacious in terms of reducing criminal behavior and improving mental health recovery (Moran & Hodgins, 2004; Morgan et al., 2010). However, treatment programs available to offenders in correctional facilities appear to focus primarily on mental health treatment and minimally, if at all, incorporate approaches for treating criminal behavior (Bewley & Morgan, 2011; Diamond, Wang, Holzer, Thomas & Cruser, 2001). Morgan and colleagues (2010) found that 83% of the programs offered to PMI who are CJ involved were limited to treating issues of mental illness, and just over 8% of the treatment programs addressed both criminal needs and mental illness; however, it is unclear what percentage of community mental health programs integrate criminogenic needs (see Definition of Terms) into their treatment programs. The need for integrated treatment is further highlighted by findings that PMI

have higher indicators of criminal risk factors compared to individuals without mental illness (Girard & Wormith, 2004).

Identifying features that are related to criminal risk that also lead to increased psychiatric hospitalization rates could prove influential for the development and implementation of specified and targeted interventions appropriate to the unique needs of PMI who are and are not CJ involved. Such results would identify a neglected treatment area for PMI regardless of setting (CJ or mental health) that should be addressed to improve treatment outcomes (e.g., symptom reduction, reduced recidivism). PMI who are CJ involved may have unique psychological needs and risk factors when it comes to offending behavior. Additionally, similarities in criminal thinking may impact psychological functioning and mental health of PMI who are not CJ involved.

To examine criminal thinking, CJ involvement, and mental health recovery this study will be conducted at Assertive Community Treatment (ACT; see Definition of Terms) and Forensic Assertive Community Treatment (FACT; see Definition of Terms) programs affiliated with community-based mental health centers located throughout the United States to examine constructs of criminal thinking, psychiatric symptomatology, psychiatric recovery, and CJ involvement. The study will utilize ACT programs as they are commonly used, and widely available across states to engage people with the most severe and persistent mental illnesses (Boust, Kuhns, & Studer, 2005). ACT programs are based on a model of service delivery developed by Stein and Test (1980; 1985). The model is defined by its team approach, and is focused on engaging individuals with chronic mental illness with mental health services in the community (Bond, Drake,

Mueser, & Latimer, 2001). Specifically, ACT programs deliver a vast majority of services in the community and the programs utilize a multidisciplinary treatment team that takes a holistic approach to providing services (e.g., medication, housing, finances, case management, transportation; Bond et al., 2001). Fidelity to the tenants of ACT can vary between programs and few are 100% compliant with all standards (Randall, Wakefield, & Richards, 2012); however, those exhibiting higher fidelity have shown better mental health outcomes (Bond et al., 2001). Features of ACT include multidisciplinary (e.g., substance abuse counselors, case managers, vocational therapists, psychiatrists, social workers), integrate and holistic treatment, low staff to client ratios (e.g., 10:1), assertive outreach, medication management, crisis responding, treatment to improve daily functioning, individualized service plans, and no treatment program time limitations (Bond et al., 2001).

ACT programs often receive clients from various referral sources and may include PMI with CJ involvement. This is especially true in communities where no FACT programs are in existence. FACT programs will also be included so that data can be gathered from PMI in the community who likely have more frequent and intense contact with the CJ system. Although there is no specified inclusion criteria regarding the degree of CJ involvements necessary for enrollment in a FACT program (Cuddeback, Morrissey, & Cusack, 2008), they typically engage PMI with significant CJ involvement (e.g., multiple incarcerations in a short period of time) as the goal is to prevent incarceration in addition to rehospitalization (Lamberti, Weisman, & Faden, 2001). As compared to ACT programs, FACT programs concurrently address mental health and criminogenic needs

with the goal of improving both mental health functioning and CJ outcomes (Cuddeback et al., 2008; Skeem et al., 2011).

For a more in depth summary of the literature regarding the involvement of PMI in the CJ system, please refer to the Extended Literature Review (see Appendix A).

Purpose of the Current Study

The purpose of this study was to enhance our understanding of PMI receiving community mental health treatment with regards to the prevalence of criminal thinking. Furthermore, this information allowed us to examine potential difference in consumers enrolled in different community based treatment programs and with different CJ histories, and to evaluate the impact of criminal thinking on CJ and mental health outcomes. Mental illness and criminality are conceptualized as comorbid treatment needs (Morgan, Kroner, & Mills, 2013), and findings that PMI who are CJ involved evidence both mental health and criminogenic (e.g., criminal thinking) symptoms support this conceptualization (Gross & Morgan, 2013; Morgan et al., 2010; Skeem et al., 2011; Wolff et al., 2011). Thus, it was relevant to examine the overlapping factors related to criminal and psychiatric recidivism.

Significance of the Current Study

This study is significant in that it will increase the understanding of the treatment needs of CJ and non-CJ involved PMI who are enrolled in evidence-based community mental health treatment programs. Recognition of the potential differences between CJ and non-CJ involved PMI receiving community mental health treatment may contribute to the development of more effective community-based interventions; thus, preventing

criminal activity and enhancing psychiatric recovery. If a relationship between criminal thinking and psychiatric outcomes is found, this would identify a key treatment need for PMI who are not CJ involved, and allow for tailored treatment and assessment.

Furthermore, results could provide information regarding how mental health symptoms and criminal thinking affect psychiatric recovery. This would identify previously unexamined treatment needs of PMI who are not CJ involved. Morgan and colleagues (2013) have developed a treatment program targeting both mental health and criminal treatment needs, but the development of specialized treatment programs targeting criminal thinking in PMI who are not CJ involved may also be warranted.

Research Questions

1. What is the prevalence of criminal thinking among people enrolled in ACT and FACT programs?
2. Does the prevalence of criminal thinking differ between people enrolled in ACT and FACT programs?
3. Will the prevalence of criminal thinking differ between people with and without CJ involvement?
4. What is the relationship between criminal thinking, and CJ and psychiatric outcomes? Specifically, are criminal thinking and treatment engagement; criminal thinking and recovery; criminal thinking and psychiatric recidivism; and criminal thinking and criminal activity related?

Research Hypotheses

1. The first research question is descriptive in nature. Given that the prevalence of criminal thinking in a community mental health sample has not been investigated in the literature, no specific hypotheses were made.
2. It was hypothesized that the participants enrolled in FACT programs would evidence higher levels of criminal thinking as measured by the PICTS-L-SF than those enrolled in ACT programs.

Rationale: Prior involvement in the CJ system is a criteria employed for the inclusion of an individual into FACT programs where those in ACT may or may not have a history of CJ involvement. Given the higher degree of CJ involvement of those in FACT programs, and the findings of prior research indicating the increased levels of criminal thinking for other CJ involved populations (i.e., incarcerated PMI, short-term psychiatric patients; Gross & Morgan, 2013; Morgan et al., 2010; Wolff et al., 2011), they were expected to evidence a similar pattern.

3. It was hypothesized that the participants with a history of CJ involvement would evidence higher levels of criminal thinking as measured by the PICTS-L-SF than those without a history of CJ involvement.

Rationale: Prior research has indicated that those involved in the CJ system (i.e., incarcerated PMI [Morgan et al., 2010; Wolff et al., 2011], short-term psychiatric patients with CJ involvement [Gross & Morgan, 2013]) evidence increased levels of criminal thinking when compared to

those not involved in the CJ system. Therefore, those enrolled in community based treatment with a history of CJ involvement were assumed to evidence a similar pattern.

4. It was hypothesized that the general criminal thinking (GCT) score obtained from the PICTS-L-SF would be positively correlated with treatment engagement as measured by the Service Engagement Scale (higher scores indicate greater difficulty with engagement), negatively correlated with recovery as measured by the Recovery Assessment Scale, positively correlated with the number of reported lifetime psychiatric hospitalization, and positively correlate with the number of arrests and incarcerations.

Rationale: PMI with a history of CJ involvement, and given prior research they also likely evidence higher levels of criminal thinking (Gross & Morgan, 2013; Morgan et al., 2010; Wolff et al., 2011), have psychiatric hospitalization rates that are three times higher than PMI without CJ involvement (Fisher et al., 2002). Therefore, it can be reasonably suggested that a risk factor (i.e., criminal thinking) not present in the PMI without CJ involvement could be responsible for this difference. Furthermore, given that psychiatric recidivism is a result of psychiatric decompensation their criminal thinking patterns may prevent the consumer from adequately engaging in and fully benefiting from treatment services.

Assumptions

1. Consumers appropriately attended to the item content and completed the measures consistent with the directions provided.
2. Consumers participating in this study were representative of the overall population of consumers receiving community mental health services via ACT and FACT programs across the United States.
3. The PICTS-L-SF, BSI, RAS, and SES are valid measures of the constructs for which they are intended to measure.
4. Information regarding criminal behavior (e.g., illegal drug use, fighting) and CJ involvement (e.g., arrest, incarceration) gathered in this study was a valid indicator of general engagement in criminal activity.

Definition of Terms

- Assertive Community Treatment (ACT): A program of community based, mental health treatment utilizing an intensive and integrated model of service delivery for persons with severe and persistent mental illness.
- Criminal Recidivism: Contact with the CJ system resulting from the commission of a new crime after previous or current involvement (conviction, incarceration, community supervision) in the CJ system.
- Criminal Thinking: Maladaptive thought patterns that served to increase and sustain one's propensity to engage in criminal behavior.
- Criminogenic Needs: Dynamic risk factors that affect one's propensity to engage in criminal behavior.

- Forensic Assertive Community Treatment (FACT): A program of community based, mental health treatment that integrates the treatment of criminal risk factors and utilizes an intensive and integrated model of service delivery for persons with severe and persistent mental illness.
- Persons with Mental Illness (PMI): Any individual with a diagnosis meeting the criteria of the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (2000) for any major Axis I disorders of (e.g., Schizophrenia and other psychotic disorders, Bipolar Disorder I and II, and Major Depressive Disorder).
- Psychiatric Recidivism: Admission to a psychiatric facility following a prior release from any inpatient psychiatric facility due to psychiatric decompensation (e.g., impaired functioning, increased psychiatric symptomatology; see Polk-Walker, Chan, Meltzer, Goldapp, Williams, & Whall, 1993; Morgan, Kroner, & Mills, 2013).

CHAPTER TWO

METHODOLOGY

Participants

Sites

ACT and FACT programs were identified for participation from a database of community-based mental health treatment programs that participated in a web-based survey of mental health programs conducted by the Center for Behavioral Health Services & Criminal Justice Research (CBHSCJR) at Rutgers University ($n = 59$) and via referral from contacted treatment programs ($n = 5$). The ACT and FACT programs contained in the database represent a national sample as programs are located throughout 23 states representing all geographic regions (i.e., Northeast, Midwest, Southwest, and West) of the United States. Researchers were unable to initiate contact with 22 programs (34.4%), and of the programs contacted five (7.8%) agreed to participate in the study. However, only data from 4 of the sites that agreed to participate in the study are included as the fifth site was scheduled for a date beyond the completion of dissertation but within the timeframe of the funding period. Of the programs that were contacted but did not participate, 12 (18.8%) refused to participate, 10 (15.6%) did not have an ACT or FACT-like program, and 15 (23.4%) initially expressed interests but became nonresponsive to contact attempts made by researchers. A total of four sites located in Washington, Idaho, Colorado and Florida participated yielding the inclusion of 2 FACT and 2 ACT programs (with one site having 22 different ACT based treatment teams). The Colorado site was the largest and accounted for over half of the sample ($n = 145$, 64.4%). Programmatic

information was requested from 25 treatment team supervisors, but responses were only obtained from 6 (24%). Of those who responded, a majority of the variables had responses from 2 or less facilities. Therefore, the data were not analyzed as it did not adequately represent the responding agencies.

Consumers

Data were collected from 225 male and female PMI receiving community mental health services via enrollment in programs with a service delivery model based on ACT ($n = 176$, 78.2%) or FACT ($n = 49$, 21.8%). Consumers were excluded from participation if they were younger than 18 years of age, non-English speaking, were unable or unwilling to provide informed consent (i.e., under guardianship), were unwilling to allow access to their clinical file, or were unwilling to have their case manager respond to questions regarding their engagement in services. This criteria was supplied to the treatment centers, and individuals not meeting these criteria were not referred for participation. Therefore, the number of consumers who were excluded from participation due to these criteria is unknown. For those who were referred for participation by the site, very few participants refused participation ($n = 10$, 4.3%). Of those 10 individuals who refused participation, they also refused to sign an alternate consent form to provide only their demographic information. Consequently, no information was available to determine if there were demographic differences between consumers who did and did not agree to participate in the survey. However, it is important to note that this refusal rate may underrepresent the actual refusal rate as consumers may have decided to not participate once receiving the recruitment letter (see Procedure). The number of consumers who

received the recruitment letter is unknown. Of the 225 consumers who participated in the study, data were lost for four of the participants due to computer error. All descriptive data and analyses are based on the remaining 221 participants.

A majority of the sample was male ($n = 133$, 60.3%) with 38.5% of the sample being female ($n = 85$), and 1.4% of the sample identifying as transgendered ($n = 3$). The participant's mean age was 42.48 years ($SD = 11.35$, range 19 to 68), and they were predominantly Caucasian ($n = 97$, 43.9%) followed by African American ($n = 73$, 33%), Hispanic or Latino/a ($n = 21$, 9.5%), American Indian or Alaska Native ($n = 15$, 6.8%), Other ($n = 10$, 4.5%), Asian ($n = 1$, 0.5%), Native Hawaiian or Other Pacific Islander ($n = 1$, 0.5%), and 3 participants refused to provide their race (1.4%). The participants reported a mean of 11.46 completed years of formal education ($SD = 3.07$, range 0 to 24). Over one half of the sample reported their relationship status as Single/Non-Committed ($n = 138$, 62.4%), where as 15.8% ($n = 35$) of the participants reported being Divorced, 7.7% ($n = 17$) Separated, 5.9% ($n = 13$) Married, 4.5% ($n = 10$) Partnered/Common Law, and 3.6% ($n = 8$) Widowed. Only 7.2% ($n = 16$) of the sample was employed either part of full-time with 71.5% ($n = 158$) of the sample receiving disability benefits. Approximately one-half of the sample was living independently and alone in a house or an apartment ($n = 107$, 48.4%). Additionally, in the past year 35.1% ($n = 79$) of participants spent time with criminal associates, 40% ($n = 90$) used illegal drugs, 72.4% ($n = 163$) experienced financial difficulty, 31.6% ($n = 71$) experienced homelessness, and 49.8% ($n = 112$) had difficulty getting along with family members.

Participants were predominantly diagnosed with psychotic disorders; Schizoaffective ($n = 60$, 28.4%), Schizophrenia ($n = 35$, 16.6%), and Psychotic Disorder NOS ($n = 11$, 5.2%). Additional diagnoses of Bipolar I or II ($n = 44$, 20.9%), Major Depressive Disorder ($n = 31$, 14.7%), Mood Disorder Not Otherwise Specified (NOS; $n = 13$, 6.2%), Other (e.g., Attention Deficit/Hyperactivity Disorder, Adjustment Disorder; $n = 9$, 4.3%), Post Traumatic Stress Disorder ($n = 5$, 2.4%), and Generalized/Social Anxiety ($n = 3$, 1.4%) were also present in the sample. Almost three fourths of the sample ($n = 151$, 71.6%) was diagnosed with a comorbid substance abuse disorder, and 9.4% ($n = 20$) had a diagnosis of Antisocial Personality Disorder. Participants had a mean length of enrollment in their current community mental health treatment program of 61.44 months ($SD = 75.53$, range 0.03 to 272), and 90% of the sample were receiving psychotropic medications.

The majority of participants had a history of CJ involvement as 90.5% ($n = 199$) had been arrested at least once in their lifetime, 78.6% ($n = 173$) had been incarcerated at a jail, and 30.5% ($n = 67$) had served a prison sentence. For participants who reported a prior arrested, the mean number of reported arrests across their lifetime was 12.8 ($SD = 13.92$, range 1 to 61). Many participants ($n = 85$, 43.3%) were under community supervision (i.e., probation or parole) at the time of participation. Additionally, in the past year some participants reported having committed a felony 14.7% ($n = 33$), misdemeanor 24% ($n = 54$), municipal 4% ($n = 9$), violent 6.2% ($n = 14$), or drug 5.3% ($n = 12$) crime.

Histories significant for inpatient psychiatric hospitalization were common as 79.2% ($n = 175$) had been hospitalized at least once in their lifetime. The mean number of

psychiatric hospitalizations for those who endorsed this item was 7.05 admissions across their lifetime ($SD = 8.63$, rang 1 to 41).

Materials

Informed Consent – Participant Form (see Appendix B). A written informed consent form was used to inform potential participants of the purpose of the study, the types of information to be requested from the participant, potential gains and risks as a result of participation, confidentiality of their responses, data protection and their rights as a human subject participant, contact information for the principle investigator and Texas Tech University Institutional Review Board for the Protection of human Subjects. Additionally, the participants were explicitly informed that their consent to participate in the study also provided the researchers with permission to review their file at the community mental health center from which they received services, and to obtain information from their case manager regarding their involvement in treatment.

Informed Consent – Non-Participant Form (see Appendix C). For those refusing participation in the study, we requested that they provide basic demographic information. An alternate written informed consent form was used to notify potential participants about the purpose of the study, the types of information (i.e., demographic and general mental health history) to be requested from the participant, potential gains and risks as a result of participation, confidentiality of their responses, data protection and their rights as a human subject participant, contact information for the principle investigator and Texas Tech University Institutional Review Board for the Protection of Human Subjects.

Demographic Form (see Appendix D). A researcher developed demographic form was utilized to gather basic demographic information from the participants. Specifically, the form requested information such as age, gender, race/ethnicity, relationship status, completed years of formal education, number and age of children, employment status, and living arrangement. Additionally, information on current and past mental health treatment (e.g., diagnoses, psychiatric medications, psychiatric hospitalizations) was requested on this form.

Brief Symptom Inventory (BSI; see Appendix E). The BSI (Derogatis & Melisaratos, 1983) is a 53-item, self-report inventory designed to assess the presence and intensity of current psychiatric symptoms. The BSI was created as a shortened version of the Symptom Checklist – 90 – Revised (SCL-90-R; Derogatis, 1993). Each item is presented as a problem “people sometimes have.” Response options to items on the BSI are provided using a 5-point Likert-type scale (0 = Not At All, 1 = A Little Bit, 2 = Moderately, 3 = Quite a Bit, 4 = Extremely; Derogatis, 1993) with reference to the degree to what the problem had been distressing or bothersome over the last seven days. The BSI yields 9 primary symptom scales: somatization (perceptions of problems with one’s health or body), obsessive-compulsive (experiences of irresistible and impulsive actions or thoughts), interpersonal sensitivity (feelings of inadequacy or inferiority in comparison with others), depression (feelings such as sadness, anhedonia and hopelessness), anxiety (experiences of nervousness and panic), hostility (experiences of anger), phobic anxiety (experiences of fear directed toward a specific object), paranoid ideation (experiences of suspicion and perceived negative intentions of others) and psychoticism (feeling socially

alienated and experiences of abnormal thought processes). Additionally, the BSI yields three global indices of distress (i.e., global severity index [GSI], positive symptom distress index [PSDI], positive symptom total [PST]). Unlike the symptom scales that assess the presence of specific symptoms, the global indices of distress assess the intensity of the distress experienced (GSI), average level of distress and the personal experience of such distress across all symptoms (PSDI), and the number of symptoms experienced (PST; Derogatis, 1993).

Raw scores for each of the primary symptom scales and the global indices of distress are calculated by finding the average score across all test items that load on each scale. Raw scores are then converted to standardized T scores utilizing norms for gender and population (i.e., adult psychiatric outpatients, adult non-patients, adult psychiatric inpatients, adolescent non-patients). The BSI results may be significantly altered if 13 or more item responses are omitted or if the omitted responses cluster around specific scales; however, missing data can be corrected for by altering the denominator to reflect the actual number of responses when calculating the raw score for each scale or index (Derogatis, 1993). A profile is considered to meet the clinical threshold for “caseness” (a positive case for a psychiatric disorder) if the GSI or any two symptom scales have a T score greater than or equal to 63 (Derogatis, 1993).

Regarding utility of the measure with special populations, the BSI appears appropriate for use with various ethnicities (i.e., African, white, and Latino Americans; Hoe & Brekke, 2008), and psychiatric outpatients with borderline intellectual functioning to mild mental retardation (Wineland, Wardenaar, Fontein, & Zitman, 2011; Kellett,

Beail, Newman, & Hawes, 2004). Wineland and colleagues (2001) further reported differentiation among the nine symptoms subscales, and their results supported the underlying nine factor structure utilizing confirmatory factor analysis. However, results regarding the factor structure are mixed (Hayes, 1997), and it appears that the strongest support is for a unidimensional model of the BSI as measure of general or overall psychological distress (for example: Piersma, Boes, & Reaume, 1994; Loutsiou-Ladd & Kokkinos, 2008; Benishek, Hayes, Bieschke, & Stoffelmayr, 1998).

Given the lack of evidence for the nine symptom scales, only the GSI and PST will be utilized (separately) in the main correlational analyses (i.e., research question 4). The primary symptom scales will be used to describe the sample, but will not be interpreted or included in the correlational or multivariate analyses.

Internal consistency reliability, as a property of the scale scores of the BSI has been shown to be greater than 0.70 for the subscales and test-retest reliability ranges from 0.68 to 0.91 for the symptom scales and 0.80 to 0.90 for the global indices (Derogatis, 1993). Good convergent validity has also been demonstrated for the scale scores with the SCL-90-R and MMPI. Correlations between the BSI and SCL-90-R 9 symptom scales were greater than or equal to 0.92, and the correlations between the 9 symptom scales of the BSI and the subscales of the MMPI ranged from 0.30 to 0.72 (Derogatis, 1993). The BSI has been normed utilizing a number of different samples including adult psychiatric outpatients and is written at a sixth grade reading level (Derogatis, 1993). The internal consistency of the items on the BSI in this study was high, yielding a Cronbach's alpha of .98 (see Table 1).

Psychological Inventory of Criminal Thinking Styles – Layperson Edition – Short Form (PICTS-L-SF; see Appendix F). The PICTS-L-SF (Walters, 2011) is a 35-item, self-report measure. Like all versions of the PICTS, the PICTS-L-SF is designed to assess thought patterns that are associated with criminal behavior (Walters, 2006a). A layperson version of the PICTS, the PICTS-L, was developed by James Kaufman for the purpose of measuring criminal thinking in non-offender populations (G. D. Walters, personal communication, March 2011). This was done by altering the wording of the questions so that a history of criminal behavior was not assumed. For example, the question on the PICTS reading “I have used alcohol or drugs to eliminate fear or apprehension before committing a crime” is changed on the PICTS-L to read “I have used alcohol or drugs to eliminate fear or apprehension before doing something risky.” Additionally, a Short Form version of the PICTS (Walters, 2006a), the PICTS-SF, was developed to create an abbreviated version, 35 versus 80 test items, that requires less time to complete.

The PICTS-L-SF was developed by the researchers for the purposes of this study. This was done by selecting the test items on the 80-item PICTS–L that corresponded to the 35 items on the PICTS – SF (PICTS-SF; G. D. Walters, personal communication, February 2012). Response options to items on the PICTS-L-SF are provided using a 4-point Likert Scale (1 = disagree, 4 = strongly agree; Walters 2006a). The scales on the original PICTS were created utilizing exploratory and confirmatory factor analysis (Walters, 1995, Walters, Elliott, & Miscoll, 1998; Walters, 2002; Walters, 2006b) and these scales were utilized based on the items of each scales that were retained in the PICTS-L-SF. The PICTS-L-SF produces two content scales (i.e., Current Criminal

Thinking and Historical Criminal Thinking), two composite scales (i.e., Proactive Criminal Thinking and Reactive Criminal Thinking), seven thinking pattern scales (i.e., Mollification, Cutoff, Entitlement, Sentimentality, Superoptimism, Cognitive Indolence, and Discontinuity), and four Factor and Special Scales (i.e., Problem Avoidance, Interpersonal Hostility, Self-Assertion, and Denial of Harm; G. D. Walters, personal communication, February 2012). Despite the scales yielded, Walters identifies General Criminal Thinking and the composite scales as the “most important scores on the inventory” (G. D. Walters, Personal Communication, March 2013).

There are no cutoff scores distinguishing the presence or absence of each of the criminal thinking scales, but guidelines are provided for interpreting the criminal thinking styles T-scores as Low (< 40), Average ($\geq 40, < 60$), High/Clinically Significant ($\geq 60, < 70$) and Very High (≥ 70 ; Walters, 2006a). It should be noted that given the results of Walters, Hagman, and Cohn (2011), revisions to the scoring of the PICTS have been altered based on the results of IRT analyses; however, since a revised treatment manual with updated norms is not available, the recommendations of Walters (2006a) will be followed. Three validity (i.e., ? scale, Confusion-revised [Cf-r], Defensiveness-revised [Df-r]), scales are also produced that assist in the determination of the validity of the profile. A T score greater than or equal to 75 on either the Cf-r or the Df-r scales suggest that the profile is likely invalid, and any interpretations should be made cautiously. However, Walters (2006a) ascertains that retaining profiles with validity T scores up to 100 may have some research utility. The researchers decided to exclude profiles that

yielded validity T scored greater than 80 as to avoid the liberal inclusion of random responders.

On the 80-item PICTS, more than 5 omitted items (i.e., ? scale) results in a questionable profile; however, given that the short form will be used in this study the measure demonstrates less tolerance for missing items as fewer items contribute to the calculation of each scale. Utilizing the percentage of omitted items allowed on the PICTS (i.e., 6.25%), it was established that any response set on the PICTS-L-SF with 2 or more items omitted were considered invalid. Profiles containing less than 2 omitted items were retained, but depending on the distribution of the omitted items, this may result in an inability to calculate some scale scores.

All PICTS-L-SF scales were utilized for establishing the prevalence of criminal thinking in the sample (i.e., research question 1). Additionally, composite, content, criminal thought pattern scales and GCT were utilized in the multivariate analyses (research questions 2 and 3), and GCT will serve as the dependent variable in the correlational analyses (research question 4).

There are no published studies utilizing the PICTS-L-SF, and therefore no information regarding the measures psychometric properties. The PICTS-L has been found to be psychometrically sound, “test-retest reliability, internal consistency, and preliminary validity of the scale scores on the PICTS-L have been found to be satisfactory” (J. Kaufman, personal communication, as cited in Walters, Felix, & Reinoehl, 2009, p. 705), but it is unclear if the PICTS-L-SF would perform similarly. The results of the PICTS scale scores have demonstrated moderate to high levels of internal

consistency and test-retest reliability in offender samples. The internal consistency for the PICTS subscales produced a Chronbach's alpha ranging from 0.54 to 0.91 for male and female offenders (Walters, 1995; Walters, Elliott, & Misco, 1998). Inter-item correlations ranged from 0.13 to 0.39 and test-retest reliability was greater than 0.70 after two weeks and greater than 0.50 for all but three of the 19 scales after twelve weeks (Walters, 2006a). Convergent validity of the scales of the PICTS with the Antisocial Features (ANT) scale of the Personality Assessment Inventory (PAI) ranged from .26 to .54. Further, the scales displayed convergent validity with the PAI scales that are unrelated to criminal thinking (Walters & Geyer, 2005). Additionally, when comparing the properties of the PICTS scales to other measures of criminality such as the Psychopathy Checklist-Revised (PCL-R) and the Lifestyle Criminality Screening form (LCSF-R), they demonstrated moderate correlations of -.32 and .51 respectively (Walters, 2001). The scales on the PICTS also assist in the prediction of criminal risk (i.e., prior arrests and incarcerations, age at first arrest and incarceration) as the scales demonstrate convergent validity with these variables as correlations range from -.32 to .33 (Walters, 2001). The PICTS scales have also been found to be correlated with criminal recidivism (Walters, 2006b; see Definition of Terms). The internal consistency of the items on the PICTS-L-SF in this study was high, yielding a Cronbach's alpha of .94. The internal consistency of the items composing each individual scale can be found in Table 1.

Recovery Assessment Scale (RAS; see appendix G). The RAS (Gifford, Schmook, Woody, Vollendorf, & Gervain, 1995) is a self-report, 41 item scale designed to assess self-perceived psychiatric recovery. Respondents are asked to indicate the degree to

which the items (e.g., I have a desire to succeed, I can handle what happens in my life, If I keep trying I will continue to get better, My symptoms interfere less and less with my life) describe how they feel about themselves and their lives. Response options to items are provided using a 5-point Likert Scale (1 = Strongly Disagree, 5 = Strongly Agree). Utilizing confirmatory and exploratory factor analysis (Corrigan, Salzer, Ralph, Sangster, & Keck, 2004) five factors were yielded from a sample of over 1,800 persons with serious mental illness. The five domain scores are; personal confidence and hope, willingness to ask for help, goal and success orientation, reliance on others and no domination by symptoms. The domain scores were entered as simultaneous predictors in the correlational analyses (research question 4). The properties of the RAS scale scores have demonstrated good internal consistency with a Cronbach's alpha of 0.93, and acceptable test-retest reliability ($r = 0.88$; Corrigan, Giffort, Rashid, Leary, & Okeke, 1999). The RAS scale scores have also been shown to have good concurrent validity with a number of measures including the Rosenberg Self-Esteem Scale (RSES), the Mental Health Recovery Measure (MHRM), and the Self-Identified Stages of Recovery (SISR; Burgess, Pirkis, Coombs, and Rosen, 2010). The internal consistency of the items on the RAS in this study was high, yielding a Cronbach's alpha of .95. The internal consistency of the items composing each individual scale can be found in Table 1.

Service Engagement Scale (SES; see Appendix H). The SES (Tait, Birchwood, & Trower, 2002) is composed of 14 items designed to assess the treatment provider's perception of the client's treatment engagement with community mental health services (Tait, Birchwood, & Trower, 2002). Response options to items are provided by the

client's treatment provider using a 4-point scale (0 = Not at All or Rarely, 3 = Most of the Time). The SES items were theoretically developed to yield four scale scores (i.e., availability, collaboration, help seeking, treatment adherence) and a total scale score. Although the items appear to have face validity and correspond to the scales, no statistical analyses have been conducted to evaluate the SES's factor structure. Higher scores on the scales indicate greater difficulty in engaging with services. The scales were entered simultaneously into the correlational analyses (research question 4). The SES scale scores demonstrate properties of reliability as the Chronbach's alpha (internal consistency) for the scales ranged from 0.76 to 0.90, correlations for inter-rater reliability ranged from 0.80 to 0.97, and test-retest reliability ranged from 0.80 to 0.97. Additionally, the measure's scale scores have been shown to distinguishing between difficult to engage clients and easily engaged clients. Specifically, average SES scores were significantly lower for clients identified as having difficulty engaging with services (mean = 19.7) compared to clients identified as not having difficulty engaging with services (mean = 4.7; Tait et al., 2002). The internal consistency of the items on the SES in this study was poor, yielding a Cronbach's alpha of .58. The internal consistency of the items composing each individual scale can be found in Table 1.

Behavioral and Criminal History Form (see Appendix I). This researcher-developed questionnaire is composed of 23 items. It requests information on participants' CJ involvement (e.g., arrests, legal charges, incarcerations, participation in mental health or drug court), behaviors that have been shown to increase the risk for CJ involvement (e.g., criminal associates, drug use, family problems) and other problematic behaviors or

experiences (e.g., fighting, feelings of rage, gambling, abuse history). Data to be used in subsequent descriptive, correlational and multivariate analyses includes only the arrests, legal changes, and incarceration history data. Sample items include: Have you been arrested in the past year, have you ever been incarcerated at a jail, have you participated in a mental health court in the past year, in the past year have you used illegal drugs? Arrest history and incarceration history were utilized for between group classification in research question 3. Additionally, the number of arrests and number of incarcerations were entered as predictor variables in correlational analyses (research question four).

File Review Form (see Appendix J). Where available, data was taken from the participants' files (including paper or electronic charts as available) at the community mental health center indicating: date enrolled in ACT or FACT treatment program; referral source to treatment; psychiatric diagnoses (Axis I and II); number of appointments scheduled and number attended in the past three months; number of arrests in the past three months, year and lifetime (since age 18), number of psychiatric hospitalizations in the past three months, year and lifetime (since age 18), and military history.

Program Information Questionnaire (see Appendix K). Given programmatic and funding variations, data was collected from the program director or supervisor at each site that participates in the study. Information was gathered regarding the number of years the ACT or FACT treatment program has been in operation, the total number of consumers enrolled in the program, demographic characteristics of the consumers served, and the average length of program enrollment. Additionally, information regarding referral

sources to program, program qualification requirements, funding sources (i.e., government, private, both), types of service providers involved in consumer care, and affiliation with any correctional facility, diversion program or mental health or drug court was requested.

Procedure

Participant Recruitment. Contact was attempted with all ACT and FACT programs ($N = 59$) identified in the CBHSCJR database from the previous research project, and the 5 referrals received from contact programs for other ACT or FACT programs they were aware of. A recruitment email, with detailed study information, was sent to the supervisors at all 63 programs. Follow-up recruitment emails were sent to programs that had not responded within two weeks of the initial email. For those programs that did respond to either recruitment email, contact was attempted via telephone. A program was determined to be “unreachable” after four phone calls (a message was left on the first and fourth phone call) and two emails were sent with no response.

Programs that were contacted were provided detailed information about the study (e.g., program inclusion criteria, assistance needed from the site), and were provided with the opportunity to ask questions about the information they received and to participate in the study. Programs that were unwilling to participate or did not qualify for participation (i.e., no ACT or FACT program) were asked to provide contact information of other qualifying programs that they were aware of. For those programs that agreed to participate, the researchers pursued internal IRB approval from each individual site.

Data collection was terminated when the contact procedure (outlined above) was exhausted for all potential sites.

Data Collection. Once participating sites were ready to proceed (e.g., all approvals were obtained) the researchers scheduled dates for onsite data collection. Sites serving 100 consumers or less ($n = 2$) were visited for three days, and sites serving more than 100 consumers ($n = 2$) were visited for five days for data collection. The eligibility criteria (i.e., 18 years of age or older, English speaking, not under guardianship) for consumers to participate in the study was provided to program coordinators, and they were asked to provide this information to case managers and other staff that were involved in notifying and identifying potential participants. Researchers also provided the program site with a recruitment letter (see Appendix L) that was printed on the site's letter head. At the discretion of the program site, recruitment letters were distributed to eligible consumers either via postal mail or delivered by hand by treatment providers during their regularly scheduled visits prior to the scheduled site visit for data collection. These letters invited the consumer to participate in a 60-minute, computer administered survey that was scheduled at the treatment site during regular business hours (i.e., 8-5). There were two researchers on site; one responsible for consenting, the other monitoring the survey process. For those consumers who were unable to read ($n = 6$) the survey was administered orally by a researcher. Additionally, some participants utilized headphones to allow for the computer to audibly present the questions and response items to the participants ($n = 13$), or had the researchers enter their responses due to difficulty using the computer ($n = 5$). The majority of participants required some assistance with

computer use (e.g., how to use a computer mouse), but quickly began entering their responses independently. Researchers had five computers available over the 8-hour period yielding 40 interview slots per day.

Upon arrival at the site, potential participants were verbally informed about the nature and purpose of the study, and of their rights as a research participant (e.g., confidentiality, right to withdraw) should they decide to participate. They were informed that the survey takes approximately 60 minutes to complete, and that they would receive \$10 for their time. Additionally, risks and benefits of participation were verbally explained to them. Individuals willing to participate were provided a written informed consent form (see Appendix A) and asked if they were able to read the form. Participants that indicated difficulty reading the consent form had the consent and all subsequent measures read aloud to them by the computer or a research assistant. The participants were asked to sign one consent form that includes their consent to complete the study, their consent for the researchers to review their medical records at the facility, and their consent for their case manager to provide information about their treatment to the researchers. After providing consent, consumers received a copy of an unsigned consent form to retain for their records.

Participants who were unwilling to provide consent to complete the survey, have their file reviewed, or allow their case manager to provide information about their treatment, were excluded from participation. However, they were asked if they would be willing to sign an alternate consent form (see Appendix B) to provide only demographic and general mental health data to the researchers for purposes of examining selection bias.

However, all consumers that declined full participation also declined to sign the alternative consent form to provide demographic information. It was anticipated that consumers experiencing symptoms of paranoia would be reluctant to participate in the survey and potentially provide demographic information. It was also reasonable to assume that older clients or those with lower levels of educational achievement may have been intimidated by the computers or the assumed cognitive effort to complete the measures.

Given the vulnerable population that was recruited to participate in the study, extra precautions were implemented to ensure that participants had the capacity to provide informed consent. After reading the form and having their participation explained to them, the researchers asked consumers to summarize what they understood from the information provided to them. For participants that failed to demonstrate an understanding of the information provided to them, researchers provided further, simplified explanations until they were determined to have a sufficient understanding to proceed or clearly lacked the capacity to provide consent. No participants who elected to participate were determined to not have the capacity to consent to participate.

Consumers who consented to participate were presented the measures as a computer-based survey. Again, for those who previously indicated reading difficulties during the consenting procedure or who were uncomfortable using computers, the survey was administered verbally by a researcher in a private location. Via the computer, all participants were presented the Demographic Form first, followed by the Behavioral and Criminal History Form, BSI, PICTS and RAS that were alternately presented across the

five computers to limit sequencing effects. A research assistant remained with participants while the measures were completed. This enabled the participants to ask any questions or report any concerns that arose during the completion of the measures, and this information was recorded in the data collection field log (see Appendix M).

Ideally, data was collected during one uninterrupted session; however, some testing sessions were interrupted due to unexpected circumstances (e.g., restroom break, participant fatigue, doctor's meeting; $n = 11$). A total of 3 participants terminated their testing session prior to completing all of the measures due to fatigue and one failed to complete the measures due to mental health symptomatology (i.e., had a panic attack). All interruptions and breaks in testing were recorded by researchers in the data collection field log. At the conclusion of the data collection session, participants were thanked for their participation, compensated \$10 for their time, and excused from the session.

File reviews (as consented by the participants) were completed by a research assistant utilizing the File Review Form (see Appendix J) for each participant. One site completed the File Review Form for their consumers as researchers were denied direct access to their electronic data management system to protect the confidentiality of non-participating consumers. Additionally, case managers were asked to complete the SES for each of their consumers that participated in the study. Case managers were emailed a password protected document and were provided a link to a password protected web-based SES measure in a separate email. They were asked to complete one SES assessment for each individual participant. Utilizing the emailed word document, the three-digit participant number was entered by the case manager at the start of each

assessment to ensure that the raw data were not directly linked with the participant's name. The case manager was instructed to delete the email and shred any document identifying the participant. Lastly, program characteristics (i.e., number of years the ACT or FACT treatment program has been in operation, total number of consumers enrolled in the program, demographic characteristics of consumers served, average length of program enrollment, referral sources to program, program qualification requirements, funding sources, types of service providers involved in consumer care, affiliation with any correctional facility diversion program or mental health or drug court) were requested from each site included in the study. This information was gathered utilizing a web-based survey that was provided to the program directors at each site.

Confidentiality. To protect participant confidentiality, no identifying information, such as name or institutional identification number, was recorded during the survey. All data was collected electronically, and is only identified by a three-digit research participant number. A temporary document linking the participant name to their participant number was created for the purposes of informing their case managers the consumers for whom they needed to complete an SES. The electronic document was password protected, only accessible by the researchers and the case managers, and was to be destroyed once the case managers completed the SES for each consumer. The participants also place their name on the consent form and a participant payment form required by the university; however, this information was stored separately from their data. The consent forms were maintained in a locked file cabinet, along with the field log sheets. Only research assistants directly involved with this project have access to the data.

Participant payment forms were provided to the university and were not retained by the researchers. During testing, no incidents requiring a breach of confidentiality (e.g., presenting a risk of harm to self or others) were encountered.

Research Design and Statistical Analyses

Data Analysis. All data were reviewed for outliers and missing data. Data that did not conform to distributional assumptions (e.g., normality, linearity, and homoscedasticity) were transformed as appropriate or analyzed using methods to adjust for the violations (Tabachnick & Fidell, 2007). Furthermore, demographic variables were examined to determine if inclusion as a covariate in the multivariate and correlational analyses was appropriate. For a detailed explanation of how assumptions were assessed and the results of these analyses, see Data Screening and Preparation below.

Given the sampling procedure (i.e., data collection was terminated after all potential sites that consented to participate were included and not when the desired participant number was met) it was anticipated that the number of participants in the study would exceed the number of participants needed as determined by the power analysis (see Power Calculation below). This was the case; however, the samples sizes were vastly unequal between the participants enrolled in ACT ($n = 176$) and FACT ($n = 49$) programs, and between participants with ($n = 199$) and without CJ involvement ($n = 20$) as defined by a history of prior arrest. Furthermore, the sample sizes were reduced further for some analyses based on the responding of the participants (e.g., invalidated the PICTS, refused to answer a sufficient number of BSI questions; see Missing Data below). Therefore, utilizing a matched sampling procedure would significantly reduce the sample

size and subsequently the power of the analyses. In order to retain all cases and to limit the impact of unequal sample sizes on the analyses (i.e., MANOVA), a strategy to adjust for unequal sample sizes was utilized with the multivariate analyses. As suggested by Overall and Spiegel (1969), non-experimental research can utilize a “Method 2” procedure where a hierarchical testing procedure is utilized, and marginal means are weighted by the sample size of each cell. This procedure emphasizes main effects and limits the negative impact of unequal sample sizes, but is only appropriate for use when the differences in sample sizes are assumed to reflect real distributional differences in the population (Tabachnick & Fidell, 2007). Lastly, as suggested by Tabachnick and Fidell (2007), in MANOVA analyses where the assumption of homogeneity of variance-covariance matrices is violated, Pillai’s trace should be used in place of Wilk’s Lambda if the results between the two statistics differ, as it is more conservative and robust against violations of assumptions. However, this substitution was not possible because Wilk’s Lambda and Pillai’s trace will not differ for analyses when the fixed factor only includes two variables (Tabachnick & Fidell, 2007), and therefore the Wilk’s Lambda statistic will be used when reporting results from all MANOVA analyses.

Research Question #1: What is the prevalence of criminal thinking among people enrolled in ACT and FACT programs, and those with and without CJ involvement?

Analysis: Means and standard deviations were calculated for the ACT and FACT programs and CJ and non-CJ involved participants on each subscale of the PICTS-L-SF.

Research Question #2: Does the prevalence of criminal thinking differ between people enrolled in ACT and FACT programs?

Analysis: A multivariate analysis of variance (MANOVA) was conducted with program type (i.e., ACT and FACT) as the independent variable. The two composite scales, the two content scales and the seven thinking style scales from the PICTS-L-SF were entered as dependent variables in separate MANOVA analyses for each scale group. An independent samples t-test was conducted with program type serving as the independent variable and the General Criminal Thinking scale on the PICTS-L-SF was entered as the dependent variable.

Research Question #3: Will the prevalence of criminal thinking differ between people with and without CJ involvement (i.e., history of arrest)?

Analysis: A MANOVA was conducted with CJ involvement (separate analyses for history of arrests and history of jail incarcerations) as the independent variable. The two composite scales, the two content scales and the seven thinking style scales from the PICTS-L-SF were entered in as dependent variables in separate MANOVA analyses for each scale group. An independent samples t-test was conducted with CJ involvement (separate analyses for history of arrests and history of jail incarcerations) serving as the independent variable and the General Criminal Thinking scale on the PICTS-L-SF was entered as the dependent variable.

Research Question #4: What is the relationship between criminal thinking and CJ and psychiatric outcomes? Specifically, how are criminal thinking and treatment engagement; criminal thinking and recovery; criminal thinking and psychiatric recidivism; and criminal thinking and criminal activity correlated?

Analysis: Separate, linear regression analyses were conducted with (1) the scale scores (simultaneous) from the SES, (2) the GSI Score from the BSI, (3) the PST from the BSI, and (4) the scale scores (simultaneous) on the Recovery Assessment Scale as the predictor variable(s). General Criminal Thinking (GCT) from the PICTS-L-SF was entered as the dependent variable. Additionally, negative binomial regressions were utilized for the correlational analyses that included count data. The total number of self-reported psychiatric hospitalizations, and self-reported number of lifetime arrests were entered as predictor variables, with GCT as the dependent variable.

Power Calculation. A power analysis was calculated utilizing G*Power 3.1.3 Software (Faul, Erdfelder, Buchner, & Lang, 2009) for a MANOVA with two independent variables (i.e., ACT and FACT programs) and seven dependent variables (i.e., criminal thinking styles) as it is one of the primary analyses of interest and would require the largest sample size of the primary analyses to be completed. The sample size was calculated with the intent to obtain sufficient power (>0.80). Based on the effect sizes found in a previous study (Gross & Morgan, 2013) that utilized the PICTS with an inpatient psychiatric sample, a medium effect size ($f^2 = .15$) was chosen at an alpha level $= 0.05$. The calculation indicated that a MANOVA design with seven dependent variables requires a total sample size of 104 participants. To account for the occurrence of incomplete or missing data, the target sample size was 150 participants total (75 participants enrolled in ACT and 75 participants enrolled in FACT). The overall sample size of 150 participants was exceeded; however, the distribution of the participants across ACT ($n = 176$) and FACT ($n = 49$) did not meet the needed number of participants.

CHAPTER 3

RESULTS

Data Screening and Preparation

Examining Data Entry Errors. Participants' responses were gathered via computer and were exported to Statistical Package for the Social Sciences – Version 20 (SPSS-20; IBM Corporation, 2011) data file without requiring manual data entry. Data gathered from the case managers were gathered via an online survey that allowed for the data to be exported into an Excel file that was then copied into the SPSS data file. Therefore, all data gathered from participants, both consumers and case managers, were considered to have no data entry errors. Additionally, the measures (e.g., PICTS-L-SF, BSI, SES, and RAS) were scored utilizing SPSS syntax that was verified as accurate by comparing the syntax scoring results to a selection of hand scored results from the study ($n = 10$, 4.5%); no scoring errors were found.

The only data that were manually entered was the information from 81 (36%) of the file review forms since the other file reviews were returned via an electronic file for 144 of the participants. Ten percent of the manually entered file review forms ($n=9$) were randomly selected and examined for data entry errors. Only one data entry error was found (.06%), and it was corrected in the data file.

Measure Validity. The PICT-L-SF was the only instrument utilized that provided response pattern scales that assess for validity. As indicated in the *Measures* section above, all clinical profiles that yielded a t-score of greater than 80 on either the Confusion

or Defensiveness ($n = 54$) scale were removed from further analyses utilizing PICTS-L-SF scales.

Given the larger percentage of participants that produced an invalid profile, further analyses were conducted to examine potential between group differences when compared to participants who yielded valid clinical profiles. Participants who produced invalid profiles on the PICTS-L-SF were statistically similar to those producing valid profiles with regards to site, gender, race, age, diagnosis, completed years of formal education, arrest history and history of psychiatric hospitalization; however, a greater percentage of invalid profiles were produced by participants receiving treatment from FACT programs ($\chi^2 = 4.20, p = .040$). Symptomatically, those who produces invalid profiles endorsed higher levels of depression ($F(208,1) = 5.46, p = .02$), hostility ($F(211,1) = 15.19, p < .001$), phobic anxiety ($F(211,1) = 4.08, p = 0.048$), psychoticism ($F(208,1) = 4.18, p = 0.042$), and overall symptom severity ($F(206,1) = 4.17, p = 0.043$) as measured by the BSI. Thus, it appears the invalidation of the PICTS-L-SF was systematic and primarily influenced by psychiatric symptomatology.

Assumptions for Analyses

Missing Data. Participant's responses were assessed for completion of the measures and missing (i.e., "refuse to answer") items. PICTS-L-SF profiles with greater than 2 missing items ($n = 6$) and BSI profiles with greater than 13 missing items ($n = 1$) were removed from further analyses involving these measures. All data from the participants were not deleted (i.e., listwise deletion) in an effort to best preserve sample size and power. Furthermore, it was decided that the utilization of mean response scores would

not be used to replace missing values as this was not encouraged by the scoring procedures for any of the measures, and doing so could decrease variance, increase inter-item correlation, and inappropriately strengthen the correlations in regression models (Tabachnick & Fidell, 2007). Rather, the raw and t-scores for the measure that participant had failed to respond to a sufficient number of items on were removed from the data file. Thus, the participant was only excluded from further analyses that included the specific measure that was removed (i.e., pairwise deletion). A frequency analysis revealed no discernible pattern in the missing items on the measures.

Of the 225 participants that completed the survey, the responses of 4 participants failed to be recorded and included in the dataset due to the use of improper procedures for saving the data to the computer (i.e., the computer was either accidentally unplugged by the participant [$n = 1$] or inadvertently selected to not save the data [$n = 3$] once the survey was complete). Therefore, a total sample size of 221 participants was retained. Due to the programming of the computer administered survey software, participants were not allowed to skip items. Rather, they were required to select “Refuse to Answer” on the demographic questions if they did not want to provide a response. Few participants refused to provide responses to the demographic items. All participants reported their gender, age, relationship status, employment status, and current living arrangement. However, 1 participant (0.45%) refused to report their years of formal education, 3 participants (1.36%) refused to provide their race, 1 participant (0.45%) refused to indicate if they were receiving disability benefits, 1 participant (0.45%) refused to

indicate if they had children, and 1 participant (0.45%) refused to report if they had ever been arrested.

Outliers. Standardized z scores were calculated for the variables to be utilized in subsequent analyses, and the results were examined for cases which yielded a z score greater than 3.29 ($p < .001$, two-tailed test) as those cases were considered outliers. Thirty-eight outliers were identified for self-reported demographic variables (i.e., employment tenure, number of children, number of lifetime psychiatric hospitalizations, and number of lifetime arrests), file review information (i.e., number of psychiatric hospitalizations and arrests in past 3 months, year and across their lifetime), and raw scale scores on the PICTS-L-SF (i.e., Mollification, Entitlement, Superoptimism, Self-Assertion, Historical, and Proactive). In order to maintain the largest sample size possible and not compromise power, outliers were changed to one unit greater or smaller than the most extreme score on the variable that fell within a z score of 3.29 and -3.29 (Tabachnik & Fidell, 2007). Additionally, in order to evaluate the data for multivariate outliers, the Mahalanobis distance values were calculated and analyzed. Utilizing a chi-square (χ^2) distribution at an alpha level of $p < .001$ (Tabachnik & Fidell, 2007), no multivariate outliers were identified in the data.

Normality. Histograms were utilized to assess the normality of the variables. The histograms were visually examined for conformity to the normal curve, and a majority of the variables appeared to generally resemble a normal distribution. The exception to this was a high number of BSI, PICTS-L-SF, RAS and SES subscales that appeared to deviate with a positive skew. Violations of normality for the variable to be included in the

multivariate analyses were of minimal concern give the robustness of these analyses against such violations (Tabachnick & Fidell, 2007); however, the skewness was evaluated further. Skewness statistics were examined for the measure subscales, and it revealed 4 PICTS-L-SF (i.e., Mollification, Entitlement, Proactive, and General Criminal Thinking), 1 BSI (i.e., GSI), and 2 SES (i.e., Availability, Treatment Adherence) to be moderately, positively skewed (i.e., between +0.5 and +1.0; Bulmer, 1979). Two RAS subscales (i.e., Goal and Success Orientation, Reliance on Others) were found to be moderately negatively skewed (i.e., between -0.5 and 1.0; Bulmer, 1979). The skewness statistics revealed more severely skewed variables as 2 PICTS-L-SF (i.e., Sentimentality, Superoptimism) were highly positively skewed (i.e., $> +1$; Bulmer, 1979). Lastly, the RAS Total score and Willingness to Ask for Help subscale were highly, negatively skewed (i.e., < -1 ; Bulmer, 1979).

Following recommendations from Tabachnick and Fidell (2007), log and square root transformations were attempted on the aforementioned, skewed scales, and their skewness was reassessed. The log transformation was found to yield the best improvement in the normality of the PICTS-L-SF scales as the moderately skewed scales fell below a score of 0.5 (i.e., the threshold for moderate skewedness; Bulmer, 1979), and the highly skewed scales became moderately skewed. Additionally, the log transformation corrected for the skewness of the SES scales as they also dropped below a score of 0.5. The square root transformation was found to yield the best improvement in the normality of the BSI scale as the skewed scale fell below a score of 0.5.

Unfortunately, the transformations were not able to improve the skewness of the RAS

scales, and they were included in subsequent analyses without being transformed despite their deviations from normality. Results were conservatively interpreted for the RAS in light of this violation.

The distributions of count data (i.e., number of psychiatric hospital admissions, number of lifetime arrests, number of probation/parole violations) resembled a Poisson distribution (i.e., were highly positively skewed; Tabachnick & Fidell, 2007). No transformations were needed to address the deviations from the normal curve as this is not an assumption of negative binomial regression as this distribution of scores is accounted for in the analysis, and this is the only type of analysis that will include these variables.

Linearity. Pairwise scatter plots were examined for each of the correlational analyses to be conducted to determine if the relationship among variables was linear. All relationships appeared relatively linear. Additionally, residual plots for each of the correlational analyses were visually analyzed, and no violations of the linearity assumption were evidenced (i.e., there was no apparent curvilinear distribution of the errors and they were equally present above and below 0). This was not the case with the count data (i.e., number of psychiatric hospitalizations, number of lifetime arrests, number of probation/parole violations in the past year) as the linearity assumption was violated for each of the variables. This was expected based on the nature of the data being positively skewed, but this violation is not a concern given that the count data was analyzed utilizing a negative binomial regression and this analysis accounts for this pattern of data dispersion.

Multicollinearity. Colinearity diagnostics (i.e., Tolerance and the Variance Inflation Factor [VIF]) were examined for each regression analysis. It was determined that the assumption of multicollinearity was not violated for any of the regression analyses as the VIF values were less than or equal to 10, and the Tolerance values were greater than or equal to .05 (Stevens, 2002; Tabachnick & Fidell, 2007) for each analysis performed.

Homogeneity of Covariance. The homogeneity of variances and covariances among the dependent variables included in the multivariate analyses were assessed in conjunction with the analyses by examining Box's M for significance and included in the discussion of the relevant analyses. Given the unequal sample sizes, the homogeneity of covariance matrices becomes of greater importance given that any violations would results in a highly liberal test if greater variability is in the smaller sample, but more conservative if the greater variability is in the larger sample (Tabachnick & Fidell, 2007). If violations do occur, and the greater variability is found in the smaller sample, Pillai's trace statistic should be reported in place of Wilk's Lambda as it is more conservative and robust to these types of violations. However, this substitution was not possible for the analyses where the homogeneity assumptions was violated as Wilk's Lambda and Pillai's trace will not differ for analyses when the fixed factor only includes two variables (Tabachnick & Fidell, 2007). For those analyses where Box's M was significant, there were no significant multivariate results and therefore there was no need to cautiously interpret significant results in light of the potential for a Type I Error.

Statistical Analyses

Research Question One. What is the prevalence of criminal thinking among people enrolled in ACT and FACT programs? No hypothesis was made for this research question because the aim was to establish the prevalence of criminal thinking in a community mental health sample as this has not been established in the literature.

Descriptive data were calculated for the overall sample, and for those participants in ACT or FACT programs. Additionally, during site recruitment, it became apparent that many consumers who may qualify for FACT programs (e.g., had criminal history and risk) were enrolled in ACT programs because of lack of availability to FACT programs. Therefore, it was determined that it would also be beneficial to determine prevalence rates for participants with and without a history of CJ Involvement. Average scores for the PICTS-L-SF scales (excluding the two validity scales) were below 60 (i.e., high range) for all groups (i.e., overall, ACT, FACT, CJ involved, non-CJ involved). The descriptive data for the overall, ACT and FACT samples are presented in Table 2, and the descriptive data for the CJ and Non-CJ involved samples are presented in Table 3.

Research Question Two. Does the prevalence of criminal thinking differ between people enrolled in ACT and FACT programs? It was hypothesized that the participants enrolled in FACT programs would evidence higher levels of criminal thinking as measured by the PICTS-L-SF than those enrolled in ACT programs.

Prior to conducting the between group analyses for criminal thinking, Analysis of Variance and Chi-square procedures were conducted to determine if there were demographic differences between those in the ACT and FACT sample that would need to

be included as covariates in the multivariate analyses. Age, gender, race, years of formal education, primary Axis I diagnosis, and the time they had been enrolled in their current community mental health treatment program were all assessed. There were significant between group differences found for age ($F(1,159) = 5.86, p = .017$), time in treatment ($F(1,145) = 13.26, p < .001$), race ($\chi^2(1, N = 146) = 6.87, p = .009$), and primary diagnosis ($\chi^2(1, N = 160) = 17.10, p = .017$). Thus, these variables were entered as covariates in the analyses below. See Table 4 for significant demographic differences between ACT and FACT Programs.

To examine this hypothesis, a one-way MANCOVA procedure was conducted for each of the PICTS-L-SF thought pattern subscales (i.e., mollification [log], sentimentality [log], superoptimism [log], cognitive indolence, cutoff, entitlement [log], and discontinuity), content (i.e., current and historical criminal thinking), and composite (i.e., proactive and reactive criminal thinking), with age, time in treatment, race and primary diagnosis controlled for as covariates, to examine group differences between the participants enrolled in ACT and FACT programs. Additionally, an ANCOVA procedure was conducted to examine group differences between participants enrolled in ACT and FACT programs on the GCT (log) scale on the PICTS-L-SF with age, time in treatment, race and primary diagnosis.

Due to PICTS-L-SF profiles being removed for issues with validity or missing items, the sample sizes included in these analyses varied as some participants may have produced a valid profile, but may not have answered the items necessary to yield each scale score. The homogeneity of covariance assumptions was met for all multivariate

analyses for research question two with the exception of the composite scales (Box's $M = 8.92$, $F(3,37736.45) = 2.89$, $p = .034$). The analyses indicated no significant multivariate between group differences for the thought pattern scales ($\Lambda = .934$, $F(8,122) = 1.08$, $p = .385$, $\eta_p^2 = .482$), the content scales ($\Lambda = .987$, $F(2,133) = .855$, $p = .428$, $\eta_p^2 = .194$), or the composite scales ($\Lambda = .993$, $F(2,130) = .458$, $p = .634$, $\eta_p^2 = .123$), and no significant between group differences for the GCT scale ($F(1, 132) = .535$, $p = .466$, $\eta_p^2 = .11$). None of the covariates were found to have multivariate significance in any of the aforementioned multivariate analyses either. For the MANCOVA analyses, given the lack of multivariate significance for program type, univariate results were only examined for the purpose of guiding future research and not to make inferences about the sample (Tabachnick & Fidell, 2007). No significant univariate results were found for any of the multivariate analyses.

As there were no significant between group differences on the mean scale scores, the number of scale elevations (T score greater than or equal to 60) produced by participants were examined for between group differences. Overall, participants produced an average of 3.06 scale elevations ($SD = 3.67$; range 0 to 16). Individuals in ACT programs produced an average of 3.16 scale elevations ($SD = 3.82$; range 0 to 16) and those in FACT programs produced an average of 2.60 scale elevations ($SD = 2.97$; range 0 to 10). The number of PICTS-L-SF scale elevations were highly positively skewed (i.e., $> +1$; Bulmer, 1979), and not normally distributed. Following recommendations from Tabachnick and Fidell (2007), log and square root transformations were attempted the skewness was reassessed. The log transformation was found to yield the best

improvement in the normality of the number of PICTS-L-SF scale elevations as the variable fell below a score of 0.5 (i.e., the threshold for moderate skewedness; Bulmer, 1979). Utilizing an ANCOVA procedure, the difference between the log of the number of scale elevations on the PICTS-L-SF for participants in ACT and FACT programs were assessed for significance while controlling for age, time in treatment, primary diagnosis, and race as covariates. Those enrolled in ACT and FACT programs did not elevate a significantly different number of scales on the PICTS-L-SF ($F(1,137) = .11, p = .742, \eta_p^2 = .062$). For a visual representation of the mean GCT scale score and the mean number of scale elevations on the PICTS-L-SF for ACT versus FACT see Figure 1 and Figure 2 (respectively).

The hypothesis was not supported as participants in ACT and FACT programs evidenced similar levels of criminal thinking and a similar number of scale elevations on the PICTS-L-SF.

Research Question Three. Will the prevalence of criminal thinking differ between people with and without CJ involvement? It was hypothesized that the participants with a history of CJ involvement will evidence higher levels of criminal thinking as measured by the PICTS-L-SF than those without a history of CJ involvement (i.e., history of arrests and jail incarcerations).

Prior to conducting the between group analyses for criminal thinking, Analysis of Variance and Chi-square procedures were conducted to determine if there were demographic differences between those with and without a history of arrests, and those with and without a history of jail incarcerations that would need to be included as

covariates in the multivariate analyses. Age, gender, race, years of formal education, primary Axis I diagnosis, and the time they had been enrolled in their current community mental health treatment program were all assessed. For those with and without a history of arrests, there were significant between group differences found for time in treatment ($F(1,143) = 4.20, p = .042$) and gender ($\chi^2(1, N = 158) = 4.77, p = .029$). For those with and without a history of jail incarcerations, there were significant between group differences found for time in treatment ($F(1,129) = 8.63, p = .004$) and race ($\chi^2(1, N = 142) = 25.90, p = .001$). Thus, these variables were entered as covariates in the multivariate analyses below. See Table 4 for significant demographic differences between participants with and without a history of arrests, and with and without a history of jail incarcerations.

To examine this hypothesis, a one-way MANCOVA procedure was conducted for each of the PICTS-L-SF thought pattern (i.e., mollification [log], sentimentality [log], superoptimism [log], cognitive indolence, cutoff, entitlement [log], and discontinuity), content (i.e., current and historical criminal thinking), and composite (i.e., proactive and reactive criminal thinking) subscales, with time in treatment and gender controlled for as covariates, to examine group differences between the participants with and without a history of arrests. Additionally, an ANCOVA procedure was conducted to examine group differences between participants with and without a history of arrests on the GCT scale (log) of the PICTS-L-SF. Another set of analyses, similar to those stated above, were conducted with the same PICTS-L-SF subscales entered as dependent variables, but with

history of jail incarcerations as the grouping variable for CJ involvement and time in treatment and race as covariates.

Again, due to PICTS-L-SF profiles being removed for issues with validity or missing items, the sample sizes included in these analyses varied as some participants may have produced a valid profile, but may not have answered the items necessary to yield each scale score. The homogeneity of covariance assumptions was met for all multivariate analyses in research question three (i.e., Box's M was not significant), except for the between group comparison of the thought pattern scales for those with and without a history of jail incarcerations (Box's M = 56.76, $F(28, 2783.47) = 1.69, p = .013$).

For the arrest history comparison, the MANCOVA analysis indicated no significant multivariate between group differences for the thought pattern scales ($\Lambda = .938, F(7, 125) = 1.182, p = .318, \eta_p^2 = .492$), content scales ($\Lambda = .964, F(2, 136) = 2.56, p = .081, \eta_p^2 = .505$), or composite scales ($\Lambda = .974, F(2, 133) = 1.81, p = .168, \eta_p^2 = .373$). The ANCOVA procedure revealed no significant between group differences for the GCT scale ($F(1, 135) = 1.71, p = .193, \eta_p^2 = .255$). For the MANCOVA analyses, given the lack of multivariate significance for program type, univariate results were only examined for the purpose of guiding future research and not to make inferences about the sample (Tabachnick & Fidell, 2007). Significant univariate results were found for the PICTS-L-SF subscale of Superoptimism ($F(1, 132) = 4.31, p = .040$) such that participants with a history of arrest displayed higher scores on the Superoptimism scale than those without a history of arrests. For a visual representation of the mean GCT scale score and the mean

number of scale elevations on the PICTS-L-SF Arrests versus no Arrests see Figure 1 and Figure 2 (respectively).

For the history of jail incarceration comparison, the MANCOVA analysis indicated no significant multivariate between group differences for the thought pattern scales ($\Lambda = .906$, $F(7,112) = 1.662$, $p = .126$, $\eta_p^2 = .661$), content scales ($\Lambda = .985$, $F(2,122) = .938$, $p = .394$, $\eta_p^2 = .209$), or for the composite scales ($\Lambda = .983$, $F(2,119) = 1.028$, $p = .361$, $\eta_p^2 = .226$). Additionally, ANCOVA procedures revealed there was no significant between group differences for the GCT scale ($F(1,121) = 2.29$, $p = .133$, $\eta_p^2 = .324$). For the MANCOVA analyses, given the lack of multivariate significance for program type, univariate results were again only examined for the purpose of guiding future research and not to make inferences about the sample (Tabachnick & Fidell, 2007). Significant univariate results were found for the PICTS-L-SF scale of Mollification ($F(1,118) = 4.05$, $p = .046$) and Cutoff ($F(1,118) = 3.98$, $p = .048$) such that those with a history of jail incarcerations displayed higher scores on the Mollification and Cutoff scales than those without a history of jail incarcerations.

The number scale elevations (T score greater than or equal to 60) produced by participants were examined for between group differences based on arrest history and jail incarceration history. Individuals with a history of arrests produced an average of 3.22 scale elevations ($SD = 3.81$; range 0 to 16) and those without a history of arrests produced an average of 1.71 scale elevations ($SD = 1.49$; range 0 to 5). Utilizing an ANCOVA procedure, the difference between the log of the number of scale elevations for participants with and without an arrest history was assessed for significance while

controlling for gender and time in treatment. There was no significant difference in the number of scale elevations between those with and without a history of arrests ($F(1,140) = .1.32, p = .252, \eta_p^2 = .208$).

Individuals with a history of jail incarcerations produced an average of 3.42 scale elevations ($SD = 3.92$; range 0 to 16) and those without a history of jail incarcerations produced an average of 2.33 scale elevations ($SD = 3.14$; range 0 to 13). Utilizing an ANCOVA procedure, the difference between the log of the number of scale elevations for those with and without a history of jail incarcerations was assessed for significance. There was no significant difference in the number of scale elevations between those with and without a history of jail incarcerations ($F(1,126) = .290, p = .591, \eta_p^2 = .083$). For a visual representation of the mean GCT scale score and the mean number of scale elevations on the PICTS-L-SF for Jail Incarcerations versus no Jail Incarcerations see Figure 1 and Figure 2 (respectively).

The hypothesis was not supported as participants with and without a history of CJ involvement (i.e., history of arrests, history of jail incarcerations) evidenced similar levels of criminal thinking, and no significant differences were found in the number of scale elevations on the PICTS-L-SF.

Research Question Four. What is the relationship between criminal thinking and CJ and psychiatric outcomes? Specifically, are criminal thinking and treatment engagement; criminal thinking and recovery; criminal thinking and psychiatric recidivism; and criminal thinking and criminal activity related? It was hypothesized that criminal thinking scores obtained from the PICTS-L-SF would be positively correlated with the Service

Engagement Scale subscales as higher scores indicate greater difficulty engaging with services, positively correlated the Recovery Assessment Scale subscales, positively correlated with the GSI and PST scales of the BSI, positively correlated with the number of reported lifetime psychiatric hospitalization, and positively correlated with the number of lifetime arrests.

A linear regression analysis was conducted to evaluate the relationship between the continuous variables noted above. In each of the analyses, the GCT scale (log transformed) from the PICTS-L-SF served as the dependent variable. Time in treatment was evaluated for the potential need to be included in step one of the analysis to control for variance accounted for by treatment duration; however, it was determined that the inclusion of time in treatment was unnecessary as it accounted for a minimal amount of variance in GCT ($R^2 = .006$, $F(1,139) = .851$, $p = .358$).

For the first regression analysis, the SES scale scores (i.e., availability [log], treatment adherence [log], collaboration, help seeking) were simultaneously entered as the predictor variables with GCT serving as the dependent variable. Due to missing SES data from 61.9% of the case managers (i.e., case managers failed to respond to the survey) and PICTS-L-SF profiles removed due to validity issues, 52 participants were included in the analysis. The SES scale scores accounted for approximately 6.8% of the variance in GCT ($F(4, 51) = .851$, $p = 0.50$, $SE = .737$), and none of the SES scales were found to be significantly associated with GCT when holding the other scales constant. To ensure that the criminal thinking of participant was statistically similar for those whose case managers did and did not complete the survey, an independent samples t-test was

conducted with completion of the SES as the grouping variable. There was no significant difference in the mean GCT (log) between the groups ($t = .58, p = .566$).

In the next regression analysis, the square root of the GSI from the BSI was entered as the predictor variable with GCT (log) serving as the dependent variable. Due to missing data on the BSI and the PICTS-L-SF profiles that were removed for validity issues, 153 participants were included in this analysis. The GSI accounted for 30.8% of the variance in GCT ($F(1, 152) = 67.27, p < .001, SE = .10$), and was significantly positively correlated with GCT such that as the participants' general symptom distress increased so did their overall level of criminal thinking.

To evaluate the relationship between the number of symptoms experienced (without evaluating symptoms severity) and GCT, the PST scale from the BSI was entered as the predictor variable in a linear regression analysis. Results indicated a significant positive relationship ($r = .56, F(1,154) = 70.46, p < .001, SE = .10$) between PST and GCT such that as the number of symptoms experienced increased, so did their overall level of criminal thinking. Average scores across the BSI are presented in Table 5 along with the means for the SES and RAS.

The next linear regression simultaneously included the RAS subscales as the predictor variables with GCT as the dependent variable. A total of 203 participants were included in this analysis due to missing data and profiles removed for validity issues. The aggregate of the scales accounted for a significant 21% of the variance in GCT ($F(5,202) = 10.47, p < .001, SE = .40$) and the two variables were significantly positively correlated. Only the Personal Confidence and Hope scale of the RAS was significantly

associated with GCT ($b = -.039, p < .001, SE = .007$) when holding the other RAS scales constant, such that for every one point increase in GCT, Personal Confidence and Hope decreases .039 points. See Table 6 for an aggregate of the results from all of the aforementioned regression analyses.

To determine the most appropriate fitting regression model for the count data (i.e., number of lifetime arrests, number of lifetime psychiatric hospitalizations), a series of Poisson and Negative Binomial Regression analyses were conducted. Both regression models are appropriate correlational analyses for count data that are highly positively skewed (i.e., a Poisson distribution) as our dependent variables are. Determination of the best regression method to use to model the relationship between a continuous and count variable depends on the dispersion of the data. Poisson regression models assume equidispersion, such that the conditional means and conditional standard deviations are equal (Walters, 2007). If the data are overdispersed such that the conditional variance exceeds the conditional standard deviation, the negative binomial regression provides a better fitting model for the data. Another potential problem with conducting correlational analyses on count data is the “type” of zeros contained in the dataset and the potential presence of excess zeros that are not accounted for by the model. There are two types of zeros; “true zeros” (i.e., the data represents actual qualitative differences in participants) and “excess zeros” (i.e., represents a quantitative difference in participant states; Washington, 2013). Since the zeros in the data set represent individuals who have never been arrested or have never been admitted to a psychiatric facility across their lifetime, we can assume the zeros represent a qualitative difference between participants with and

without such histories and given the large time/space (i.e., lifetime) zeros likely do not represent dual states (Lord, Washington, & Ivan, 2004). The model is therefore able to account for the zeros and no tests (i.e., Vuong Statistic) are needed to test for the presence of excess zeros.

Prior to conducting the regression analyses, the data for the number of lifetime arrests and the number of lifetime psychiatric hospitalizations were examined to determine if there was overdispersion by examining the mean and standard deviations of the two variables. The mean number of lifetime arrests was 10.63 with a standard deviation of 12.75, and the mean number of lifetime psychiatric hospitalizations was 6.44 with a standard deviation of 9.13. For both variables, the standard deviation exceeded the mean suggesting that the variables are overdispersed and more appropriate for a negative binomial regression. Overdispersion was evaluated further to ensure the best fitting model is used by comparing the log-likelihood ratio for the Poisson and negative binomial regression as the analysis with the smaller log-likelihood ratio provides the best fitting model. Utilizing GCT as the predictor variable and the number of lifetime arrests as the dependent variable, the log-likelihood ratio for the Poisson regression was -997.49 and -478.45 for the negative binomial regression suggesting the negative binomial regression provides the best fit for the data. Utilizing GCT as the predictor variable and the number of lifetime psychiatric hospitalizations as the dependent variable, the log-likelihood ratio for the Poisson regression was -860.08 and -425.34 for the negative binomial regression suggesting the negative binomial regression provides the best fit for the data. Furthermore, the likelihood ratio test of overdispersion was significant for the

lifetime number of arrests ($\chi^2(1) = 238.34, p < .0001$) and lifetime number of psychiatric hospitalizations ($\chi^2(1) = 43.46, p < .0001$) suggesting the variables are overdispersed and a negative binomial regression is preferred over a Poisson regression.

Participants were excluded from analyses if they did not produce a valid PICTS-L-SF profile or if they failed to report the number of lifetime arrests (first analysis) or psychiatric hospitalizations (second analysis). Therefore, a total of 143 participants were included in the negative binomial regression for the number of lifetime arrests and 146 participants were included in the negative binomial regression for the number of lifetime psychiatric hospitalizations.

The first analysis conducted was a negative binomial regression with GCT as the predictor variable and the number of lifetime arrests as the dependent variable. The likelihood ratio for the negative binomial regression model was statistically significant ($N = 143; \chi^2(1) = 18.14, p < .0001$). It appears that GCT was a significant predictor of the number of lifetime arrests given the Wald Criterion ($\chi^2(1, N = 143) = 16.87, p < .0001$). According to the unstandardized regression coefficient (B), the expected log count for the number of lifetime arrests increases by .011 for each one point increase in GCT (see Table 7 for model statistics). The second analysis conducted was a negative binomial regression with GCT as the predictor variable and the number of lifetime psychiatric hospitalizations as the dependent variable. The likelihood ratio for the negative binomial regression model was statistically significant ($N = 146; \chi^2(1) = 6.70, p = .010$). It appears that GCT was a significant predictor of the number of lifetime psychiatric hospitalizations given the Wald Criterion ($\chi^2(1, N = 146) = 6.87, p = .009$). According to

the unstandardized regression coefficient (B), the expected log count for the number of lifetime psychiatric hospitalizations decreases by .008 for each one point increase in GCT (see Table 7 for model statistics).

Given these results, the hypothesis that GCT and number of lifetime arrests would be positively correlated was supported; however, contrary to what was predicted, a negative relationship between GCT and the number of lifetime psychiatric hospitalizations was yielded.

Post hoc, it was determined that examining the relationship between the total number of PICTS-L-SF scale elevations, and the lifetime number of arrests and psychiatric hospitalizations would also be relevant to addressing Research Question Four. Again, a series of Poisson and Negative Binomial Regression analyses were conducted to determine the most appropriate fitting regression model for the count data. Utilizing the number of PICTS-L-SF scale elevations as the predictor variable and the number of lifetime arrests as the dependent variable, the log-likelihood ratio for the Poisson regression was -433.43 and -321.85 for the negative binomial regression suggesting the negative binomial regression provides the best fit for the data. Utilizing the number of PICTS-L-SF scale elevations as the predictor variable and the number of lifetime psychiatric hospitalizations as the dependent variable, the log-likelihood ratio for the Poisson regression was -459.33 and -330.15 for the negative binomial regression suggesting the negative binomial regression provides the best fit for the data.

Participants were excluded from analyses if they did not produce a valid PICTS-L-SF profile or if they failed to report the number of lifetime arrests (first analysis) or

psychiatric hospitalizations (second analysis). Therefore, a total of 143 participants were included in the negative binomial regression for the number of lifetime arrests and 146 participants were included in the negative binomial regression for the number of lifetime psychiatric hospitalizations.

The first analysis conducted was a negative binomial regression with the number of PICTS-L-SF scale elevations as the predictor variable and the number of lifetime arrests as the dependent variable. The likelihood ratio for the negative binomial regression model was statistically significant ($N = 143$; $\chi^2(1) = 10.90, p < .0001$). It appears that the number of PICTS-L-SF scale elevations was a significant predictor of the number of lifetime arrests given the Wald Criterion ($\chi^2(1, N = 143) = 9.29, p = .002$). According to the unstandardized regression coefficient (B), the expected log count for the number of lifetime arrests increases by .024 for each “one-scale” increase in the number of PICTS-L-SF scale elevations (see Table 8 for model statistics). The second analysis conducted was a negative binomial regression with the number of PICTS-L-SF scale elevations as the predictor variable and the number of lifetime psychiatric hospitalizations as the dependent variable. The likelihood ratio for the negative binomial regression model was statistically significant ($N = 146$; $\chi^2(1) = 2.77, p = .096$); however, the total number of PICTS-L-SF scale elevations was not a significant predictor of the number of lifetime arrests given the Wald Criterion ($\chi^2(1, N = 146) = 2.88, p = .090$) (see Table 8 for model statistics).

Given these results, it appears that the number of PICTS-L-SF scale elevations is a significant predictor of the lifetime number of arrests as increased scale elevations were

associated with an increased number of lifetime arrests. The results also indicate that the number of scale elevations on the PICTS-L-SF does not predict the number of lifetime psychiatric hospitalizations.

CHAPTER 4

DISCUSSION

Summary of Results

The aim of this study was to establish the prevalence of criminal thinking, assess for differences between consumers based on mental health program type and CJ involvement, and to examine the relationship between criminal thinking and CJ and mental health outcomes in a community mental health sample. Specifically, the study focused on CJ behavior such as arrests and incarcerations, and mental health outcomes such as self-perceived recovery (e.g. symptoms management, mental illness awareness), symptom severity, and treatment engagement. This study is a continuation in a program of research investigating the relationship and influence of criminal thinking on variables that could influence psychiatric and CJ outcomes.

Regression analyses partially supported the hypotheses made for the relationships between criminal thinking and recovery outcomes. As hypothesized, there were significant positive relationships between GCT and the overall level of distress experienced as a result of mental health symptoms (GSI) and the total number of mental health symptoms experienced regardless of severity (PST). This provides support to the assertion that criminal thinking and mental health symptomatology should be conceptualized as comorbid disorders (Draine et al., 2002; Hodgins, Müller-Isberner, Freese, Tiihonen, Repo-Tiihonen, Eronen, et al., 2007; Morgan et al., 2010; Morgan et al., 2012) and treated concurrently. Treatment needs, both mental health and criminogenic, become increasingly important with elevated levels of criminal thinking or

increased psychiatric symptomatology. Given that the two variables are related, treatment approaches may also be enhanced given the findings that as mental health symptoms decrease, levels of criminal thinking also decrease, and vice versa. Therefore, greater treatment gains and larger treatment effects would likely be seen for treatment programs which address both needs concurrently.

GCT (one of the Central Eight criminal risk factors; see Andrews & Bonta, 2010) was positively correlated with participant's lifetime number of arrests. As expected, those with higher levels of criminal thinking are at greater risk for frequent contact and involvement in the CJ system. This is problematic as arrest can interfere with recovery and mental health functioning by disrupting the continuity of care (Adair, McDougall, Mitton, Joyce, Wild, Gordon et al., 2005; Brekke, Ansel, Long, Slade & Weinstein, 1999; Greenberg & Rosenheck, 2005). Furthermore, frequent contact provides greater opportunities to commit additional criminal acts, (e.g., assault on a public servant), and may increase the likelihood of incarceration which can subsequently increase the risk for mental health decompensation (Bauer, 2012) and victimization (Blitz, Wolff, & Shi, 2008).

It was hypothesized that a similar increase in psychiatric recidivism would occur as criminal thinking increased. A significant relationship was found between GCT and the lifetime number of psychiatric hospitalizations; however, the direction of the relationship was unexpected. Increases in GCT resulted in decreases in the number of lifetime psychiatric hospitalizations. Thus, criminal thinking impacts the number of lifetime arrests and psychiatric hospitalizations. This finding is important because and criminal

thinking increases, arrests increase but psychiatric hospitalizations decrease. This suggests that criminal thinking may result in behaviors that are more likely to result in illegal behavior (e.g., violating the rights of others) versus behavior that would indicate mental health decompensation (e.g., suicidality, poor self-care) and warrant hospitalization. It is also possible that with elevated levels of criminal thinking, first responders are most commonly law enforcement officers and not mental health professional. Initial decisions made by CJ officials may be influenced more by the criminal behavior as behavioral issues that are influenced by both mental illness and criminal thinking may appear predominantly antisocial with the mental illness component being masked. For example, it is possible that PMI with increased criminal thinking are more verbally abusive or threatening toward law enforcement officers resulting in the decision by CJ officials for PMI to be processed through the CJ system versus being deferred to mental health services (e.g., hospitalization in lieu of arrest).

Contrary to the hypothesis that criminal thinking would be negatively related to recovery, results indicated a significant positive relationship between GCT and recovery (RAS). This constellation of results is interesting given that consumers with higher levels of GCT reported increased symptomatology and symptom severity while simultaneously reporting greater degrees of recovery. A possible explanation for this finding is that individuals higher in criminal thinking may either be consciously portraying themselves as more in control of their recovery than they are, or consumers with higher levels of criminal thinking may have less insight into their mental illness. Regardless, this finding has important implications for treatment. Treatment providers should be aware that

consumers' perception of their recovery may not be realistic or accurate, and should be compared to other measures of recovery (e.g., medication compliance, symptom frequency and severity, provider perceptions) to corroborate or contradict their self-report. Ensuring that consumers' perception of their recovery is accurate allows treatment providers to increase the likelihood that appropriate interventions are delivered. For example, consumers who present themselves as being more stable in their recovery, could be titrated off of needed services resulting in mental health decompensation.

Lastly, it was hypothesized that clinicians would perceive client's higher in criminal thinking to be less engaged in services; however, there were no significant relationships found between GCT and service engagement. The findings did not support this hypothesis as there was no significant difference in GCT between consumers whose case managers did and did not complete the SES. However, there could be case manager related variables (i.e., time spent with consumers, assistance in addressing mental health and criminogenic needs) that would differentiate those who did and did not complete the survey and would impact consumer engagement. Additionally, due to the small number of case managers who completed the SES for their clients and the cases that were removed for validity issues, this analysis lacked sufficient power to detect a relationship.

It was hypothesized that those with a history of CJ involvement would evidence higher levels of criminal thinking than those without a history of CJ involvement, and this was partially supported by the results. For participants with a history of at least one arrest, no significant differences were found for any of the criminal thought patterns compared to those without a history of arrests; however, those with a history of arrests,

on average, elevated a significantly greater number of scales on the PICTS-L-SF when compared to those without a history of arrests. Therefore, it appears that the number of scale elevations, indicating multiple styles or thought patterns that support a criminal lifestyle, is greater for those with a history of arrests. Partitioning the group based on a history of jail incarcerations yielded slightly different results. No significant differences were found for the scores on any of the PICTS-L-SF scales, and there was no significant difference in the number of scales elevated on the PICTS-L-SF between those with and without a history of jail incarcerations. The different findings may be explained by the fact that PMI who are arrested do not necessarily spend time incarcerated in jail and may be diverted to other criminal justice (e.g., specialty courts) or public health programs as noted above.

Criminal thought patterns were evidenced in this community mental health sample suggesting that even more emphasis needs to be placed on diversion programs for PMI who are generally able to function in the community but become CJ involved. Although the average scores across the criminal thinking scales on the PICTS-L-SF did not exceed the threshold to be determined “high,” a majority of the participants who produced a valid PICTS-L-SF profile elevated at least one criminal thinking scale ($n = 111$, 69.4%). Contrary to the hypothesis that individuals in FACT programs would evidence higher levels of criminal thinking than those in ACT, no significant differences were found with regards to any of the criminal thinking scales on the PICTS-L-SF. Furthermore, there were no significant differences in the average number of scale elevations between ACT and FACT consumers.

It is possible that the lack of significant findings for the differences in criminal thinking between the consumers in ACT and FACT programs is because no differences exist between the two populations. However, another possible explanation for this finding has to do with the general lack of availability of FACT programs in most community settings. Individuals with high levels of criminal risk (e.g., a significant history of CJ involvement) are assigned to ACT teams in communities where no FACT programs are available, and in most cases their mental health treatment needs are addressed without concurrent treatment to address their criminogenic needs. This is relevant in that mental health treatment that makes positive psychiatric gains fails to improve CJ outcomes (Calsyn et al., 2005; Morrissey et al., 2007). It appears that ACT and FACT programs are composed of similar consumers with regards to mental health functioning and criminal risk.

Implications for Practice

This study was the first to directly examine the relationship between mental health symptoms and criminal thinking in a community sample of PMI. The positive relationship that was found between criminal thinking and the severity and number of mental health symptoms is an important finding in that it informs clinicians regarding the treatment needs of this population. These findings suggest that consumers should be screened for criminogenic treatment needs (e.g., criminal thinking) regardless of CJ involvement, as consumers with greater symptomatology simultaneously evidenced higher levels of criminal thinking. Consequently, individuals that evidence comorbid mental health and criminogenic treatment needs would necessitate treatment that

integrates criminal risk factors as treatment foci in addition to the mental health programs currently in place (Epperson, Wolff, Morgan, Fisher, Frueh, and Huening, 2011).

“Integrated treatment programs could yield a potential reduction in recidivism (psychiatric and criminal), via improved treatment modalities thus improving the lives and functioning of PMI regardless of placement thereby increasing community safety (reduced crime) and reducing public health concerns (reduced overuse of medical and psychiatric services)” (Gross & Morgan, 2013, p. 27). Furthermore, previous research has advocated for a more integrated approach such that treatment focused on both the criminogenic (e.g., substance abuse, emotions management, criminal attitudes, criminal associates) and psychiatric (e.g., medication compliance, mental illness awareness, social-skills, problem solving) needs of PMI at risk for CJ involvement will likely prove most efficacious (Moran & Hodgins, 2004; Morgan et al., 2010).

This integrated treatment is further necessitated given that the type of programs included in this study (i.e., ACT and FACT), although empirically supported to improve mental health functioning, minimally affect CJ outcomes (Calsyn et al., 2005; Morrissey, Meyer, & Cuddeback, 2007). Thus, there appears to be an unmet needs as incarcerated PMI are impacted across both CJ and mental health systems and have been found to have psychiatric hospitalization rates that were three times higher than PMI who were not CJ involved (Fisher, Packer, Banks, Smith, Simon, & Roy-Bujnowski, 2002). Therefore, it is reasonable to suggest that mental health treatment gains could be further improved by implementing treatment that addresses criminal risk.

Results of this study further support results from Gross and Morgan (2013) in that criminal thinking is present within community mental health populations, and potentially to a greater degree in those with a history of CJ involvement. Furthermore, few participants reported a history free of contact with the CJ system indicating a high level of risk for this population. This supports findings that the involvement of PMI in the CJ system is due to criminal risk factors and not merely mental health symptomatology or a lack of mental health treatment (Skeem et al., 2011; Draine et al., 2002; Morgan et al., 2010). Regardless of program type, ACT or FACT, it appears that all programs should be integrating treatment that addresses criminogenic risk. Additionally, to enhance continuity of care in the transition from incarceration to community integration, integrated treatment approaches should be present in correctional treatment programs as well. The increased number of lifetime arrests associated with the increased levels of criminal thinking in this population indicates that a majority will have multiple contacts with the CJ system. This contact may provide some PMIs opportunities for mental health treatment given that PMI are more likely to be incarcerated than admitted to a psychiatric facility (Abramsky & Fellner, 2003; Torrey, Kennard, Eslinger, Lamb, & Pavle, 2010).

Implications for Policy

PMI become CJ involved because of criminal risk factors and not merely untreated mental health symptomatology (Skeem et al., 2011), and given the results of this study, those with the highest criminal risk in terms of criminal thinking may also evidence the greatest degree of psychological distress (i.e., symptom severity, number of symptoms experienced). Therefore, having diversion opportunities (e.g., mental health court,

inpatient treatment) or correctional staff and treatment programs that are equipped to provide treatment that address mental health and criminogenic needs is imperative to improved outcomes for PMI and the community (e.g., safety, cost effectiveness).

Although it seems preferable to have community resources to address the treatment needs of all PMI, the current reality is that correctional facilities need to be prepared to treat these individuals as PMI are more likely to be incarcerated than admitted to a psychiatric facility (Abramsky & Fellner, 2003).

Over half of the correctional monitoring boards in England surveyed in a study by Edgar and Rickford (2009) found prisoners “who were too ill to be in prison” incarcerated in their facilities. Once diversion opportunities are created within the community, joint partnerships between the CJ and community mental health system should be fostered. Creating positive working relationships and developing an integrated mental health and CJ database accessible by both systems could facilitate in identification of PMI who become involved in the CJ system that may benefit from community based diversion programs. Additionally, this partnership could increase the continuity of care when PMI are initially incarcerated and when they are released back into the community.

Enhanced services and improved CJ responses for PMI would require program funding to hire additional staff, train preexisting staff, and develop new treatment programs in an already strained local, state, and federal budget. However, it may prove fruitful to advocate for funding based on evidence that programming actually saves money. For example, it has been shown that appropriate treatment programs that address the needs of persons involved in the CJ system result in treatment gains that decrease

financial (e.g., cost of incarceration) and societal (e.g., community safety) costs (Romani, Morgan, Gross, and McDonald, 2012).

Limitations

Despite the important findings of this research, like all studies, it is not without limitations. An analytical procedure (i.e., cell weighting based on unequal sample sizes) was utilized to allow for the multivariate analyses to be conducted with unequal sample sizes across groups. Although the procedure is appropriate for use in analyses where the unequal sample sizes is representative of the samples in the overall population, analyses with relatively equal sample sizes are preferred as they retain greater power (Tabachnick & Fidell, 2007). Therefore, power to detect potential differences in this study may have been compromised as one of the groups (i.e., no CJ involvement, FACT participant) during each comparison was relatively small (i.e., less than 50 in some cases).

Furthermore, there were a large number of participants that were excluded from the sample due to invalidating the PICTS-L-SF. This reduced the sample size and consequently the power as well. After completing a between groups analysis, it appeared that individuals with higher levels of symptomatology were excluded from analyses involving the PICTS-L-SF scales. Therefore, the sample may not be representative and generalizable to the overall population of consumers enrolled in community mental health programs. We also had to cautiously interpret the results of the PICTS-L-SF within this population given the limited psychometric data for community mental health populations, and the in progress revisions to the factor structure and scoring of the measure (G. D. Walters, personal communication, March 2013). Generalizability may

also be limited in that the participation rate of programs was quite low (6.2%). The programs included in the study may not be representative of programs and the consumers within the programs across the United States. It could be argued that programmatic variables such as funding, staff support, or treatment interventions could differ and account for consumer differences and recovery (both CJ and mental health).

Lastly, although psychiatric diagnoses were evaluated as potential covariates, the presence and intensity of various mental health symptoms at the time of participation was not assessed. Given that the symptom subscales of the BSI could not be utilized to examine the potential confounding effects of psychiatric symptomatology on the results, it is possible that numerous symptoms (e.g., neuroticism, depression, anxiety) affected scores on the PICTS-L-SF. Therefore, it is unclear if participants differentially responded to the items on the PICTS-L-SF as a result of their mental health symptomatology. The concern that the scale scores on the PICTS-L-SF may not accurately reflect the thought patterns of our sample is also relevant in that the PICTS-L-SF has not been normed on a community mental health sample. The PICTS-L-SF has two validity scales to assess for confusion and defensive response styles; however, idiosyncratic responding related to mental health symptomatology would not be captured by these scales.

Future Research Directions

The results of this study suggest that as PMI's mental health symptoms worsen, criminal thinking increases, and vice versa. Increasing our understanding of this relationship is important and warrants further investigation to determine if one precedes the other or if the relationship is bidirectional. That is, do mental health symptoms get

worse prior to criminal thinking increasing, or do increases in criminal thinking exacerbate mental health functioning? Understanding this relationship has important implications for monitoring PMI and treatment delivery.

Although criminal thinking was not related to the number of lifetime psychiatric hospitalizations, it was related to mental health symptomatology. Therefore other measures of mental health decompensation (e.g., suicidal ideation, crisis calls made) should be measured. A longitudinal study tracking the fluctuations of mental health symptoms and criminal thinking across time could allow us to measure decompensation across time devoid of hospitalizations, and would provide greater insight into the relationship between criminal thinking and mental health symptoms. This is relevant as it is possible that criminal thinking contributing to criminal behavior may precede mental health decompensation warranting hospitalization as criminal thinking was related to increased mental health symptomatology, but was associated with increased arrests and decreased hospitalization. Therefore, increased criminal thinking may result in illegal behavior leading to CJ involvement that prevents opportunities for hospitalization.

As previously stated, Andrews and Bonta (2010) identified eight primary factors that impact criminal risk, and this study focused on one of the eight identified risk factors (i.e., criminal thinking). Future research should expand on this study to investigate other risk factors with PMI, and to evaluate the potential for cumulative or interaction effects between the risk factors including mental health symptoms. Results could provide a clearer picture regarding the differential impact of these factors on CJ involvement to allow for prioritization of treatment resources, and customization of individualized

treatment programs. Given that the Central Eight criminal risk factors (Andrews and Bonta, 2010) are dynamic (i.e., can be changed through therapeutic intervention) their presence and severity should also be assessed across settings (e.g., community, long term inpatient, prison) and across time. Certain criminal risk factors (e.g., criminal associates) or mental health factors (e.g., increased symptomatology) may signal the potential onset of an increase in other risk factors allowing clinicians to identify early warning signs and proactively intervene to reduce criminal risk.

Use of alternative assessment measures may also prove beneficial in future studies as a large percentage of participants invalidated the criminal thinking measure, and there were significant diagnostic differences between those who did and did not invalidate the PICTS-L-SF. Therefore, the PICTS-L-SF may not be appropriate for use with this population if some individuals have difficulty attending to or responding accurately and consistently to the item content. Unfortunately, there are no measures of criminal thinking that are normed with a community mental health sample. Future research should develop norms or a new criminal thinking measure appropriate for use with a community mental health sample given that criminal thinking is present in this population. The BSI was included in the current study as a general measure of mental health functioning, and was primarily selected for its brevity. However, the priority to limit the time required to complete the survey sacrificed the ability to assess specific clusters of mental health symptoms. Use of a measure with a more psychometrically sound underlying scale structure (e.g., Minnesota Multiphasic Personality Inventory – 2 Restructured Form,

Symptom Checklist – 90 – Revised) would be important to partial out specific domains of symptoms or symptom types.

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APPENDICES

APPENDIX A

EXTENDED LITERATURE REVIEW

Persons with Mental Illness (PMI) and Criminal Justice (CJ) Involvement

PMI are three times more likely to be incarcerated than admitted to a psychiatric facility (Abramsky & Fellner, 2003; Torrey, Kennard, Eslinger, Lamb, & Pavle, 2010). In fact, correctional institutions have become the largest providers of mental health treatment in the United States (Abramsky & Fellner, 2003) as inmates often require inpatient mental health treatment during the course of their incarceration (Lamb, Weinberger, Marsh, & Gross, 2007).

The James and Glaze (2006) completed a comprehensive survey of state and federal prisons, and jails in 2004 to better understand the prevalence of mental illness among the correctional population. The sample included 14,499 state prisoners representing 287 of the 1,585 state correctional facilities across the United States, 3,686 federal prisoners representing 39 of the 148 federal correctional facilities across the United States, and 6,982 jail inmates representing 417 of the 3,365 jails across the United States. Symptoms of mental illness (e.g., depression, mania, psychosis) were assessed in this population, and it was found that 60.5% of jail inmates, 49.2% of state prison inmates, and 39.8% of federal inmates endorsed such symptoms. Furthermore, the receipt of mental health treatment (e.g., therapy, psychiatric hospitalization, psychiatric medication) in the year preceding arrest or incarceration was common.

In a more recent study, Steadman and colleagues (2009) administered the Structured Clinical Interview for DSM-IV (SCID) to 822 male and female inmates housed at five jail facilities located in Maryland and New York. The inmates were assessed for the current (within the last month) presence of serious mental illness (i.e., schizophrenia

spectrum disorder; schizoaffective disorder; schizophreniform disorder; brief psychotic disorder; delusional disorder; psychotic disorder not otherwise specified (NOS); bipolar disorder I, II and NOS; major depressive disorder; and depressive disorder NOS). It was found that 14.5% of male and 31% of female offenders in jails met diagnostic criteria for a serious mental illness. These findings clearly indicate an over-representation of PMI in correctional institutions as fewer than 6% of the general population is estimated to suffer from a severe mental illness (Kessler, Chiu, Demler, & Walters, 2005), and severe mental illness has been shown to occur in incarcerated samples at a rate four time greater than the general population (Hodgins, 1995). Thus, PMI are disproportionally represented in the CJ system.

It is estimated that 25-50% of PMI have had some level of interaction with the CJ system (Silberberg, Vital, & Brakel, 2001), and although there is a large number of PMI housed in correctional facilities, the majority of PMI who are CJ involved appear to be treated in the community rather than in prison or jail. According to the Bureau of Justice Statistics, in 2010, there were 4.8 million individuals (approximately 70% of the CJ population) that were on probation or parole (Glaze, 2011). Accordingly, some have argued that, for PMI, becoming CJ involved is advantageous as it makes those PMI a priority for receiving the already limited resources available through community treatment centers (Seltzer, 2005).

In addition to the high prevalence of mental health issues, the psychiatric complexity of this population is often complicated as PMI with CJ involvement frequently present with co-occurring disorders, including severe mental disorders (e.g.

psychotic or mood disorders), substance abuse, and antisocial personality disorder (Abram & Teplin, 1991). Substance abuse is the most frequent co-occurring disorder with 70% of incarcerated PMIs found to have substance abuse problems (James & Glaze 2006). A history of mental health and CJ involvement have been found to be predictive in short-term outcomes for incarcerated PMI once released into the community.

A majority of offenders with a history of mental health and CJ involvement recidivate within three months after being released from a correctional facility (Hartwell, 2003). Interestingly, it appears that the severity of offending behavior appears to influence the type of recidivism, criminal or psychiatric, once PMI are released from prison. Hartwell (2003) gathered historical information (e.g., age, race, mental health diagnoses, criminal charges, release facility, housing) on 247 PMI released from correctional facilities in Massachusetts and enrolled in a community reintegration program. Information was gathered from the study participants at three times (minimum of 3 months prior to release, release, and 3 months post release). A history of utilizing community mental health services prior to their incarceration resulted in a significant increase in the likelihood of reincarceration. Additionally, PMI incarcerated for misdemeanor crimes were more likely to criminally recidivate, where as those incarcerated for felonies were more likely to psychiatrically recidivate (i.e., rehospitalization for psychiatric issues) once released (Hartwell, 2003). It appears that the “revolving door” between the CJ and mental health systems negatively impacts mental health and CJ treatment gains with this population (Bewley & Morgan, 2011; Morgan, Flora, Kroner, Mills, Varghese, & Steffan, 2012). This issue may be more adequately addressed if their co-occurring issues

of mental illness and criminalness were addressed simultaneously to improve both mental health and criminal outcomes (e.g., Hodgins, Muller, Freese, Tiihonen, Repo-Tiihonen, Eronen, et al., 2007; Morgan et al., 2010; Morgan, Steffan, Shaw, & Wilson, 2007).

Explanations of PMI's Increased CJ Involvement

PMI are involved in and impacted across both CJ and mental healthcare systems; however, it is unclear why PMI are becoming involved in the CJ system at a disproportionate rate. Multiple explanations have been posited, but tend to central around two primary themes: lack of available mental health treatment in the community, or increased presence of criminal risk factors for PMI. Additionally, it is suggested that strict crime control efforts and drug sentencing laws also disproportionately affect those with severe mental illness given the high prevalence of co-occurring substance abuse issues (Lurigio, 2011).

Prior to the 1960's, a majority of PMI were housed in psychiatric institutions, but this environment was eventually deemed too restrictive and alternatives, such as group homes or independent living, were preferred (Bachrach, 1996). Deinstitutionalization (i.e., reducing long-term, inpatient care by releasing patients into the community with increased mental health services provided in a less restrictive environment) began as PMI were released into the community to receive mental health services; however, available community resources fell short of meeting the needs of PMI resulting in unavailable and inadequate services, and poor outcomes such as homelessness and CJ involvement occurred (Lamb & Bachrach, 2001).

It has been suggested the lack of adequate mental health services within the community led to the inability of deinstitutionalized PMI to function and conform their behavior to the law resulting in CJ involvement (Lamb & Bachrach, 2001; Lamb & Weinberger, 1998; Teplin, 1984). Although the deinstitutionalization hypothesis was a popular explanation for PMI's CJ involvement (e.g., Lamb & Bachrach, 2001; Lamb & Weinberger, 1998; Teplin, 1984), there has been little to no empirical evidence to support this hypothesis. It does not appear that the risk for incarceration for PMI was increased by deinstitutionalization and the lack of access to mental health services resulting in unmanaged mental health symptoms (Erickson, Rosenheck, Trestman, Ford, & Desai, 2008; Fisher, Packer, Simon, & Smith, 2000; Steadman, Monahan, Duffee, Hartstone, & Robbins, 1984).

For example, in a sample of 36,385 veterans released from inpatient psychiatric care, risk of incarceration was most affected by substance use (Erickson et al., 2008). Furthermore, the deinstitutionalization hypothesis is not supported by prevalence data as the number of PMI admitted to psychiatric facilities in the United States decreased by 23% between 1950 and 2000, but the number of incarcerated PMI only increased by 4% (Frank & Glied, 2006). Recent research supports the hypothesis that CJ involvement of PMI is facilitated by criminogenic factors, and not merely the presence of active symptoms of mental illness (Gross & Morgan, 2013; Morgan et al., 2010; Skeem et al., 2011; Wolff et al., 2011).

Increased prevalence of criminal risk factors is the more likely explanation for PMI's CJ involvement as a recent increase attention and empirical support suggests that PMI

who do engage in criminal behavior are, in fact, both criminals and mentally ill (Morgan et al., 2010; Gross & Morgan, 2013). It appears that the presence of criminal risk factors better accounts for CJ involvement than mental illness alone. Andrews and Bonta (2010) identified eight risk factors, labeled the “Central Eight,” that are the greatest predictors of criminal behavior. These risk factors include: a history of antisocial behavior, antisocial personality pattern, antisocial cognition, antisocial peers, antisocial associates, family/marital circumstances, school/work, leisure/recreation, substance abuse and increase the propensity of individuals to engage in criminal behavior. The criminal risk factors work cumulatively such that the greater the number of risk factors experienced by an individual the greater their propensity to engage in crime. It appears that these risk factors differentially impact populations and those with mental illness may be disproportionately exposed to and affected by a greater number risk factors. Draine and colleagues (2002) identified various environmental factors (e.g., homelessness, antisocial peers), most of which are related to socioeconomic status, that are common to PMI that predispose them at a greater rate to criminal risk factors than other populations with a higher levels of functioning and a greater number of resources (e.g., financial, social) at their disposal. Notably, mental illness is not a central risk factor and has been found to be only minimally predictive of criminal behavior when not paired with at least one of the aforementioned criminal risk factors.

A criminal risk factor of particular interest is criminal thinking as it is one of the primary predictors of criminal behavior as noted above. People who engage in criminal behavior, including PMI, unlike those who do not evidence thought patterns supportive of

criminal actions (Yochelson & Samenow, 1976; Morgan, Fisher, Duan, Mandracchia, Murray, 2010; Gross & Morgan, 2013; Wolff, Morgan, Shi, Fisher, & Huening, 2011.) Walters (2006a) proposes eight distinct criminal thinking styles (i.e., Mollification [tendency to place blame for behavior on external factors] , Discontinuity [tendency to be easily distracted from one's goals], Superoptimism [belief in one's ability to avoid the negative consequences of their behavior], Power Orientation [people who seek power and control], Entitlement [providing one's self with permission to behave poorly based on an assumptions of being unique or special], Cutoff [impulsive], Sentimentality [tendency to attempt to "undo" the harm caused by one's behavior by engaging in prosocial behavior afterwards], Cognitive Indolence [tendency to take short cuts when problem solving]). Criminal thinking not only contributes to engagement in criminal behavior, but influences prolonged and persistent involvement in criminal activity. Specifically, "a criminal belief system supports the evolving criminal lifestyle by shielding it from the light of corrective environmental experience" (Walters, 2006a, p. 5).

Carr and colleagues (2009) examined criminal thinking styles in a sample of 76 male psychiatric patients (78.9% reported a prior history of arrests) admitted to a long-term psychiatric facility, and compared the results to findings from a previously published study utilizing offenders without mental illness. Results indicated that the psychiatric patients scored significantly higher on five (i.e., Mollification, Cutoff, Entitlement, Power Orientation, Sentimentality) out of eight criminal thinking style scales. Morgan and colleagues (2010) examined criminal thinking and antisocial attitudes, as well as psychiatric symptomatology, in a sample of 416 incarcerated PMI. It was found that

incarcerated PMI exhibited criminal thinking patterns and antisocial attitudes similar to those of incarcerated offenders without mental illness. Additionally, the psychiatric symptomatology of the incarcerated PMI was similar to that of inpatient psychiatric samples.

General criminal thinking has been shown to partially mediate the relationship between mental illness and institutional violence for incarcerated PMI (Walters, 2011) suggesting that the behavior of PMI who act violently should be considered a product of more than mental illness. A recent study conducted with 4,204 incarcerated male and female participants found results consistent with Carr et al. (2009) and Morgan et al. (2010) such that incarcerated PMI evidenced similar criminal thinking styles when compared to those without mental illness (Wolff et al., 2011). Additionally, those with severe mental illness (i.e., schizophrenia or bipolar disorder) displayed higher levels of criminal thinking than those without mental illness and those with less severe mental illness (i.e., depression, posttraumatic stress disorder, and anxiety; Wolff et al., 2011). Although these three studies provided valuable information for understanding PMI that are and are not CJ involved, significant research design and methodological problems limited conclusive interpretations. Specifically, Carr et al. (2009) and Morgan et al. (2010) lacked a direct comparison group, and Wolff et al. (2011) was limited in that there was no mental health sample that was not CJ involved as a control. It appears that PMI who are CJ involved are not merely criminals because of their mental illness, but are “criminals who happen to be mentally ill” (Morgan et al., 2010). This assertion has important implications for PMI who are CJ involved, but the applicability of these results

to PMI who are not CJ involved have yet to be empirically examined. Thus, the exploration of criminal thinking in PMI is warranted. If antisocial attitudes are found within PMI, or a subset of PMI, who are not CJ involved, what effects do such dispositions have on other aspects of functioning (e.g., mental health functioning)?

Gross and Morgan (2013) built upon these prior studies by examining criminal thinking in a short-term, inpatient psychiatric sample with and without CJ involvement. Additionally, the study provided a direct comparison group for Morgan et al. (2011) as the 94 psychiatric patients were matched with participants from the Morgan et al. (2011) samples on a number of sociodemographic variables (e.g., gender, diagnosis, ethnicity, years of formal education) where available. Comparisons between the two groups (i.e., incarcerated PMI and short-term psychiatric inpatients) indicated that PMI with CJ involvement present similarly to incarcerated PMI with regards to psychiatric symptomatology and criminal thinking. Furthermore, PMI without CJ involvement were distinguished from incarcerated PMI by lower levels of criminal thinking and lower levels of psychiatric symptomatology directly related to criminal risk (i.e., antisocial personality disorder) but present similarly with regards to other psychiatric symptoms.

Wolff and colleagues (2013) expanded the field of research by evaluating the relationship between emotions and attitudes, and CJ and mental health variables. The study utilized a sample of 3986 male and 218 female inmates, from a single department of corrections, who were expected to be released within 2 years of the survey date. Participants completed a 60-minute survey that included measures to assess criminal thinking, aggression, self-control, hopelessness, criminal history, problematic behaviors,

physical and mental health, and history of mental health treatment. Self-reported serious mental illness was related to poorer ratings of self-control, and increases in criminal thinking, aggression and hopelessness. The presence of substance abuse issues yielded similar results to those with serious mental illness; however, it is unclear from the results if there was a cumulative effect for those individuals that reported comorbid mental illness and substance abuse problems.

These results support Skeem and colleagues (2011) estimate that 9 in 10 persons with mental illness who become involved in the CJ system do so for reasons unrelated to mental illness. It appears that some PMI that are CJ involved present with features known to be associated with criminality (see Andrews & Bonta, 2010), in addition to their mental illness symptomatology, that increases their propensity to engage in crime. Therefore, this group of PMI appears to be engaging in criminal behavior due to criminal risk factors and not as a result of unmanaged mental health symptoms resulting from a lack of access to mental health services due to deinstitutionalization.

Diversion and Community Reentry

As previously noted, jails and prisons have become one of the primary providers of mental health treatment in the United States (Abramsky & Fellner, 2003); however, correctional institutions are poorly equipped to provide evidence-based and efficacious treatment programs. For example, treatment programs in jails primarily focus on mental health treatment and rarely address criminogenic needs (Diamond, Wang, Holzer, Thomas, & Cruser, 2001). In a national study of 230 mental health professionals providing services across 165 state correctional facilities both criminal and mental health

needs were identified as essential treatment areas; however, less time was spent on these two treatment needs when compared to other treatment domains (Bewley & Morgan, 2011). Funding limitations and support for implementing and developing innovative treatment planning were identified by the providers as significant obstacles to treatment delivery. Furthermore, the limited availability of qualified treatment providers impacts treatment delivery as the psychologist to inmate ratio has been estimated to range from 1 doctoral treatment provider to every 505 inmates to 1 doctoral treatment provider to every 2,000 inmates (Bewley & Morgan, 2011; Boothby & Clements, 2000).

The goal of correctional facilities is not one of mental health treatment, but assist in the maintenance of public safety by detaining those who break the law. Funding becomes an issue because mental health providers identify the receipt of minimal financial support as a primary factor limiting their ability to implement evidence-based treatment programming (Bewley & Morgan, 2011) and the correctional environment (e.g., overcrowding, violence) can have a negative impact on the psychological well-being of inmates (McCorkle, 1993). In an attempt to more effectively intervene and serve CJ involved PMI, multiple diversion programs (i.e., programs that utilize alternatives to incarceration) have been developed with the goal of reducing the incarcerated PMI population and recidivism (Heilbrun, DeMatteo, Yasuhara, Brooks-Holliday, Shah, King, et al., 2012; Skeem et al., 2011). Examples of such programs would include specialized probation teams (community supervision provided by officers with a reduced caseload and specialized training in mental health), specialized courts (courts that divert individuals from further CJ involvement by mandating mental health and substance abuse

treatment instead of incarceration), and community mental health treatment programs (case management and outpatient services aimed at meeting the mental health needs of PMI in a less restrictive environment).

Influential in the development of diversion and intervention programs is the Sequential Intercept Model (Munetz & Griffin, 2006). The Sequential Intercept Model is a framework to assist in the conceptualization of the point in time that services can be introduced as an intervention for PMI to reduce CJ involvement. Ideally, individuals are identified within the community as being at risk for CJ involvement, and interventions are provided before they become CJ involved.

Once an individual has been arrested and charged with a crime, those deemed appropriate (e.g., have a qualifying mental health diagnosis) can be diverted to specialized legal courts that are able to take into account legal sanctions in conjunction with mental health service needs. Mental health courts allow for PMI's cases to be combined and dealt with in a court where the judge is able to order mandated mental health treatment (Skeem et al., 2011). At the start of 2005, there were 90 identified mental health courts spanning across 34 states in the United States that included over 7,500 offenders (Redlich, Steadman, Monahan et al., 2006). This number has increased as a result of federal legislation and funding for the development of such programs (Corrigan, Mueser, Bond, Drake, & Solomon, 2009). Mental health courts have received federal backing due to their general success with reducing the CJ involvement of PMI (Cosden, Ellens, Schnell, & Yamini-Diouf, 2005; Herinckx, Swart, Ama, Dolezal, & King, 2005; Hiday & Ray, 2010; McNiel & Binder, 2007). Another program developed

to meet the unique needs of PMI after becoming involved in the CJ system are specialized community supervision teams. These community supervision officers differentiate themselves from officers in traditional probation or parole in that they are specially trained in meeting the needs of PMI and have fewer clients to supervise to allow for more intensive services. However, specialized community supervision caseloads have failed to significantly impact CJ or mental health outcomes (Skeem, Manchak, Vidal, & Hart, 2009).

Lastly, as an intervention for those individuals who are either at risk for CJ involvement or have become CJ involved and are now released into the community, evidence based mental health treatment programs, such as Assertive Community Treatment (ACT) can be utilized. Assertive community treatment “is a team treatment approach designed to provide comprehensive, community-based psychiatric treatment, rehabilitation, and support to persons with serious and persistent mental illness” (Assertive Community Treatment Association, 2007). ACT programs have been shown to be beneficial for PMI not at risk for CJ involvement as they improve mental health functioning but have minimal effect on preventing future CJ involvement (Morrissey, Meyer, Cuddeback, 2007; Calsyn, Yonker, Lemming, Morse, & Klinkenberg, 2005). In spite of these service options, a majority of PMI with CJ involvement are not linked with programs utilizing evidence-based practices for their specific needs (i.e., ACT is evidence-based for the treatment of mental illness, but not for populations that are CJ involved; Steadman & Naples, 2005).

A variation of ACT programs for CJ involved PMI was the advent of Forensic Assertive Community Treatment (FACT) programs. FACT programs differentiate themselves from ACT as they only admit PMI with CJ involvement and receive a majority of their referrals from the CJ system (Lamberti, Weisman, & Faden, 2001; Cuddeback, Morrissey, & Cusak, 2008). Psychiatric recovery and criminal recidivism are likely intertwined and this interaction warrants further investigation. Given that ACT is effective for PMI without CJ involvement, FACT programs have been developed to deliver high intensity services in the community treatment programs, but also incorporate the treatment of criminogenic needs with the goal of reducing and potentially eliminating further CJ involvement (Skeem et al., 2011; Cuddeback, Morrissey, & Cusak, 2008). The prevalence of FACT programs is increasing as Lamberti and colleagues (2011) recently identified 27 FACT programs across the United States when only 16 programs were identified approximately 7 years earlier (Lamberti, Weisman, & Faden, 2004). Furthermore, an increase in FACT programs is necessary to address the needs of the ever growing population of PMI who are released from CJ custody. Cuddeback and colleagues (2008) estimate that urban communities should develop FACT programs with the capacity to address the needs of approximately 44% of their population with severe mental illness. Despite the increased prevalence of FACT programs, there appears to be minimal standardization across programs in terms of the services provided and the inclusion criteria to determine eligibility for program enrollment (Lamberti, Deem, Weisman, & LaDuke, 2011; Cuddeback et al., 2008).

It also appears that the timing of service delivery is important with regards to having a potential impact on recidivism. Archival data was examined by Constantine and colleagues (2012) for over 10,000 released offenders with severe mental illness from both prisons and jails across two states. The number of arrests were examined in relation to the receipt of community mental health and/or inpatient mental health services at over 90, 180, and 270 day periods following release. Results indicated that outpatient services received within a 90 day period following release significantly reduced the number of arrests, while inpatient or crisis intervention services within the 90 days following release increased arrest rates (Constantine, Robst, Andel, & Teague, 2012).

Criminal and Psychiatric Recidivism: Overlapping Risk

When compared to offenders without mental illness, PMI who are placed in community supervision (i.e., probation and parole) after being released from a correctional facility are significantly more likely to criminally recidivate (Messina, Burdon, Hagopian, & Prendergast, 2004). In a study including 44,987 individuals on parole, those with a mental illness were almost twice as likely (52% - 62%) to return to a correctional facility within one year of their release. Similarly, it is estimated that 37% to 53% of PMI released from mental health facilities psychiatrically recidivate within one year of being discharged (Hillman, 2001; Segal & Burgess 2006). Commonalities such as high criminal and psychiatric recidivism rates between PMI who are and are not CJ involved may indicate common risk factors such as poverty, homelessness and unemployment similarities (Draine, Salzer, Culhane, & Hadley, 2002; Mgustshini, 2010) between the two groups. Such results would identify a neglected treatment area for PMI

regardless of setting (CJ or mental health) that, if addressed, may improve treatment outcomes (e.g., symptom reduction, increased prosocial behavior, reduced criminal and psychiatric recidivism).

Although some PMI appear to enter the CJ system as a result of their mental health symptoms, it has been suggested that some PMI have comorbid antisocial and criminal dispositions that result in their involvement in the CJ system (Hiday, 1999). Elbogen and Johnson (2009) found that severe mental illness did not predict future violence if not paired with historical, clinical, and dispositional contextual factors (e.g., past violence, unemployment, low socioeconomic status, victimization). Furthermore, Draine and colleagues (2002) noted that the relationship between mental illness and crime is weak, and suggested poverty, lack of education, unemployment or underemployment, and limited prosocial relationships likely serve as moderating variables in this relationship.

Hawthorne and colleagues (2012) assessed the risk for incarceration in a sample of 39,463 PMI who were receiving mental health services utilizing a review of client records. Results indicated that homelessness, substance abuse, lack of medical insurance, and delayed outpatient and case management services were factors related to increased risk for incarceration. Mental illness appears to predispose individuals to downward drift (i.e., mental health symptomatology and deterioration leads to poorer socioeconomic status) frequently experienced by PMI (Draine et al., 2002; Fisher, Silver, Wolff, 2006). For example, both offenders and PMI often live in low income areas, are single, have limited social and family support, and have a history of unemployment (Fisher et al., 2006). Homelessness and a family history of incarceration have been found to be more

prevalent among PMI who are CJ involved than offenders without mental illness (Ditton, 1999). Additionally, PMI who are CJ involved were more likely to be unemployed before their arrest when compared to offenders without mental illness (Ditton, 1999), and male PMI with substance abuse disorders were twice as likely to have a criminal record as those without a substance use disorder.

Furthermore, with a sample of 600 individuals on probation Girard and Wormith (Girard & Wormith, 2004) found that probationers with mental illness evidenced higher scores on the Levels of Service Inventory/Case Management Inventory (LSI/CMI; a commonly used measure of risk assessment for predicting criminal recidivism) than persons without mental illness, suggesting PMI experience more criminal risk factors than individuals without mental illness. Similar results were obtained with the LSI/CMI in a sample of 200 individuals on parole. Those with mental illness scored significantly higher (especially on the antisocial subscale) than those without mental illness.

Many of these criminal risk factors measured by the LSI (e.g., education, employment, housing, substance abuse, antisocial attitudes) correspond to the poverty, joblessness and other factors that Draine and colleagues (2002) identified. The criminal risk factors measured by the LSI/CMI are positively correlated to criminal recidivism. In a study examining PMI perceived risk for psychiatric recidivism (i.e., rehospitalization) individuals endorsed risk factors such as unemployment, lack of education, lack of housing, and economic difficulties (Mgustshini, 2010) that correspond to those used in the prediction of criminal behavior. Thus it seems reasonable to suggest that criminal risk factors may also play a role in psychiatric recidivism. These predisposing, environmental

factors are important in terms of treatment and recidivism (criminal and psychiatric) given that they increase the potential for the presence of antisocial attitudes in PMI, even if they are not currently engaging in criminal behavior.

Integrated Treatment

There is a dearth in the research regarding the treatment needs of PMI with CJ involvement, and therefore there is limited information to direct the development of appropriate and effective treatment programs that take a holistic approach toward the needs of this unique population. In addition to serious mental illness such as mood and psychotic disorders, substance abuse is a common comorbid condition frequently needing to be addressed in treatment with PMI who are CJ involved. Utilizing a sample of 2,877 male federal prisoners, Walters (2012) found a significant correlation between the reactive criminal thinking scale on the PICTS and prior substance use. Therefore, it appears the reactive criminal thinking may play an important role in criminal behavior that is in some way influenced by substance use.

Best and Colleagues (2009) surveyed 199 individuals who were participating in a court-mandated drug treatment program in the United Kingdom. No information was provided regarding the presence of comorbid mental health diagnoses. Criminal thinking was measured with the Criminal Thinking Scale (CTS), and those enrolled in the court-mandated drug treatment program evidenced similar levels of criminal thinking when compared to a CJ involved individuals. What may be the most interesting result from this study is the relationship between criminal thinking and treatment engagement. Criminal thinking and treatment engagement were shown to be significantly negatively correlated.

That is, the higher the level of criminal thinking evidenced by the participant, the lower their degree of treatment engagement. This is especially relevant as Helfrich and colleagues (2012) found the most positive treatment gains for individuals who are highly engaged in services. Additionally, Best and colleagues (2009) found that those with higher levels of criminal thinking reported the greatest severity of psychological distress and mental health issues. Interpersonally, those with higher levels of criminal thinking were also high in levels of hostility and risk taking. Unfortunately there was no outcome data collected in this study to allow for the assessment of the effects of criminal thinking on the actual treatment progress; however, it is plausible to assume that outcomes would be negatively affected for those high in criminal thinking. It appears that criminal thinking may threaten the ability of the client to actively engage in the therapeutic process, and presents a number of interpersonal variables for the treatment provider to be aware of and attempt to work through.

The need for integrated treatment of both mental health and criminogenic needs is highlighted by findings that PMI have higher indicators of criminal risk factors compared to individuals without mental illness (Girard & Wormith, 2004). Criminal risk factors increase individual's (including PMI) risk for CJ involvement (Andrews & Bonta, 2010), but may also have implications for psychiatric outcomes (e.g., medication compliance, treatment adherence, psychiatric recidivism). Criminal thinking has been linked to treatment non-completion in offender samples (Walters, 2002); thus, if PMI who are not CJ involved exhibit higher levels of criminal thinking they may also be at a higher risk for treatment non-adherence and consequently psychiatric recidivism and relapse. This is

particularly relevant for offender and mandated clients because resistance (Milgram & Rubin, 1992; Rappaport, 1982) and avoiding treatment engagement (Riordan & Martin, 1993) is common. If PMI with comorbid criminality are less engaged in treatment, they are less likely to fully benefit from the services provided regardless of the quality of services. Furthermore, they may be more likely to prematurely withdraw from services. Notably, treatment compliance is more difficult to maintain in the community, and meta-analytic research has found that almost one third of offenders fail to complete criminal justice related mental health treatment programs in the community (Olver, Stockdale, & Wormith, 2011).

In a study by Mitchell and colleagues (2013), utilizing the files of participants from a day reporting center (n = 216) and a sober living facility (n = 187), they assessed the influence of criminal thinking on program attrition. Subjects were coded as non-completers if they were discharged due to noncompliance or if they discontinued prior to being discharged by their case manager. A majority of the subjects from the sober living facility (91%) had a history of arrest (this was not assessed for those enrolled in the day reporting center), and 74% of the subjects from the day reporting center were determined to be either medium or high risk as measured by the Level of Services Inventory – Revised (LSI-R; this was not assessed for those in the sober living facility). Thirty-eight percent of the subjects at the day reporting center and 35% of the subjects at the sober living facility failed to complete the treatment program. Overall, non-completers evidenced a higher level of criminal thinking as measured by the Criminogenic Thinking Profile (CTP) than those who completed the program. What is unclear from this study is

why (e.g., poor relationship with treatment provider, lack of motivation, lack of insight into maladaptive functioning) those subjects with criminal thinking failed to complete the program.

Developing and maintaining a strong, positive working alliance between client and therapist greatly impacts treatment success (Horvath & Greenberg, 1989; Horvath & Symonds, 1991). This applies to the therapeutic relationship with offender samples as well as weaker working alliances between an offender and a therapist negatively impact CJ outcomes (e.g., increases in criminal behavior, disciplinary infractions during incarceration, and recidivism; Serran, Fernandez, Marshall, & Mann, 2003; Skeem, Loudon, Polaschek, & Camp, 2007; Skeem, Loudon, Manchak, Vidal, & Haddad, 2009).

Looking beyond the role of criminal thinking in the provocation and exacerbation of criminal behavior, investigating the influence of criminal thinking on psychiatric health and recovery is warranted. Furthermore, therapeutic-based responses to criminality assume that the lack of access to treatment or treatment non-compliance is the causal factor underlying their criminal behavior and, as such, engaging these individuals in treatment that addresses criminal thinking will prevent future criminal behavior in addition to improving treatment engagement and mental health outcomes (Fisher, Silver, & Wolff, 2006). Skeem and colleagues (2010) suggest that integrated treatment may not be a concern if specialized treatment providers recognize the criminogenic needs and integrate them into the treatment program as necessary even if they are not formalized treatment foci. Unfortunately, very few service providers have specialized training specifically related to offender populations and therefore my feel ill-equipped to address

criminogenic features when compared to their comfort with mental health concerns (see for example Bewley & Morgan, 2011). Thus, targeted and specialized treatment interventions that are evidence-based and easily implemented are needed.

APPENDIX B

INFORMED CONSENT – PARTICIPANT FORM

What is this project studying?

This research study is about how people with mental illness think, the types of problems they have, and what kind of legal problems they might have. Learning more about how people with mental illness think, the way they behave, and their problems will allow us to provide better treatment for people with mental illness.

What would I do if I participate?

We will be asking you to answer some questions on a computer. We will ask you questions such as how old you are, how far you went in school, if you are charged with any crimes, and what type of treatment you are receiving. Some questions will be about how you think and feel about things, things you may or may not do, your treatment, the symptoms you experience, and your mental health and legal history. After answering those questions, we will look at your file at _____ (facility name), and we will ask your case manager to tell us about your treatment. You will receive \$10 for your time in answering the questions.

Can I quit if I become uncomfortable?

You can stop answering questions at any time. You can also leave any time you wish. Answering our questions is your choice, and nothing bad will happen to you if you want to stop answering our questions.

How long will participation take?

Answering these questions should take about one hour.

How are you protecting privacy?

We will not ask you questions that will give away who you are. We will not ask you to give us your name or date of birth. We will not ask you these questions so that no one can know which answers are yours. Because your name will only be on this form, no one will know which answers are yours. We will also make sure that no one can see the answers you provide by locking your answers in a private room at Texas Tech University. We will put your answers into a computer that will only be able to be used with a special password. We will not give this password to anyone that is not working with us on this research study. No one at _____ (facility name), including your case manager, will know if you refuse to participate, if you choose to stop participating before finishing the survey, or how you answered the questions. This research study has nothing to do with how you are treated or the services you receive at _____ (facility name).

To help us make sure no one learns which answers are yours, we have a Certificate of Confidentiality from the National Institutes of Health. This means that we cannot be forced to give your answers to anyone else. Because of this Certificate, no one, not even a judge, can make us give your answers away. This Certificate does not stop you or a member of your family from giving others your answers or that you answered questions for us. If you give someone permission to have your answers to our questions, such as someone that you work for or someone that provides you insurance, only then we will give your answers away.

If I have some questions about this research study, who can I ask?

This research study is being run by Dr. Robert Morgan and Ms. Nicole Gross from the Department of Psychology at Texas Tech University. If you have questions, you may contact Dr. Morgan or Ms. Gross in writing at PO Box 42051, Department of Psychology, Texas Tech University, Lubbock, TX 79409. Additionally, Dr. Morgan can also be reached via email at robert.morgan@ttu.edu or at the following telephone number: 806-742-3711 ext. 231. Ms. Gross can also be contacted via email at nicole.gross@ttu.edu or at the following phone number: 806-742-3711 ext. 407.

Texas Tech University also has a Board that protects the rights of people who participate in research. You can ask them questions by calling them at (806) 742-2064. You can also write them at Institutional Review Board for the Protection of Human Subjects, Office of the Vice President for Research, Texas Tech University, Lubbock, Texas 79409.

Signature

Date

Printed Name

APPENDIX C

INFORMED CONSENT - NON-PARTICIPANT FORM

We understand that you do not want to answer all of the questions we are asking, but we are asking you to provide us with basic information about yourself such as your age, gender, and race. This will help us better understand people that answer all the questions compared to people that do not answer all of the questions.

What is this project studying?

This research study is about how people with mental illness think, the types of problems they have, and what kind of legal problems they might have. Learning more about how people with mental illness think, the way they behave, and their problems will allow us to provide better treatment for people with mental illness.

What would I do if I participate?

We are asking you to answer basic questions about yourself. We will ask you questions such as how old you are, how far you went in school, if you are charged with any crimes, and what type of treatment you are receiving. All of your answers are private. At no time will you be asked to put your name with your answers.

Can I quit if I become uncomfortable?

You can stop answering questions at any time. You can also leave any time you wish. Answering our questions is your choice, and nothing bad will happen to you if you want to stop answering our questions.

How long will participation take?

Answering these questions should take between 3 – 5 minutes.

How are you protecting privacy?

We will not ask you questions that will give away who you are. We will not ask you to give us your name or date of birth. We will not ask you these questions so that no one can know which answers are yours. Because your name will only be on this form, no one will know which answers are yours. We will also make sure that no one can see the answers you provide by locking your answers in a private room at Texas Tech University. We will put your answers into a computer that will only be able to be used with a special password. We will not give this password to anyone that is not working with us on this research study. No one at _____ (facility name), including your case manager, will know if you refuse to participate, if you choose to stop participating before finishing the survey, or how you answered the questions. This research study has nothing to do with how you are treated or the services you receive at _____ (facility name).

To help us make sure no one learns which answers are yours, we have a Certificate of Confidentiality from the National Institutes of Health. This means that we cannot be forced to give your answers to anyone else. Because of this Certificate, no one, not even a judge, can make us give your answers away. This Certificate does not stop you or a member of your family from giving others your answers or that you answered questions for us. If you give someone permission to have your answers to our questions, such as someone that you work for or someone that provides you insurance, only then we will give your answers away.

If I have some questions about this research study, who can I ask?

This research study is being run by Dr. Robert Morgan and Ms. Nicole Gross from the Department of Psychology at Texas Tech University. If you have questions, you may contact Dr. Morgan or Ms. Gross in writing at PO Box 42051, Department of Psychology, Texas Tech University, Lubbock, TX 79409. Additionally, Dr. Morgan can also be reached via email at robert.morgan@ttu.edu or at the following telephone number: 806-742-3711 ext. 231. Ms. Gross can also be contacted via email at nicole.gross@ttu.edu or at the following phone number: 806-742-3711 ext. 407.

Texas Tech University also has a Board that protects the rights of people who participate in research. You can ask them questions by calling them at (806) 742-2064. You can also write them at Institutional Review Board for the Protection of Human Subjects, Office of the Vice President for Research, Texas Tech University, Lubbock, Texas 79409.

Signature

Date

Printed Name

APPENDIX D

DEMOGRAPHIC FORM

Demographic Information

Please check the response or fill in the blank where appropriate

1. What is your age? _____
2. What is your gender? (Check only one.)
 - a. ☐ Male
 - b. ☐ Female
 - c. ☐ Transgender
 - d. ☐ Other (Explain: _____)
3. What is your racial/ethnic identity? (Check only one.)
 - a. ☐ American Indian/Alaska Native
 - b. ☐ Asian
 - c. ☐ Native Hawaiian or Other Pacific Islander
 - d. ☐ Black or African American
 - e. ☐ Caucasian
 - f. ☐ Hispanic or Latino
 - g. ☐ Other (Explain: _____)
4. What is your relationship status? (Check only one.)
 - a. ☐ Single/non-committed
 - b. ☐ Partnered/Common Law
 - c. ☐ Divorced
 - d. ☐ Separated
 - e. ☐ Married
 - f. ☐ Widowed
5. How many years of formal education have you completed? _____
6. Are you currently employed? ☐ Yes ☐ No

If yes, what is your current employment status?
☐ Full-Time ☐ Part-Time ☐ Other

If yes, how long have you been employed at your current job?
Years _____ Months _____ Weeks _____

If no, are you receiving disability benefits? ☐ Yes ☐ No
7. Do you have any children? ☐ Yes ☐ No

If yes, how many children do you have? _____

If yes, what are their ages? _____

8. What is your current living arrangement? (Check only one.)

- a. ☐ With a roommate in an apartment or house
- b. ☐ With family/partner in an apartment or house
- c. ☐ Alone in an apartment or a house
- d. ☐ Group Home
- e. ☐ Halfway House
- f. ☐ Residential Correctional Facility
- g. ☐ Homeless
- h. ☐ Other (Explain:_____)

9. Have you ever been admitted to a psychiatric hospital? ☐ Yes ☐ No

If yes, how many times have you been admitted to a psychiatric facility? _____

If yes, what is the approximate total time spent in psychiatric hospitals (hospitalized for mental health reasons)? _____

If yes, when was your most recent hospitalization? _____

10. Have you been diagnosed with a mental health disorder? ☐ Yes ☐ No

If yes, please list your current diagnoses _____

11. Are you currently taking medications for your mental health symptoms?

☐ Yes ☐ No

If yes, please list type and dose _____

APPENDIX E

BRIEF SYMPTOM INVENTORY (BSI)

A copy of the BSI was not included due to Copyright restrictions. Please contact Pearson for a copy of or more details regarding this measure.

APPENDIX F

PSYCHOLOGICAL INVENTORY OF CRIMINAL THINKING STYLES –

LAYPERSON EDITION – SHORT FORM (PICST-L-SF)

**Psychological Inventory of Criminal Thinking Styles –
Layperson Edition – Short Form**

Glenn D. Walters, Ph.D.

Adapted by Nicole R. Gross, M.A. with the permission of Glenn D. Walters, Ph.D.

Directions: The following items, if answered honestly, are designed to help you better understand your thinking and behavior. Please take the time to complete each of the 35 items on this inventory using the four-point scale defined below:

4= strongly agree (**SA**)

3= agree (**A**)

2= uncertain (**U**)

1= disagree (**D**)

		<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>
1	I will allow nothing to get in the way of me getting what I want...	4	3	2	1
2	Even though I may start out with the best of intentions I have trouble remaining focused and staying "on track"...	4	3	2	1
3	When pressured by life's problems I have said "the hell with it" and followed this up by doing whatever I want to do...	4	3	2	1
4	The way I look at it, I've paid my dues in life just like anyone else, and am therefore justified in taking what I want ...	4	3	2	1
5	The more I get away with in life, the more I think there's no way I will ever be caught...	4	3	2	1
6	I believe that breaking the law is no big deal as long as you don't physically hurt someone...	4	3	2	1
7	I would not hesitate to get money in any way (legally or illegally) if my friends or family needed help...	4	3	2	1
8	I am uncritical of my thoughts and ideas to the point that I ignore the problems and difficulties associated with these plans until it is too late...	4	3	2	1
9	When frustrated I find myself saying "screw it" and then engaging in some irresponsible or irrational act...	4	3	2	1
10	I find myself taking shortcuts, even if I know these shortcuts will interfere with my ability to achieve certain long-term goals...	4	3	2	1
11	I will frequently start an activity, project, or job but then never finish it...	4	3	2	1

		<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>
12	When it's all said and done, society owes me...	4	3	2	1
13	I tend to let things go which should probably be attended to, based on my belief that they will work themselves out...	4	3	2	1
14	I have used alcohol or drugs to eliminate fear or apprehension before doing something risky...	4	3	2	1
15	I sometimes think that I would be willing to do anything, even something illegal, in order to live the life I have coming...	4	3	2	1
16	When questioned about my motives for making poor choices, I have justified my behavior by pointing out how hard my life has been...	4	3	2	1
17	I have trouble following through on good initial intentions...	4	3	2	1
18	There have been times in my life when I felt I was above the law	4	3	2	1
19	I tend to act impulsively under stress	4	3	2	1
20	I tend to put off until tomorrow what should have been done today...	4	3	2	1
21	Although I have always realized that I might get caught for doing something, I would tell myself that there was "no way they would catch me this time"...	4	3	2	1
22	I have difficulty critically evaluating my thoughts, ideas, and plans...	4	3	2	1
23	I still find myself saying, "the heck with working a regular job, I'll just take it"...	4	3	2	1
24	I think that I can use drugs and avoid the negative consequences (such as addiction) that I have observed in others...	4	3	2	1
25	I tend to be rather easily sidetracked so that I rarely finish what I start...	4	3	2	1
26	I have trouble controlling my angry feelings...	4	3	2	1
27	I believe that I am a special person and that my situation deserves special consideration...	4	3	2	1
28	Even when I set goals I frequently do not obtain them because I am distracted by events going on around me...	4	3	2	1
29	When frustrated I will throw rational thought to the wind with such statements as "screw it" or "the hell with it"...	4	3	2	1
30	There have been times when I have felt entitled to break the rules or behave poorly in order to pay for a vacation, new car, or expensive clothing that I told myself I needed	4	3	2	1

		<u>SA</u>	<u>A</u>	<u>U</u>	<u>D</u>
	...				
31	I rarely consider the consequences of my actions...	4	3	2	1
32	There are times when I have done bad things and not gotten caught, and sometimes I feel overconfident and feel like I could do just about anything and get away with it...	4	3	2	1
33	There have been times when I have made plans to do something with my family and then cancelled these plans so that I could hang out with my friends, and behave irresponsibly...	4	3	2	1
34	I tend to push problems to the side rather than dealing with them...	4	3	2	1
35	I have used good behavior or various situations to give myself permission to do things that may be irresponsible or dangerous...	4	3	2	1

APPENDIX G

RECOVERY ASSESSMENT SCALE (RAS)

Recovery Assessment Scale (RAS)

Instructions: Below is a list of statements that describe how people sometimes feel about themselves and their lives. Please read each one carefully and circle the number to the right that best describes the extent to which you agree or disagree with the statement. Circle only one number for each statement and do not skip any items.

		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1	I have a desire to succeed	1	2	3	4	5
2	I have my own plan for how to stay or become well	1	2	3	4	5
3	I have goals in life that I want to reach	1	2	3	4	5
4	I believe I can meet my current personal goals	1	2	3	4	5
5	I have a purpose in life	1	2	3	4	5
6	Even when I don't care about myself, other people do	1	2	3	4	5
7	I understand how to control the symptoms of my mental illness	1	2	3	4	5
8	I can handle it if I get sick again	1	2	3	4	5
9	I can identify what triggers the symptoms of my mental illness	1	2	3	4	5
10	I can help myself become better	1	2	3	4	5
11	Fear doesn't stop me from living the way I want to	1	2	3	4	5
12	I know that there are mental health services that do help me	1	2	3	4	5
13	There are things that I can do that help me deal with unwanted symptoms	1	2	3	4	5
14	I can handle what happens in my life	1	2	3	4	5
15	I like myself	1	2	3	4	5
16	If people really knew me, they would like me	1	2	3	4	5
17	I am a better person than before my experience with mental illness	1	2	3	4	5
18	Although my symptoms may get worse, I know I can handle it	1	2	3	4	5
19	If I keep trying, I will continue to get better	1	2	3	4	5
20	I have an idea of who I want to	1	2	3	4	5

	become					
21	Things happen for a reason	1	2	3	4	5
22	Something good will eventually happen	1	2	3	4	5
23	I am the person most responsible for my own improvement	1	2	3	4	5
24	I'm hopeful about the future	1	2	3	4	5
25	I continue to have new interests	1	2	3	4	5
26	It is important to have fun	1	2	3	4	5
27	Coping with my mental illness is no longer the main focus of my life	1	2	3	4	5
28	My symptoms interfere less and less with my life	1	2	3	4	5
29	My symptoms seem to be a problem for shorter periods of time each time they occur	1	2	3	4	5
30	I know when to ask for help	1	2	3	4	5
31	I am willing to ask for help	1	2	3	4	5
32	I ask for help, when I need it	1	2	3	4	5
33	Being able to work is important to me	1	2	3	4	5
34	I know what helps me get better	1	2	3	4	5
35	I can learn from my mistakes	1	2	3	4	5
36	I can handle stress	1	2	3	4	5
37	I have people I can count on	1	2	3	4	5
38	I can identify the early warning signs of becoming sick	1	2	3	4	5
39	Even when I don't believe in myself, other people do	1	2	3	4	5
40	It is important to have a variety of friends	1	2	3	4	5
41	It is important to have healthy habits	1	2	3	4	5

APPENDIX H

SERVICE ENGAGEMENT SCALE (SES)

Service Engagement Scale (SES)

		Not at all or Rarely	Sometimes	Often	Most of the Time
1	The client seems to make it difficult to arrange appointments	0	1	2	3
2	When a visit is arranged, the client is available	0	1	2	3
3	The client seems to avoid making appointments	0	1	2	3
4	If you offer advice, does the client usually resist it?	0	1	2	3
5	The client takes an active part in the setting of goals or treatment plans	0	1	2	3
6	The client actively participates in managing his/her illness	0	1	2	3
7	The client seeks help when assistance is needed	0	1	2	3
8	The client finds it difficult to ask for help	0	1	2	3
9	The client seeks help to prevent a crisis	0	1	2	3
10	The client does not actively seek help	0	1	2	3
11	The client agrees to take prescribed medication	0	1	2	3
12	The client is clear about what medications he/she is taking and why	0	1	2	3
13	The client refuses to co-operate with treatment	0	1	2	3
14	The client has difficulty in adhering to the prescribed medication	0	1	2	3

APPENDIX I

BEHAVIORAL AND CRIMINAL HISTORY FORM

Behavioral and Criminal History Form

1. Have you been arrested in the past year? Y/N
If yes, how many times? _____
Please provide the following information for each of the reported arrests.
Felony, Misdemeanor or Municipal (pick one)
Violent? Y/N
If no, have you ever been arrested for a violent offense? Y/N
Drug related? Y/N
If no, have you ever been arrested for a drug related crime? Y/N
How many times have you been arrested over your lifetime? _____
3. Have you ever been incarcerated at a jail facility? Y/N
If yes, how many days have you spent in jail over the past year? _____
How many days have you spent in jail over your lifetime? _____
4. Have you ever been incarcerated at a prison facility? Y/N
If yes, how many days have you spent in prison over the past year? _____
How many days have you spent in prison over your lifetime? _____
5. Are you currently on parole? Y/N
If yes, how many violations have you had in the past year? _____
6. Are you currently on probation? Y/N
If yes, how many violations have you had in the past year? _____
7. Have you participated in a drug court in the past year? Y/N
8. Have you participated in a mental health court in the past year? Y/N
9. In the past year, have you done any of the following:
hung out with people involved in criminal activities? Y/N
used illegal drugs? Y/N
used prescription drugs not prescribed to you? Y/N
gotten into a physical fight? Y/N
threatened to hurt other people? Y/N
hit people when you were angry? Y/N
been physically abused? Y/N
been homeless? Y/N
experienced intense feelings of anger or rage? Y/N
done things impulsively that got you in trouble? Y/N
been sexually abused? Y/N
participated in gambling? Y/N
shoplifted? Y/N
not gotten along with family members? Y/N
harmed yourself? Y/N
not had any friends? Y/N

APPENDIX J

FILE REVIEW FORM

Participant Number _____

1) Date of Enrollment in ACT/FACT Program: _____

2) Program Referral Source: _____

3) Current Mental Health Diagnoses:

Axis I: _____

Axis II: _____

4) Number of Appointments Scheduled in the Past 3 Months: ____

5) Number of Appointments Attended in the Past 3 Months: ____

6) Number of Arrests in the Past 3 Months: _____

7) Number of Arrests in the Past Year: _____

8) Number of Lifetime (since age 18) Arrests: _____

9) Number of Psychiatric Hospitalizations in the Past 3 Months: ____

10) Number of Psychiatric Hospitalizations in the Past Year: ____

11) Number of Lifetime (since age 18) Psychiatric

Hospitalizations: _____

12) Military History: Y N

APPENDIX K

PROGRAM INFORMATION QUESTIONNAIRE

1. What is the name of the community mental health facility that you are completing this survey for? _____
2. What is the name of the treatment program at your community mental health facility that you are completing this survey for? _____
3. How many years has the program (not the mental health center) been in operation?

4. What is the total number of consumers enrolled in the program? _____
5. Please describe any inclusion or exclusion criteria used to determine eligibility for enrollment into the program. _____
6. Please indicate the number of Male and Female consumers enrolled in the program.
____Male
____Female
____Transgender
7. What percentage of your consumers fall into each of the following racial/ethnic categories.
____American Indian or Alaska Native
____Asian
____Native Hawaiian or Other Pacific Islander
____Black or African American
____Caucasian
____Hispanic or Latino
____Other

8. What percentage of your consumers are diagnosed with the following mental health disorders.

_____Schizophrenia

_____Schizoaffective Disorder

_____Major Depressive Disorder

_____Bipolar I or II

_____ Posttraumatic Stress Disorder

_____Antisocial Personality Disorder

9. What is the average length of enrollment for the consumers in the program before being discharged? _____

10. How are consumers most commonly referred to the program? _____

11. How is the program funded (select all that apply)?

_____Private

_____Government

_____Grant

_____Other (Please explain: _____)

12. Which of the following types of service providers are involved in the care of the consumers involved in the program? (Select all that apply.)

_____Psychologist _____Psychiatrist _____Nurse _____Social Workers

_____Therapists _____Case Managers _____Substance Abuse Counselors

_____Peer Support Specialists _____Medical Doctors

_____Other (Please explain: _____)

13. Is the program directly affiliated with any of the following? (Select all that apply.)

_____ Correctional Facility (i.e., jail, prison)

_____ Mental Health Court

_____ Drug Court

_____ Criminal Justice Diversion Program

_____ Other (Please explain: _____)

APPENDIX L
RECRUITMENT LETTER

We are currently conducting a study with the consumers at _____ (facility name) and would like to invite you to participate. The study is looking at how people diagnosed with a mental illness think about situations and other people, and the type of symptoms they experience. To participate, you will be asked to complete a survey asking some general questions about yourself, like your age, gender, race, marital status, etc. We would also ask you specific questions about your thoughts and feelings, behaviors you may or may not engage in, your mental health treatment, the symptoms you experience, and your mental health and legal history. The survey is estimated to take approximately 1 hour and you will receive \$10 as compensation for your time.

Researchers will be at _____ (facility name) from 8 am to 5 pm on Wednesday, _____ (date), Thursday, _____ (date), and Friday, _____ (date).

If you are interested in participating in this study or if you have any questions, please call 806-742-3711 ext. 407 or email us at nicole.gross@ttu.edu.

We hope that you can help us understand more about the treatment needs of people with mental illness. We look forward to the opportunity to meet with you.

Sincerely,

Dr. Robert Morgan
John G. Skelton, Jr. Regents Endowed Professor in Psychology
Department of Psychology
Texas Tech University

and

Nicole Gross, M.A.
Doctoral Student Researcher
Department of Psychology
Texas Tech University

APPENDIX M

DATA COLLECTION FIELD LOG

Data Collection Site	Comp.	Subj.	Paid	Notes
	16	1		
	17	2		
	18	3		
	19	4		
	20	5		
	16	6		
	17	7		
	18	8		
	19	9		
	20	10		
	16	11		
	17	12		
	18	13		
	19	14		
	20	15		

APPENDIX N

TABLES

Table 1
Internal Consistency of the PICTS-L-SF, BSI, SES, and RAS Scales

Measure		Measure	
<i>Scales</i>	<i>Cronbach's Alpha</i>	<i>Scales</i>	<i>Cronbach's Alpha</i>
PICTS-L-SF		BSI	
<i>Confusion</i>	.493	<i>Overall</i>	.977
<i>Defensiveness</i>	.692	SES	
<i>Mollification</i>	.309	<i>Availability</i>	.740
<i>Cutoff</i>	.836	<i>Collaboration</i>	.735
<i>Entitlement</i>	.708	<i>Help Seeking</i>	.644
<i>Sentimentality</i>	---	<i>Treatment Adherence</i>	.577
<i>Superoptimism</i>	.741	<i>Total</i>	.868
<i>Cognitive Indolence</i>	.756	RAS	
<i>Discontinuity</i>	.795	<i>PCH</i>	.873
<i>Current CT</i>	.903	<i>WAH</i>	.858
<i>Historical CT</i>	.855	<i>GSO</i>	.828
<i>Problem Avoidance</i>	.868	<i>RO</i>	.751
<i>Interpersonal Host.</i>	.611	<i>DS</i>	.728
<i>S-A/D</i>	.821	<i>Total</i>	.948
<i>DOH</i>	---		
<i>Proactive CT</i>	.869		
<i>Reactive CT</i>	.913		
<i>General CT</i>	.935		

Note. PICTS-L-SF = Psychological Inventory of Criminal Thinking Styles – Layperson Edition – Short Form. BSI = Brief Symptom Inventory. SES = Service Engagement Scale. RAS = Recovery Assessment Scale. *CT* = Criminal Thinking. *Interpersonal Host.* = Interpersonal Hostility. *S-A/D* = Self-Assertion/Deception. *DOH* = Denial of Harm to Others. *PCH* = Personal Confidence and Hope. *WAH* = Willingness to Ask for Help. *GSO* = Goal and Success Orientation. *RO* = Reliance on Others. *DS* = No Domination by Symptoms.

Table 2

Means, Standard Deviations, and Ranges of the PICTS-L-SF Scales for the ACT and FACT samples

PICTS-L-SF Scales	Overall			ACT			FACT		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
Confusion	56.55	11.90	39-76	56.73	11.70	39-76	55.71	12.97	39-76
Defensiveness	60.31	12.65	26-81	60.31	12.40	31-76	60.31	13.94	26-39
Mollification	50.48	13.29	37-89	50.05	13.35	37-89	52.38	13.08	37-88
Cutoff	51.88	9.59	33-80	51.84	9.62	33-80	52.07	9.67	38-70
Entitlement	51.41	10.20	34-85	51.48	10.49	34-85	51.10	8.99	38-74
Sentimentality	36.26	17.57	24-88	37.09	17.93	24-88	32.45	15.59	24-83
Superoptimism	41.80	10.95	31-75	41.87	11.20	31-75	41.52	9.97	31-74
Cognitive Indolence	47.75	9.57	31-74	47.94	9.36	31-74	46.90	10.57	31-70
Discontinuity	51.15	9.85	32-79	51.46	9.91	32-79	49.76	9.62	32-68
Current CT	51.94	9.34	33-79	52.20	9.32	33-79	50.79	9.51	38-72
Historical CT	46.45	8.35	33-71	46.32	8.60	33-71	47.03	7.29	36-61
Problem Avoidance	52.90	9.19	34-81	53.21	9.12	34-81	51.52	9.54	38-74
Interpersonal Host.	53.41	14.20	42-95	53.83	14.90	42-95	51.59	10.70	42-73
S-A/D	48.75	8.87	35-79	48.49	9.09	35-79	49.86	7.88	38-65
DOH	45.43	20.34	22-81	45.43	20.15	22-81	45.39	21.52	22-81
Proactive CT	48.89	9.27	33-79	48.75	9.55	33-79	49.48	8.09	38-63
Reactive CT	52.48	9.32	32-81	52.66	9.33	32-81	51.69	9.37	37-73
General CT	47.41	11.02	28-83	47.59	11.29	28-83	46.69	9.94	31-64

Note. PICTS-L-SF = Psychological Inventory of Criminal Thinking Styles – Layperson Edition – Short Form. ACT = Assertive Community Treatment. FACT = Forensic Assertive Community Treatment. *M* = Mean. *SD* = Standard Deviation. CT = Criminal Thinking. Interpersonal Host. = Interpersonal Hostility. S-A/D = Self-Assertion/Deception. DOH = Denial of Harm to Others.

Table 3

Means, Standard Deviations, and Ranges of PICTS-L-SF Scales for the CJ and Non-CJ involved samples based on history of arrest

PICTS-L-SF Scales	CJ Involved			Non-CJ Involved		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
Confusion	56.80	11.87	39-76	55.93	12.44	39-73
Defensiveness	59.80	12.93	26-76	65.07	8.29	50-76
Mollification	50.77	13.45	37-89	47.86	12.13	37-73
Cutoff	52.42	9.62	33-80	47.43	8.50	36-68
Entitlement	51.91	10.34	34-85	46.86	7.39	34-59
Sentimentality	37.09	17.99	24-88	29.07	11.72	24-64
Superoptimism	42.45	11.20	31-75	35.79	6.28	31-54
Cognitive Indolence	48.12	9.64	31-74	44.07	7.92	31-56
Discontinuity	51.40	9.83	32-79	49.00	10.37	32-64
Current Criminal Thinking	52.26	9.33	33-79	49.21	9.37	33-61
Historical Criminal Thinking	47.04	8.40	33-71	41.07	6.11	33-57
Problem Avoidance	53.20	9.14	34-81	50.29	9.56	34-64
Interpersonal Hostility	53.80	14.39	42-95	48.36	9.46	42-71
Self-Assertion/Deception	49.38	8.93	35-79	43.43	6.56	35-60
Denial of Harm to Others	45.73	20.34	22-81	42.57	21.04	22-81
Proactive Criminal Thinking	49.52	9.38	33-79	43.50	6.33	33-59
Reactive Criminal Thinking	52.88	9.32	32-81	49.00	8.81	35-64
General Criminal Thinking	48.04	11.21	28-83	42.00	7.29	30-59

Note. PICTS-L-SF = Psychological Inventory of Criminal Thinking Styles – Layperson Edition – Short Form. CJ = Criminal Justice. *M* = Mean. *SD* = Standard Deviation.

Table 4

Significant Demographic Differences between those Enrolled in ACT and FACT programs, Those With and Without a History of Arrests, and Those With and Without a History of Jail Incarcerations

	Program Type			
	ACT		FACT	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	43.76	11.29	38.02	10.51
Months in Treatment	74.61	82.53	19.32	15.71
Primary Diagnosis	<i>n</i>		<i>n</i>	
Schizophrenia	21		14	
Schizoaffective	57		3	
Bipolar I or II	33		11	
MDD	19		12	
Mood NOS	11		2	
Psychotic NOS	6		5	
PTSD	5		0	
Anxiety	3		0	
Other	7		2	
	History of Arrests			
	Yes		No	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Months in Treatment	58.14	73.04	103.76	99.43
Gender	<i>n</i>		<i>n</i>	
Male	124		7	
Female	72		13	
Transgendered	3		0	

Table 4 (continued)

	History of Jail Incarcerations			
	Yes		No	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
	<i>n</i>		<i>N</i>	
Mo. in Txt	50.39	66.86	103.71	91.85
Race				
American Indian or Alaska Native	6		6	
Asian	1		0	
Native Hawaiian or Pacific Islander	1		0	
Black or African American	62		5	
Caucasian	80		10	
Hispanic or Latino/a	13		3	
Other	7		0	

Note. *M* = mean. *SD* = Standard Deviation. *n* = Number of Participants. MDD = Major Depressive Disorder. NOS = Not Otherwise Specified.

Table 5

Means, Standard Deviations and Ranges of BSI, SES, and RAS scores for the overall sample

Measure	<i>Scales</i>	<i>M</i>	<i>SD</i>	<i>Range</i>
BSI	<i>GSI</i>	47.63	11.58	30-78
	<i>PST</i>	51.07	13.76	30-78
	<i>PSDI</i>	44.97	10.80	30-77
SES	<i>Availability</i>	2.72	1.73	1-7
	<i>Collaboration</i>	4.74	1.67	2-8
	<i>Help Seeking</i>	5.13	1.83	2-10
	<i>Treatment Adherence</i>	3.70	1.85	2-8
	<i>Total</i>	16.28	5.86	7-32
RAS	<i>PCH</i>	33.44	6.59	14-45
	<i>WAH</i>	11.58	2.38	3-15
	<i>GSO</i>	19.76	3.92	5-25
	<i>RO</i>	14.86	3.32	1-20
	<i>DS</i>	9.47	2.86	3-15
	<i>Total</i>	153.2	26.80	4-205

Note. BSI = Brief Symptom Inventory. SES = Service Engagement Scale. RAS = Recovery Assessment Scale. *M* = Mean. *SD* = Standard Deviation. *GSI* = Global Severity Index. *PST* = Positive Symptoms Total. *PSDI* = Positive Symptoms Distress Index. *PCH* = Personal Confidence and Hope. *WAH* = Willingness to Ask for Help. *GSO* = Goal and Success Orientation. *RO* = Reliance on Others. *DS* = No Domination by Symptoms.

Table 6

Results from separate Linear Regressions (numbered) with Criminal Justice and Mental Health Variables Predicting General Criminal Thinking

Predictor Variable	<i>B</i>	<i>SE B</i>	β
1. SES Scales			
<i>Availability</i>	.014	.088	.032
<i>Treatment Adherence</i>	-.188	.107	-.293
<i>Collaboration</i>	.007	.018	.093
<i>Help Seeking</i>	.007	.015	.096
2. GSI	.152***	.019	.555
3. PST	.004***	.001	.562
4. RAS Scales			
<i>WAH</i>	-.001	.014	-.003
<i>GSO</i>	.019	.010	.161
<i>PCH</i>	-.039***	.007	-.575
<i>RO</i>	.006	.011	.042
<i>DS</i>	.005	.013	.029

Note. SES= Service Engagement Scale. GSI= Global Severity Index, PST = Positive Symptom Total. RAS = Recovery Assessment Scale. *WAH* = Willingness to Ask for Help. *GSO* = Goal and Success Orientation. *PCH* = Personal Confidence and Hope. *RO* = Reliance on Others. *DS* = No Domination by Symptoms. *B* = unstandardized regression coefficient. *SE B* = standard error of *B*. β = standardized regression coefficient.

*** $p < 0.001$.

Table 7

Separate Negative Binomial Regression Analyses (numbered) with Criminal Justice and Mental Health Count Variables Predicting General Criminal Thinking

Predictor Variable	Dependent Variables (separate analyses)	<i>B</i>	Wald's χ^2	95% CI	
				Lower	Upper
GCT	1. NA	.011	16.87***	.006	.017
	2. NPH	-.008	6.87**	-.014	-.002

Note. GCT = General Criminal Thinking Scale. NPH = Number of Lifetime Psychiatric Hospitalizations. NA = Number of Lifetime Arrests. *B* = unstandardized regression coefficient. Wald's χ^2 = Wald's Criterion Statistic. 95% C. = 95% confidence interval for the odds ratio value. ** $p < 0.01$, *** $p < 0.001$.

Table 8

Separate Negative Binomial Regression Analyses (numbered) with Criminal Justice and Mental Health Count Variables Predicting the Number of PICTS-L-SF Scale Elevations

Predictor Variable	Dependent Variables (separate analyses)	<i>B</i>	Wald's χ^2	95% CI	
				Lower	Upper
NumElev	1. NA	.024	9.29*	.009	.040
	2. NPH	-.021	2.88	-.046	.003

Note. *PICTS-L-SF* = Psychological Inventory of Criminal Thinking Styles – Layperson Edition – Short Form. NumElev = Number of PICTS-L-SF Scale Elevations. NPH = Number of Lifetime Psychiatric Hospitalizations. NA = Number of Lifetime Arrests. *B* = unstandardized regression coefficient. Wald's χ^2 = Wald's Criterion Statistic. 95% C.I. = 95% confidence interval for the odds ratio value. * $p < 0.05$.

APPENDIX O

FIGURES

Figure 1

Mean GCT scale score on the PICTS-L-SF by program type, arrest history, and history of jail incarcerations

Figure 2

Mean number of PICTS-L-SF scale elevations by program type, arrest history and history of jail incarcerations