Factors that Affect Treatment Compliance among Individuals with Mental Illness

Marsha Brown
Graduate Center, City University of New York

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Factors That Affect Treatment Compliance among Individuals with Mental Illness

by

Marsha D. Brown

A dissertation submitted to the Graduate Facility in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2015
The manuscript has been read and accepted for the
Graduate Faculty in Psychology in satisfaction of the
Dissertation requirements for the degree of Doctor of Philosophy

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Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK
Abstract

Factors That Affect Treatment Compliance among Individuals with Mental Illness

By

Marsha D. Brown

Advisor: Professor Elizabeth L. Jeglic

Approximately 6% of the American population suffers from a severe mental illness such as Schizophrenia, Bipolar Disorder, Major Depressive Disorder, Post-Traumatic Stress Disorder, and Obsessive-Compulsive Disorder. Treatment compliance in individuals with severe mental illness is imperative as without treatment these individuals may experience homelessness, unemployment, and a decreased life expectancy of up to 34 years. Consequently, researchers have increasingly examined factors that may affect overall compliance among these individuals, such as insight, social support, symptom severity, and substance abuse. However, many of these studies focus on compliance with prescribed medications and few examine compliance with recommended psychological treatment. The current study examined the effects of the aforementioned factors on treatment compliance among individuals with severe mental illness and substance use diagnoses. Defendants in an alternative-to-jail program were asked to complete a brief clinical interview and several self-report measures examining insight, perceived social support, psychiatric symptom severity, and substance use. Each individual’s record was then examined at 3- and 6-month follow-up periods to determine the number of re-arrests, re-hospitalizations, and program removals they had experienced. Alcohol addiction severity and social support at intake were found to be significant predictors of treatment adherence at six-month follow-up. These findings
will be discussed as they pertain to the implications for identifying and understanding
the nature of the relationship between the client-centered factors that most directly
impact treatment compliance among individuals with severe and persistent mental
illness.
Acknowledgements

I would like to thank my mentor, Dr. Elizabeth Jeglic, for many years of support, guidance, and patience. I would also like to thank the doctoral faculty of my program for giving me a great deal of encouragement throughout my graduate school career. Finally, I would like to thank my family and friends for always being there for me and providing me with an incredibly strong network of support. I finally got through this process; it’s time to celebrate!
Table of Contents

Title.................................................................................................................................i
Copyright.......................................................................................................................ii
Approval.........................................................................................................................iii
Abstract.........................................................................................................................iv
Acknowledgements......................................................................................................vi
Table of Contents.........................................................................................................vii
List of Tables................................................................................................................ix
List of Appendices.........................................................................................................xi
Chapter 1: Introduction.................................................................................................1
  Severe Mental Illness in the United States.................................................................1
  Patient Insight............................................................................................................3
  Social Support...........................................................................................................6
  Psychiatric Symptom Severity..................................................................................8
  Substance Use...........................................................................................................10
  Statement of the Problem.........................................................................................13
  Hypotheses...............................................................................................................14
Chapter 2: Methods.....................................................................................................16
  Participants..............................................................................................................16
  Procedure.................................................................................................................18
  Materials..................................................................................................................21
Chapter 3: Results......................................................................................................26
Chapter 4: Discussion..................................................................................................41
# List of Tables

Table 1  Gender and Race  .......................................................... 17
Table 2  Age, Education, First Contact with a Mental Health Professional (MHP) 18
Table 3  Marital Status ............................................................... 18
Table 4  Means and Standard Deviations of Assessment Measures ............. 26
Table 5  Correlational Relationships between Predictor Variables .......... 27
Table 6  Correlational Relationships between Three-Month Outcomes and Measures .......................................................... 28
Table 7  Correlational Relationships between Six-Month Outcomes and Measures .......................................................... 28
Table 8  Frequency Distribution of Outcome Variables at Three- and Six-Month Follow-Up .......................................................... 29
Table 9  Logistic Regression Analysis: Predicting Outcome at Three and Six Months with the BIS .......................................................... 31
Table 10 Logistic Regression Analysis: Predicting Outcome at Three and Six Months with the SAIQ .......................................................... 32
Table 11 Logistic Regression Analysis: Predicting Outcome at Three and Six Months with the SUMD .......................................................... 32
Table 12 Linear Regression Analysis: Insight as a Predictor of Outcome at Three and Six Months .......................................................... 33
Table 13 Logistic Regression Analysis: Addiction Severity as a Predictor of Outcome at Three Months .......................................................... 34
Table 14 Logistic Regression Analysis: Addiction Severity as a Predictor of Outcome at Six Months .......................................................... 35
Table 15 Linear Regression Analysis: Addiction Severity as a Predictor of
Table 16  Linear Regression Analysis: Insight and Addiction Severity as a Predictor of Adherence at Three and Six Months

Table 17  Linear Regression Analysis: Combined Outcome Variables as Predictors of Adherence at Three and Six Months

Table 18  Logistic Regression Analysis: Predictors of Outcome at Three Months

Table 19  Logistic Regression Analysis: Predictors of Outcome at Six Months
## List of Appendices

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A</td>
<td>Insight Scale</td>
<td>52</td>
</tr>
<tr>
<td>Appendix B</td>
<td>Scale to Assess unawareness of Mental Disorder – Revised</td>
<td>53</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Self-Appraisal of Illness Questionnaire</td>
<td>72</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Addiction Severity Index – Self Report</td>
<td>74</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Colorado Symptom Index</td>
<td>79</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Multidimensional Scale of Perceived Social Support</td>
<td>81</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction

Factors That Affect Treatment Compliance in Individuals with Mental Illness

Severe Mental Illness in the United States

The National Alliance on Mental Illness (NAMI) estimates that approximately 57.7 million adults in the United States (U.S.) suffer from a severe mental illness (www.nami.org). Of the total U.S. adult population, it is estimated that approximately 1% have Schizophrenia, 2.6% have Bipolar Disorder, 7% have Major Depressive Disorder, and 18% have anxiety-related disorders such as Post-Traumatic Stress disorder (PTSD) and Obsessive-Compulsive Disorder (OCD). Although disorders such as PTSD and OCD can be severe and persistent in nature, Schizophrenia, Bipolar Disorder, and Major Depressive Disorder are generally classified as severe and persistent mental illnesses (SPMI) and are more extensively covered in the literature. Additionally, research examining SPMI typically examines the above disorders; therefore, they will be the focus of this study.

When compared to a non-mentally ill population, individuals with SPMI have an increased likelihood of having a chronic medical condition (Adler, 1991; Carney, et al., 2006; Colton & Manderscheid, 2006; Sokal, et al., 2004), being unemployed (Cook, 2006; Goldberg, et al., 2008; Mueser, 2001), utilizing homeless services and/or being homeless (nami.org; Fischer & Breakey, 1991; Martens, 2001), and a decreased life expectancy of up to 34 years (Colton & Manderscheid, 2006; Dembling, 2001; Dickey, et al., 2004). For individuals with SPMI, getting treatment is very important (Substance Abuse and Mental Health Services Administration; NAMI) and treatment adherence is imperative to maintain stability in their lives, as non-adherence can result in
decompensation, frequent hospitalizations, disruptions in their lives, and the lives of their family and friends (Casper & Regan, 1994; O'Toole, et al., 2005; Steinhart, et al., 1999), and increased contact with the criminal justice system (Glaze & James, 2006; Lurigio, 2011; Steadman, Osher, Robbins, Case, & Samuels, 2009), especially if the individual is homeless (Roy, Crocker, Nicholls, Latimer, & Ayllon, 2014). Consequently there has been a growing body of research examining treatment compliance among individuals with mental illness.

According to Adam and Howe (1993), treatment compliance is defined as how closely and fully a patient’s behavior follows medical or health advice. In many of the studies focusing on treatment compliance, researchers have investigated the degree to which participants adhere to prescribed psychiatric medications and they relate that adherence to factors such as insight, symptom severity, and social support. It is worth noting that many of these studies use the terms compliance and adherence interchangeably; however, both terms refer to the act of following medical or health advice.

In an effort to ultimately increase adherence, researchers have examined both the static (i.e., fixed) and dynamic (i.e., variable) factors that most strongly affect overall compliance in individuals with mental illness. Studies have explored numerous static variables such as gender (Atwood & Beck, 1985; Buchanan, 1992), ethnic minority status (Tunnicliffe, Harrison, & Standen, 1992), age of illness onset (Leclerc, et al., 2013), type of psychotic symptoms (Duncan & Rogers, 1998), and level of formal education (Barkof, et al., 2011; Leclerc, et al., 2013). While some of these variables can affect compliance, they cannot be changed with intervention. Several
comprehensive research reviews have found that a number of dynamic factors, including insight, psychopathology, medication side effects, therapeutic alliance, social support, and substance use can also impact treatment adherence (Barkof, et al., 2011; Leclerc, et al., 2013). However, of all the factors examined in the current study (insight, addiction severity, psychiatric symptom severity, and social support) are patient-focused factors which are amenable to change and which appear to be the most important determinants of whether an individual will adhere to mental health professionals’ advice regarding treatment regimens (Buckley, et al., 2007; Coldham, et al., 2002; Dawson & Mullen, 2008; Dixon, McNary, & Lehman, 1995; Duffy, 2008; Duncan & Rogers, 1998; Emsley, et al., 2008; Hunt, Bergen, & Bashir, 2002; Pinikahana, et al., 2002; Sipos, et al., 2001). These factors are dynamic in nature and thus can potentially be targeted in treatment.

**Patient Insight**

Level of patient insight is a crucial determinant of whether a patient will comply with the advice of mental health professionals (Buckley, et al., 2007; Coldham, et al., 2002; Dawson & Mullen, 2008; Emsley, et al., 2008; Pinikahana, et al., 2002; Sipos, et al., 2001). There are many aspects of insight including the extent to which an individual recognizes that he or she has a mental illness which interferes with cognitive functioning, one's ability to identify certain symptoms/experiences as manifestations of mental illness, and one's ability to recognize the need for medication to manage such symptoms. Research suggests that possession of insight occurs on a continuum and fluctuates over the course of one’s illness (Arango & Amador, 2011; Koren, Viksman, Giuliano, & Seidman, 2013; Quee, et al., 2011). The current research on patients with
SPMI suggests that patients who lack or have lower levels of insight, specifically those who do not recognize they have a SPMI that is in need of treatment, are less likely to comply with recommended treatment (Dawson & Mullen, 2008; Emsley, Chilza, & Schoeman, 2008; Jonsdottir, et al., 2013; Pinikahana, et al., 2002; Segarra, et al., 2012) and may experience greater symptom severity (Segarra, et al., 2010; Sipos, et al., 2001). Olfson, Marcus, Wilk, and West (2006) surveyed psychiatrists who treat patients with schizophrenia and concluded that, according to the treating psychiatrists, the majority of patients who were non-compliant with prescribed medications refused to take their medications as a result of low levels of insight. Although the authors considered other variables such as social support and substance abuse, the examination of these variables was limited as social support was defined only as family involvement and substance abuse was only of interest if it was the primary or sole reason for non-adherence to treatment. Sevy, Nathanson, Visweswaraiah, and Amador (2004) also examined patients with schizophrenia and found a relationship between lack of insight and symptom severity, such that patients with lower levels of insight experienced more severe symptoms.

While the relationship between schizophrenia and low levels of insight into one’s mental illness has been extensively documented (Buckley, et al., 2007; Coldham, et al., 2002; Dawson & Mullen, 2008; Emsley, et al., 2008; Pinikahana, et al., 2002; Sipos, et al., 2001), research has also branched out to study insight in patients with other types of severe mental illnesses such as bipolar disorder, schizoaffective disorder, and unipolar depression. For example, Segarra and colleagues (2010) examined the predictive value of insight on medication adherence and clinical symptoms among patients with
schizophrenia and schizoaffective disorder and found that a higher level of insight at baseline predicted a patient’s clinical and functional status at the one-year follow-up, as well as their treatment adherence throughout the study for patients with both of the aforementioned disorders. Pini, Cassano, Dell’Osso, and Amador (2001) compared insight levels of patients with schizophrenia to those with schizoaffective disorder, bipolar disorder, and unipolar depression. The authors found that levels of insight among the patients with schizophrenia did not significantly differ from patients in the other groups. However, in another study Dell’Osso and colleagues (2002) examined insight levels in patients with full and mixed mania, bipolar depression, and unipolar depression and found that overall, none of the groups had high levels of insight, but patients with unipolar depression possessed the highest levels of insight while those with mania had the lowest levels of insight. The authors speculated that since poor insight predicts poor treatment adherence among patients with schizophrenia, so too may be the case among patients with unipolar and bipolar depression.

While level of patient insight may lead directly to medication compliance, other variables have been postulated to affect insight and thereby indirectly affect adherence to prescribed psychotropic medications. In 2001, Kamali, et al. studied treatment adherence, substance use, and symptom severity among patients with schizophrenia and found that patients who were regularly compliant with prescribed medications had significantly higher scores on insight measures than patients who were irregularly compliant. In this study, symptom severity was not a significant predictor of adherence, however, the authors did find that those participants with a greater number of positive symptoms were significantly less likely to be treatment adherent. When participants
with comorbid substance use were removed from the data analysis, a strong significant relationship between insight and adherence was found. However, when participants with substance abuse were included, the relationship between insight and adherence was much less clear. This suggests the existence of a complex relationship between insight, substance abuse, and treatment adherence. The exact nature and strength of this relationship remains unclear and, therefore, further exploration is imperative.

**Social Support**

Another important determinant of treatment adherence among those with SPMI is social support. Social support refers to interpersonal relationships between a patient and family members, friends, counselors, therapists, doctors, and other treatment providers. Procidano and Heller defined social support as, “the extent to which an individual believes that his/her need for support, information, and feedback are fulfilled” (1983, pg. 2). Numerous studies have linked poor social support among individuals with mental illness to medication non-adherence (Battaglioli-Denero, 2007; Kampman, et al., 2002; Rabinovitch, et al., 2009; Seo & Min, 2006) and an increased likelihood of being court-mandated to treatment (Swartz, Swanson, Kim, & Petrila, 2006).

Interestingly, social support may not only be a determinant in treatment adherence, but it may also have an impact on treatment trajectory. Joesch and colleagues (2013) examined the impact of an evidence-based treatment model for depression and anxiety. The authors concluded that social support was actually a protective factor, as they found that participants with higher levels of social support were likelier to experience significant recovery from symptoms of depression and anxiety and those with lower levels of social support took a greater amount of time to recover and
experienced lower levels of symptom relief. These results highlight the impact of social support in not only improving individuals’ treatment adherence, but improving their level of symptom relief and decreasing the time it takes clients to return to baseline functioning.

Other studies have looked at the role of social support in predicting treatment outcomes unrelated to medication adherence among individuals with primary substance use concerns and some symptoms of mental illness. Dodge and Potocky (2000) sampled women enrolled in a residential substance abuse treatment program for 12 months and examined the relationships between social support, addiction severity, and depressive symptoms. The authors determined that social support predicted level of depression such that those individuals with lower social support experienced significantly higher levels of depressive symptoms. The authors concluded that social support was a stronger predictor and played a significant role in treatment outcome. Similarly, Comfort, Sockloff, Loverro, and Kaltenbach (2003) sampled women enrolled in residential or outpatient substance abuse treatment for a minimum of three months. The authors examined the relationships between treatment outcomes and a number of predictor variables including social support and depressive symptoms. Participants were assessed at four separate periods: Intake, six months after program enrollment, 10 months after program discharge, and 12 months after program discharge. The authors determined that, for participants enrolled in outpatient treatment, overall level of social support at intake predicted abstinence from substance use, level of treatment engagement, and retention in treatment at six months. During the 10- and 12-month post-discharge periods, social support remained a significant predictor of abstinence,
however, the source from which the support was received was a key factor (i.e., from non-substance-using family, friends, and acquaintances). Increased support for daily needs was also a significant predictor of continued abstinence at 10 and 12 months for outpatient participants. Interestingly, the authors found very different results for participants enrolled in residential treatment. For this group, level of social support and depressive symptoms at intake were not found to be related to treatment outcomes at six months. However, level of support with parenting duties was a significant predictor during the post-discharge assessment periods. Authors concluded that social support does indeed play an important role in treatment outcome, but hypothesized that perhaps the nature of its role and importance changes, depending on treatment setting.

The preceding studies seem to suggest that, while social support does appear to play an important role in overall treatment adherence, the exact nature of its role, impact on types of treatment, and relationship with variables such as psychiatric symptom severity necessitates further investigation.

**Psychiatric Symptom Severity**

Research has established a relationship between psychiatric symptom severity and treatment adherence (Duncan & Rogers, 1998; Macpherson & Jerrom, 1997; Tsang et al., 2010), such that as the severity of mental illness symptoms increases, treatment adherence decreases (Donohoe, et al., 2001; Kampman & Lehtinen, 1999; Kampman, et al., 2002; Tsang et al., 2010). Among patients with Schizophrenia, those with more severe positive and negative symptoms may be less likely to comply with recommended treatment (Macpherson & Jerrom, 1997).
Among patients with a SPMI other than Schizophrenia, more severe symptoms may be related to better compliance. For example, Sirey and colleagues (2001) sampled depressed patients and found that those who rated their symptoms as more severe were more likely to be compliant with treatment. Similarly, Demyttenaere, and colleagues (2008) found that, within their sample of depressed patients, those with more severe symptoms were more likely to take their medications regularly and complete treatment and concluded that, for clients with depression, increased psychiatric symptom severity is related to a higher likelihood of treatment compliance.

One study, which examined medication compliance among patients with SPMI other than schizophrenia, failed to find a significant relationship between symptom severity and medication compliance (Duffy, 2008). Duffy (2008) found that more severe symptoms did not correlate with decreased medication compliance. The author noted that a majority of the sample were compliant with medications, which may have affected the existence of a relationship between psychiatric symptom severity and treatment adherence, because patients' medication adherence may have lessened the presence of symptoms, thus making it difficult to ascertain the exact nature of the relationship between these two variables.

However there is some evidence that the relationship between symptom severity and adherence is not linear. For example, Macpherson and Jerrom (1997) assessed patients’ psychiatric symptom severity and insight and determined that those patients with more severe symptoms and lower levels of insight were less likely to comply with treatment, suggesting that the relationship between symptom severity and treatment adherence may be moderated by insight. Overall, research suggests that psychiatric
symptom severity does play a vital role in treatment compliance. However, further investigation is needed to determine the ways in which this particular variable interacts with other dynamic variables to determine whether an individual with SPMI will comply with recommended treatment.

**Substance Use**

Current research estimates show that between 50% and 90% of individuals with mental illnesses in general have co-occurring substance use issues (Albanese & Pies, 2004; Altindag, Yanik, & Nebioglu, 2006; Clark, 2001; Drake, et al., 2001; Leahy, 2007; McDonell, et al., 2013; McKowen, Frye, & Gitlin, 2005; Pinikahana, et al., 2002), which have been linked to treatment non-adherence (Battaglioli-Denero, 2007; Casper & Regan, 1993; Heyscue, Levin, & Merrick, 1998; Jonsdottir, et al., 2013; Smith, Barzman, & Pristach, 1997). Further, individuals with mental illness were found to abuse substances at significantly higher rates than the general population (Lev-Ran, Imtiaz, Rehm, & Le Foll, 2013). Swendsen, et al., 2010)

Comorbid substance use among those with mental illness has been found to be strongly positively correlated with negative outcomes including treatment non-adherence (Battaglioli-Denero, 2007; Casper & Regan, 1993; Heyscue, Levin, & Merrick, 1998; Sender-Galloway & Simeon, 2013; Smith, Barzman, & Pristach, 1997). Patients with comorbid mental illness and substance use disorder have lower rates of treatment completion and lower treatment satisfaction scores than patients with mental illness only (Primm, et al., 2000). Additionally, when compared to individuals with only SPMI, individuals with both a severe mental illness and a co-occurring substance use disorder may experience worse psychosocial adjustment, a higher rate of
hospitalization, more psychotic relapses, and worse short-term outcomes (Drake, Mueser, Clark, & Wallach, 1996). Furthermore, co-occurring substance use has been linked to other negative outcomes such as increased likelihood of violent behavior, mental illness relapse, lack of housing, a greater likelihood of substance use relapse, and greater utilization of substance abuse services (Dixon, McNeary, & Lehman, 1998; Drake, et al., 2001; Sender-Galloway & Simeon, 2013). The negative outcomes of patients with a dual diagnosis have implications for the use of mental health and substance abuse resources. Strakowski and colleagues (1998) followed newly diagnosed patients with either Bipolar Disorder or Major Depressive Disorder with psychotic features for a period of one year. They found that patients who abused substances had poorer treatment adherence and experienced a longer wait for symptom relief once they did comply with treatment. In another study, Clark, Samnaliev, and McGovern (2007) investigated the use of mental health resources in five state Medicaid programs and found that individuals with both a severe mental illness and a substance abuse disorder used the Emergency Department, inpatient psychiatric facilities, and outpatient psychiatric facilities at a significantly higher rate than did individuals with mental illness alone. More recently, Sender-Galloway and Clark (2013) studied forensic patients discharged from a psychiatric hospital and found that those individuals with comorbid substance use were significantly more likely to be non-compliant with medications, miss scheduled appointments, and engage in aggressive and/or disruptive behavior as compared to individuals with SPMI and no co-occurring substance use disorder. Participants in this study were also more likely to have difficulty managing their activities of daily living (e.g., showering and eating) if they had
comorbid substance use issues. The Sender-Galloway and Clark study further illustrates the complexity added by co-morbid substance use when attempting to understand treatment compliance among a dual diagnosis population.

The research to date suggests that co-morbid substance use negatively affects treatment outcome among patients with mental illness throughout the course of their illness and a large proportion of poor treatment adherence among these patients can be attributed to substance use. Therefore, it is imperative to consider the role of substances when investigating factors that affect treatment adherence. What research in this area to date has failed to determine is the amount of its effects and exactly how it affects factors such as insight, symptom severity, social support, and overall treatment adherence.

Many studies focusing on factors affecting treatment adherence in patients with mental illness fail to consider the effects of substance abuse. Those studies that do consider the impact of substances have yielded interesting and alarming results. For example, some have found that patients with mental illness and substance abuse have less social support than those with mental illness alone (Dixon, McNary, & Lehman, 1995; Van Dorn, et al., 2006). Kamali and colleagues (2001) studied insight in patients with Schizophrenia and found that when they included patients with comorbid substance abuse in their analysis, they could not detect any clear and explainable relationship between insight and adherence. These findings further suggest that when examining factors affecting treatment adherence, substance abuse should be considered, as it appears to share a complex relationship with the other variables of interest.
Statement of the Problem

Most of the current research in the area of treatment compliance examines compliance as it pertains to a patient’s decision to take doctor-prescribed medications. However, for patients with SPMI, mental health professionals often also recommend attending group or individual therapy and substance abuse treatment as an integral part of treatment, depending on the patient’s needs (Randall & Finkelstein, 2007). Research shows strong support for the efficacy of treatments such as Cognitive Behavioral Therapy (CBT) and social skills training to manage and reduce psychotic and other symptoms, as well as to improve patients’ overall functioning (Lecomte, et al., 2008; Patelis-Siotia, 2001; Randall & Finkelstein, 2007). Some studies have even suggested that cognitive behavioral-based and similar interventions (such as treatment adherence therapy and motivational interviewing), in addition to psychopharmacological interventions, may actually enhance a patient’s insight and/or willingness to continue taking prescribed medications (Cavezza, Aurora, & Ogloff, 2013; Cochran, 1984; Rathod, Kingdon, Smith, & Trukington, 2005; Staring et al., 2010). Additionally, for many patients with illnesses such as bipolar disorder and schizophrenia, medication alone does not suffice to decrease symptoms and functional impairment and prevent relapse (Patelis-Siotia, 2001).

Consequently, compliance as it relates to prescribed medications, has been widely examined throughout the literature (Hunt, Bergen, & Bashir, 2002; Janssen, et al., 2006; Kamali, et al., 2001; Rosenberg, Bleiberg, Koscis, and Gross 2003; Ziguras, Klimidis, Lambert, & Jackson, 2001). Research in this area shows support for the powerful influences of factors such as patient insight into illness, addiction severity,
psychiatric symptom severity, and social support, on a patient’s compliance with prescribed medications. Although the aforementioned variables have been extensively examined in isolation, and in some cases in pairs or triplicate, no one study has examined the effects of all four variables. Furthermore, no one study has examined these four variables as they relate to adherence to treatment recommendations such as mental health and substance abuse programs.

Based on the preceding findings, the current study hypothesized that insight, addiction severity, psychiatric symptom severity, and perceived social support would be the driving factors in whether or not participants complied with court-mandated mental health and substance abuse treatment. The following hypotheses were proffered:

1. Level of participant insight will predict non-adherence to court-mandated treatment. Individuals with lower levels of insight will be less likely to recognize that they have a SPMI that requires treatment. Therefore, these individuals will be significantly less likely to comply with court-mandated treatment, as evidenced by a greater likelihood of experiencing rearrests, re-hospitalizations, positive toxicology results, rules violations, and program removals.

2. Level of addiction severity and insight will yield an interaction that will predict non-adherence better than either variable individually.

3. Level of insight, addiction severity, psychiatric symptom severity, and social support combined will best predict non-adherence and this model will account for the greatest variability in outcome. Specifically, individuals with lower levels of insight, greater addiction and psychiatric symptom severity, and less social support will be significantly less compliant with court-mandated treatment.
Chapter 2: Methods

Participants

Participants were defendants recruited from the Bronx Mental Health Court Program’s Treatment Alternatives for Safer Communities (TASC-MH). TASC-MH is a jail diversion program that offers an alternative to incarceration to defendants with mental illness and substance use issues. Defendants voluntarily agreed to engage in and complete treatment for mental illness and substance abuse, while being monitored by Bronx TASC-MH. Individuals ages 18 and older, who were offered and had accepted a treatment alternative to incarceration, were invited to participate in the current study.

Prior to data collection, an a priori power analysis using G*Power determined that a sample size of 55 participants was needed to achieve power at the .80 level for a multiple linear regression analysis, using the preceding four predictors. The final sample of the present study contained a total of 73 participants and a post hoc power analysis using G*Power determined a power of .90 had been achieved.

Demographic characteristics of the sample are displayed in Tables 1-3. The final sample (N=73) was comprised of 67.1% (n=49) male and 32.9% (n=24) female participants. Most individuals in the sample identified their ethnicity as Hispanic or Latino (52.1%; n= 38), while the remainder of the sample identified as Black (39.7%; n= 29), White (5.5%; n= 4), Mixed Race (1.4%; n=1), or Asian (1.4%; n= 1). The mean age of participants was 41.88 years (SD = 11.02 years) and the average level of education was 10.04 years (SD = 3.05). A majority of participants identified themselves as single, never married (68.5%; n=50), with few participants identifying as currently married.
(8.2%; n=6) or divorced (21.9%; n=16). First contact with a mental health professional occurred, on average at 20.46 years of age (SD = 11.64).

Table 1

*Gender and Race*

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Table 2

*Age, Education, First Contact with a Mental Health Professional (MHP)*

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Note. MHP = Mental Health Professional

Table 3

*Marital Status*

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<td>Single, never married</td>
<td>50</td>
</tr>
<tr>
<td>Divorced</td>
<td>16</td>
</tr>
<tr>
<td>Married</td>
<td>6</td>
</tr>
</tbody>
</table>

Procedure

Data collection took place between January 6, 2010 and July 21, 2014.

Participants were recruited from the Bronx TASC Mental Health Court Program (TASC-MH). TASC-MH is a voluntary diversion program that offers treatment alternatives to incarceration to Bronx County Court defendants who have mental illness and substance
use issues. Defendants who accept TASC-MH agree to receive treatment for mental illness and substance use in lieu of being detained in jail or prison. Individuals who accept TASC-MH are monitored by the courts for approximately 18-24 months, until the completion of their assigned treatment program. For the current study, English-speaking individuals who had accepted diversion through TASC-MH within the past 60 days were eligible for participation. Following the completion of intake, individuals who met eligibility requirements for the study were identified by the TASC-MH Research Coordinator. Identified individuals were then invited by the Principal Investigator, an RA, or a case manager from TASC-MH to participate in a study examining factors that affect treatment adherence. Following the completion of the informed consent procedure, individuals who agreed to participate in the study engaged in a 30-40-minute clinical interview and completed a series of self-report questionnaires to assess insight, psychiatric symptom severity, addiction severity, and perceived social support.

Clinical interviews were administered by the study’s Principal Investigator or a trained Master’s level Research Assistant (RA). All RAs recruited for the study were graduate students with experience in clinical interviewing. They also received training on the study’s assessment measures and further training in clinical interviewing from the Principal Investigator and a licensed psychologist, conducted at the site of the study’s data collection. Following multiple training sessions, RAs were observed in two clinical interviews and provided with detailed feedback to ensure each RA was following the clinical interview protocol. Additionally, group discussions were conducted for the clinician-administered SUMD-R measure in an effort to enhance inter-rater reliability among all researchers conducting clinical interviews. Periodic group check-ins were
conducted throughout the data collection period to ensure protocol and scoring adherence. Research assistants also gathered demographic information such as gender, age, ethnicity, education, and monthly income from each participant and from a file review. Participants were compensated with a $20 gift card for their time.

Following each participant’s clinical interview and completion of self-report measures, their subsequent three- and six-month follow-up dates were identified. On the scheduled follow-up date, an RA contacted the participant’s assigned case manager and solicited information on treatment adherence, using a questionnaire developed for this study. Case managers were asked to provide the number of times since the clinical interview (or since the 3-month follow-up) that the participant had been rearrested, hospitalized, removed from a program, or tested positive for substances. They were also asked to provide details regarding the cause of each incident and encouraged to include any additional information that was relevant to participants’ treatment compliance. Each assigned treatment program had its own set of rules and regulations to guide participants’ behavior throughout enrollment in the respective program. However, for the purposes of this study, the number and types of rule violations that were of interest were those involving the use of unauthorized substances. With regard to program removal, participants were generally asked to leave a program for a number of reasons, including repeated positive toxicology results, curfew violations, or physical altercations. In addition to the aforementioned outcome variables, the current study also monitored participants’ hospitalizations related to mental illness or substance use. All of the above follow-up data were gathered through review of participant files and consultation with participants’ assigned case manager. The number of events in each
category was used to determine the participant’s level of treatment adherence to court-ordered treatment. Completed questionnaires were collected by an RA within one week of the identified follow-up date. This procedure was followed for both the three- and six-month follow-up periods.

**Materials**

The following clinical measures were administered to each study participant:

*Insight Scale:* (IS; Birchwood, et al., 1994) A self-report measure designed to assess patient insight into mental illness. Participants were asked to agree or disagree with statements such as, “I do not need to be seen by a doctor or a psychiatrist” and “I do not need medication.” The IS is scored on a 0-16-point scale. Higher scores indicated a higher level of insight, while lower scores suggested a lack of insight. This scale is often used with individuals with SPMI and has been shown to be an accurate measure of insight when used with this population (Birchwood, Smith, Drury, & Healy, 1994; Drake, et al., 2007; Haq, et. al, 2009; Sitzer, Twamley, Patterson, & Jeste, 2008).

*Scale to Assess Unawareness of Mental Disorder – Revised:* (SUMD-R; Amador, Strauss, Yale, Gorman, & Endicott, 1991) The SUMD-R is used to assess insight in individuals with mental illness. It has been found to be a strong and accurate measure of insight within this population (Amador, et al., 1993; Dias, Brissos, Frey, &Kapczinski, 2008; Fiss, & Chaves, 2005; Monteiro, Silva, & Louza, 2008). The SUMD-R is a clinician-administered standardized scale designed to assess level of insight into mental illness. The original version of the SUMD-R contains 17 items that require administrators to rate participants on a 5-point Likert-type scale on awareness and attribution of symptoms such as hallucinations, delusions, and inappropriate affect. The
The first three questions on the measure assess participants’ awareness of 1) a mental disorder, 2) the effects of medication, and 3) social consequences of having a mental disorder. Previous research studies (Bell et al., 2007; Lysaker, 2006; Marks et al., 2000; Misdrahi, 2012; Tranulis et al., 2008; Tsang, 2010) examining similar populations have used only the first three items of the SUMD-R to assess participants on level of insight. For the purposes of the current study, the methods of the aforementioned studies were utilized and only the first three items were used to yield a score on this measure. This was done because many of the current study’s participants did not experience the specific symptoms addressed by the instrument, such as hallucinations, delusions, thought disorder, and inappropriate affect. However, the first three items of the measure tap into the three widely-researched facets of insight, listed above. Scale administrators were asked to rate participants from 1 (aware) to five (completely unaware), on current awareness of having a mental illness, the effects of medication, and the social consequences of being diagnosed with a mental illness. The SUMD-R was scored on a scale of 0-15. A higher score was indicative of a more severe lack of awareness of one’s mental illness, while a lower scores suggested some awareness of mental illness.

Self-Appraisal of Illness Questionnaire: (SAIQ; Marks, Fasteneau, Lysaker, Bond, 2000) A 17-item self-report measure designed to assess patient insight into illness. The questionnaire asked participants to rate their agreement on a Likert-type scale on statements and questions such as “Do you believe the current treatment to be necessary?” “If I were to discontinue treatment today I would be fine,” “I think my condition requires psychiatric treatment,” and “I have symptoms of mental illness.” Each
question was given a score of 0, 1, 2, or 3 and scores ranged from 0-51. A higher score indicated a more severe lack of insight and an increased belief that symptoms will vanish spontaneously, while lower scores indicated some acknowledgement of a need for professional treatment. In addition to the SUMD-R, the SAIQ is the second of two scales which are used to assess insight in individuals with mental illness. As it is a self-report measure, it allows researchers to examine individuals' self-appraisal of their illness. It has been found to be a useful and accurate measure of insight within this population (Jovanovski, Zakzanis, Atia, Young, & Campbell, 2007; Marks, Fastenau, Lysaker, & Bond, 2000).

Addiction Severity Index – Self-Report: (McLellan, et al., 1992) A 36-item self-report measure that assesses the severity and impact of addiction across several domains, including employment, health, and family relationships. The original measure asks participants questions regarding the aforementioned domains and the nature of their substance abuse within the past month, such as “How many days did you drink alcohol in the past 30 days?” This measure has been used on a number of substance-abusing populations, and has been used with individuals with mental illness and comorbid substance use disorders. It has been shown to be a valid and reliable tool in the assessment of addiction severity (Currie, El-Guebaly, Couson, Hodgins, & Mansley, 2004; Hodgins, & El-Guebaly, 1992; Zanis, McLellan, & Corse, 1997).

At the time of their clinical interview, participants in the current study had spent a significant portion of the previous 30 days in incarceration. As it was believed that circumstances such as limited access to substances would negatively impact the ability to accurately assess participants’ addiction severity, a slight modification was made to
this measure’s questions. To better assess the current study’s population of interest, the time period on which participants were asked to report was changed to the 30 days prior to the most recent arrest. For example, participants were asked to fill in blank spaces next to questions such as “How many days did you drink alcohol in the 30 days prior to your most recent arrest,” “How much money would you say you spent on alcohol in the 30 days prior to your most recent arrest?” and “How many days did you used more than one substance (including alcohol) in the 30 days prior to your most recent arrest?”

A 16-item self-report scale to assess psychiatric symptoms experienced within the past six months. This measure focuses on psychotic symptoms such as hallucinations and asked participants to endorse the frequency of symptoms, with questions such as, “In the past month, how often have you felt depressed?” and “In the past month, how often did you feel suspicious or paranoid?” Participants were given a score of 1-5 on each question and overall scores range from 16-80. A lower score indicated higher symptom severity. This measure is used frequently with this population and has been found to be a reliable and accurate measure of insight (Boothroyd, & Chen, 2008).

*Multidimensional Scale of Perceived Social Support:* (Zimet, Dahlem, Zimet, & Farley, 1988) A 12-item self-report scale to assess perceived social support from significant other, family, and friends. The scale asked participants to rate their agreement (on a Likert-type scale) with statements such as “My family really tries to help me,” “I can count on my friends when things go wrong,” and “There is a special person in my life who cares about my feelings.” Each question was given a score
between 1 (very strongly disagree) and 7 (very strongly agree) and the total score ranged from 12 to 84. A higher score indicated that the test taker perceived a greater level of social support from those around him or her. This scale has been used with a variety of populations and is often used in studies examining perceptions of social support among individuals with SPMI (Canty-Mitchell & Zimet, 2000; Chou, 1988; Zimet, Powell, Farley, Gordon, & Werkman, 1990).

*Demographic Information*, including gender, age, ethnicity, level of education, and monthly income, was also collected from both participants and file review.
Chapter 3: Results

All statistical analyses were completed using version 22.0 of Statistical Package for Social Sciences (SPSS, 2013). The four predictor variables were as follows: Psychiatric Symptom Severity (psychsx), Level of Insight (insight), Addiction Severity: Alcohol (ASI.alcohol), Addiction Severity: Drugs (ASI.drugs), and Perceived Social Support (support). Means and standard deviations for all assessment measures administered in the current study are presented in Table 4. An analysis of the correlational relationships between the study’s predictor variables was performed and results are presented in Table 5.

Table 4
Means and Standard Deviations of Assessment Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom Severity</td>
<td>59.15</td>
<td>13.66</td>
</tr>
<tr>
<td>ASI.alcohol</td>
<td>1.72</td>
<td>5.57</td>
</tr>
<tr>
<td>ASI.drugs</td>
<td>0.289</td>
<td>0.167</td>
</tr>
<tr>
<td>Social Support</td>
<td>56.19</td>
<td>14.39</td>
</tr>
<tr>
<td>Insight (BIS)</td>
<td>10.97</td>
<td>3.56</td>
</tr>
<tr>
<td>Insight (SAIQ)</td>
<td>22.45</td>
<td>8.24</td>
</tr>
<tr>
<td>Insight (SUMD-R)</td>
<td>6.41</td>
<td>3.71</td>
</tr>
</tbody>
</table>
Table 5

*Correlational Relationships between Predictor Variables*

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Sxs</th>
<th>Alcohol</th>
<th>Drugs</th>
<th>Support</th>
<th>BIS</th>
<th>SAIQ</th>
<th>SUMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom Severity</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASI.alcohol</td>
<td>-0.016</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASI.drugs</td>
<td>-0.26*</td>
<td>0.19</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Social Support</td>
<td>0.29*</td>
<td>0.14</td>
<td>-0.04</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insight (BIS)</td>
<td>-0.20</td>
<td>0.08</td>
<td>.18</td>
<td>0.15</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insight (SAIQ)</td>
<td>0.52**</td>
<td>-0.04</td>
<td>-0.28*</td>
<td>0.05</td>
<td>-0.58</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Insight (SUMD-R)</td>
<td>0.33**</td>
<td>-0.04</td>
<td>-0.17</td>
<td>-0.03</td>
<td>-0.65</td>
<td>0.59</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note.  *p < .05.  **p < .01.  Sxs = psychiatric symptoms.

Results yielded significant correlations between several of the predictor variables. As seen in Table 5, a statistically significant correlation was found between psychiatric symptom severity and perceived social support (r = 0.29; p = .02), as well as insight, as measured by the SAIQ (r = .52; p < .001) and SUMD-R (r = .33; p = .01). Additionally, symptom severity yielded a significant negative correlation with drug addiction severity (r = -0.26; p = .03). Drug addiction severity also yielded a significant negative correlation with insight, as measured by the SAIQ (r = -0.28; p = .02) such that as participants’ drug addiction increased, their level of insight into their SPMI decreased.
Correlational matrices outlining the magnitude of the relationship between the measures used and the outcome variables at 3 and 6 month follow-up can be found in Tables 6 and 7. No significant correlational relationships were found at three months. However, at six months several statistically significant relationships were found. There was a significant correlation between alcohol and hospitalization \((r = .647, p < .01)\), removal \((r = .276, p < .05)\), and adherence \((r = .271, p < .05)\). A significant correlation was also found between support and removal \((r = .305, p < .05)\).

Table 6

**Correlational Relationships between Three-Month Outcomes and Measures**

<table>
<thead>
<tr>
<th>Three-Month Outcome</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sxs</td>
</tr>
<tr>
<td>Arrest</td>
<td>-.143</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>.138</td>
</tr>
<tr>
<td>Removal</td>
<td>-.150</td>
</tr>
<tr>
<td>Toxicology</td>
<td>-.141</td>
</tr>
<tr>
<td>Adherence</td>
<td>-.167</td>
</tr>
</tbody>
</table>

Note. *p < .05. **p < .01. Sxs = psychiatric symptoms.

Table 7

**Correlational Relationships between Six-Month Outcomes and Measures**

<table>
<thead>
<tr>
<th>Six-Month Outcome</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sxs</td>
</tr>
<tr>
<td>Arrest</td>
<td>.163</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>.005</td>
</tr>
<tr>
<td>Removal</td>
<td>.057</td>
</tr>
<tr>
<td>Toxicology</td>
<td>-.031</td>
</tr>
<tr>
<td>Adherence</td>
<td>.023</td>
</tr>
</tbody>
</table>

Note. *p < .05. **p < .01. Sxs = psychiatric symptoms.
The frequency of treatment non-compliance for each of the outcome variables was measured at three and six months and is presented in Table 8. The outcome variables were substance abuse relapse (as measured by number of substance-related rearrests and positive toxicology results), and mental illness relapse (as measured by number of re-hospitalizations).

Table 8

*Frequency Distribution of Outcome Variables at Three- and Six-Month Follow-Up*

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Three Months n (%)</th>
<th>Six Months n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrests</td>
<td>8 (11%)</td>
<td>14 (19.18%)</td>
</tr>
<tr>
<td>Hospitalizations</td>
<td>1 (1.4%)</td>
<td>3 (4.11%)</td>
</tr>
<tr>
<td>Program Removals</td>
<td>6 (8.2%)</td>
<td>15 (20.55%)</td>
</tr>
<tr>
<td>Violations/PositiveResults</td>
<td>12 (16.44%)</td>
<td>28 (38.36%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>27 (36.99%)</strong></td>
<td><strong>60 (82.19%)</strong></td>
</tr>
</tbody>
</table>

Each of the five outcome variables (i.e., number of rearrests, number of hospitalizations related to SPMI or substance abuse relapse, number of rules violations, positive toxicology results, number of removals from programs) was measured dichotomously, where participants were given a “0” if they had not experienced the event in question or a “1” if they had. For example, if a participant had experienced one or more re-arrests during the three-month follow-up period, (s)he would receive a “1” in that category. If (s)he did not experience any re-arrests during the three-month follow-up, (s)he would receive a “0.” Upon further investigation of participants’ follow-up data, it was determined that each individual who had experienced a rule violation had done so due to positive toxicology results. Therefore, the “positive toxicology results” and “rules violations” variables were collapsed into a single category, leaving four outcome
variables. To determine the rate of overall compliance for each participant, a composite variable, labeled “adherence,” was created. To calculate the program adherence variable, the sum of the converted dichotomous scores on the individual outcome variables was calculated for each participant. For example, a participant who had experienced one or more re-arrests, re-hospitalizations, or rules violations would receive an adherence score of “3,” while a participant who did not experience any re-arrests, re-hospitalizations, rules violations, positive toxicology results, or removals from programs would receive a “0.” This procedure was followed for both the three- and six-month follow-up periods and each participant was given a three-month adherence and six-month adherence score.

Regression Analysis

Linear and logistic regression analyses were used to examine the relationships between predictor and outcome variables, as they related to the study’s original hypotheses.

First, level of insight was hypothesized to be a significant predictor of participant adherence. To examine differences in level of insight between those individuals who experienced rearrests, re-hospitalizations, rules violations, positive toxicology results, and program removals and those individuals who did not, independent samples t-tests were performed. Each measure of insight was used as a continuous predictor in a separate model. As insight was measured continuously, the grand mean score of each measure was used as a cutoff to separate participants into two groups (i.e., high insight and low insight). The cutoff score for each insight measure can be found in Table 4. Contrary to expectation, individuals with low levels of insight (M = 0.14, SD = 0.35)
experienced significantly fewer positive toxicology results at three months than
individuals with high levels of insight (M = 0.18, SD = 0.39), t(71) = -2.46, p = .016. The
assumption of homogeneity of variances was met, as assessed by Levene’s test for
equality of variance (p = n.s.). No additional significant differences were found between
individuals with high and low insight, in relation to overall adherence.

Logistic regression analysis was performed for three- and six-month follow-up
periods, using level of insight as the predictor variable and each of the following as
outcome variables: rearrests, re-hospitalizations, rules violations/positive toxicology
results, and program removals (Tables 9, 10, & 11).

Table 9

(Logistic Regression Analysis: Predicting Outcome at Three and Six Months with the BIS)

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>OR</th>
<th>95% CI for Odds Ratio</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three Months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrest</td>
<td>.154</td>
<td>.157</td>
<td>.959</td>
<td>1</td>
<td>.328</td>
<td>1.166</td>
<td>.857</td>
<td>1.586</td>
<td></td>
</tr>
<tr>
<td>Hosp</td>
<td>.899</td>
<td>.930</td>
<td>.936</td>
<td>1</td>
<td>.333</td>
<td>2.458</td>
<td>.398</td>
<td>15.200</td>
<td></td>
</tr>
<tr>
<td>Removal</td>
<td>-.056</td>
<td>.163</td>
<td>.118</td>
<td>1</td>
<td>.731</td>
<td>.945</td>
<td>.687</td>
<td>1.301</td>
<td></td>
</tr>
<tr>
<td>Tox.</td>
<td>.174</td>
<td>.144</td>
<td>1.464</td>
<td>1</td>
<td>.226</td>
<td>1.190</td>
<td>.945</td>
<td>1.578</td>
<td></td>
</tr>
<tr>
<td>Six Months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrest</td>
<td>.298</td>
<td>.216</td>
<td>1.901</td>
<td>1</td>
<td>.168</td>
<td>1.347</td>
<td>.882</td>
<td>2.056</td>
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</tr>
<tr>
<td>Hosp</td>
<td>.816</td>
<td>.681</td>
<td>1.436</td>
<td>1</td>
<td>.231</td>
<td>2.261</td>
<td>.595</td>
<td>8.587</td>
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</tr>
<tr>
<td>Removal</td>
<td>-.102</td>
<td>.135</td>
<td>.563</td>
<td>1</td>
<td>.453</td>
<td>.903</td>
<td>.693</td>
<td>1.178</td>
<td></td>
</tr>
<tr>
<td>Tox.</td>
<td>-.057</td>
<td>.117</td>
<td>.236</td>
<td>1</td>
<td>.627</td>
<td>.945</td>
<td>.752</td>
<td>1.188</td>
<td></td>
</tr>
</tbody>
</table>

Note. *p < .05. **p < .01. Hosp. = hospitalization. Tox. = rules violations/positive
toxicology results.
### Table 10

**Logistic Regression Analysis: Predicting Outcome at Three and Six Months with the SAIQ**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Three Months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrest</td>
<td>.018</td>
<td>.062</td>
<td>.087</td>
<td>1</td>
<td>.768</td>
<td>1.019</td>
<td>.902</td>
<td>1.151</td>
</tr>
<tr>
<td>Hosp</td>
<td>.766</td>
<td>.628</td>
<td>1.484</td>
<td>1</td>
<td>.223</td>
<td>2.150</td>
<td>.628</td>
<td>7.367</td>
</tr>
<tr>
<td>Removal</td>
<td>-.071</td>
<td>.066</td>
<td>1.173</td>
<td>1</td>
<td>.279</td>
<td>.931</td>
<td>.628</td>
<td>7.367</td>
</tr>
<tr>
<td>Tox.</td>
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<td>.050</td>
<td>.512</td>
<td>1</td>
<td>.474</td>
<td>.965</td>
<td>.874</td>
<td>1.065</td>
</tr>
<tr>
<td><strong>Six Months</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrest</td>
<td>.127</td>
<td>.082</td>
<td>2.377</td>
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<td>.123</td>
<td>1.135</td>
<td>.966</td>
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<td>.583</td>
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<td>.445</td>
<td>1.125</td>
<td>.832</td>
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</tr>
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<td>.073</td>
<td>1</td>
<td>.787</td>
<td>.985</td>
<td>.883</td>
<td>1.099</td>
</tr>
<tr>
<td>Tox.</td>
<td>.051</td>
<td>.047</td>
<td>1.171</td>
<td>1</td>
<td>.279</td>
<td>1.052</td>
<td>.960</td>
<td>1.153</td>
</tr>
</tbody>
</table>

Note. *p < .05. **p < .01. Hosp. = hospitalization. Tox. = rules violations/positive toxicology results.

### Table 11

**Logistic Regression Analysis: Predicting Outcome at Three and Six Months with the SUMD**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Three Months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrest</td>
<td>.098</td>
<td>.138</td>
<td>.506</td>
<td>1</td>
<td>.477</td>
<td>1.103</td>
<td>.841</td>
<td>1.447</td>
</tr>
<tr>
<td>Hosp</td>
<td>.001</td>
<td>.661</td>
<td>.000</td>
<td>1</td>
<td>.998</td>
<td>1.001</td>
<td>.274</td>
<td>3.656</td>
</tr>
<tr>
<td>Removal</td>
<td>.056</td>
<td>.161</td>
<td>.120</td>
<td>1</td>
<td>.729</td>
<td>1.058</td>
<td>.771</td>
<td>1.450</td>
</tr>
<tr>
<td>Tox.</td>
<td>.048</td>
<td>.124</td>
<td>.148</td>
<td>1</td>
<td>.700</td>
<td>1.049</td>
<td>.822</td>
<td>1.338</td>
</tr>
<tr>
<td><strong>Six Months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrest</td>
<td>-.026</td>
<td>.174</td>
<td>.022</td>
<td>1</td>
<td>.882</td>
<td>.974</td>
<td>.693</td>
<td>1.371</td>
</tr>
<tr>
<td>Hosp</td>
<td>-.742</td>
<td>.750</td>
<td>.978</td>
<td>1</td>
<td>.323</td>
<td>.476</td>
<td>.110</td>
<td>2.071</td>
</tr>
<tr>
<td>Removal</td>
<td>.001</td>
<td>.136</td>
<td>.000</td>
<td>1</td>
<td>.992</td>
<td>1.001</td>
<td>.767</td>
<td>1.307</td>
</tr>
<tr>
<td>Tox.</td>
<td>-.180</td>
<td>.122</td>
<td>2.189</td>
<td>1</td>
<td>.139</td>
<td>.835</td>
<td>.658</td>
<td>1.060</td>
</tr>
</tbody>
</table>

As seen in the preceding tables, no significant results were found and insight was not shown to be a significant predictor of outcome at three or six months for any of the aforementioned outcome variables.

Simple linear regression was then performed using insight as the predictor and the three- and six-month composite adherence variables as outcomes. Results can be found in Table 12. No significant relationships were found between insight and any of the aforementioned outcome variables, suggesting insight was not a predictor of adherence in the current study.

Table 12

Linear Regression Analysis: Insight as a Predictor of Outcome at Three and Six Months

<table>
<thead>
<tr>
<th></th>
<th>Three Months</th>
<th>Six Months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>BIS</td>
<td>.032</td>
<td>.933</td>
</tr>
<tr>
<td>SAIQ</td>
<td>-.005</td>
<td>-.394</td>
</tr>
<tr>
<td>SUMD</td>
<td>.021</td>
<td>.632</td>
</tr>
<tr>
<td></td>
<td>.016</td>
<td>.412</td>
</tr>
<tr>
<td></td>
<td>.017</td>
<td>1.104</td>
</tr>
<tr>
<td></td>
<td>-.033</td>
<td>-.873</td>
</tr>
</tbody>
</table>

Note. *p < .05. **p < .01.

Next, it was hypothesized that there would be a moderating effect between level of insight and addiction severity. To test this hypothesis, the relationship between addiction severity and adherence was examined. Logistic regression analysis was again performed using alcohol addiction severity and drug addiction severity as predictors and each of the study’s dichotomous outcomes (i.e., rearrests, re-
hospitalizations, rules violations/positive toxicology results, and program removals) as dependent variables. Results of the logistic regression can be found in Tables 13 and 14.

Table 13

**Logistic Regression Analysis: Addiction Severity as a Predictor of Outcome at Three Months**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio</th>
<th>95% CI for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrest</td>
<td>-.38</td>
<td>.124</td>
<td>.094</td>
<td>1</td>
<td>.759</td>
<td>.963</td>
<td>.756 - 1.227</td>
</tr>
<tr>
<td>Hosp</td>
<td>-3.765</td>
<td>950.831</td>
<td>.000</td>
<td>1</td>
<td>.997</td>
<td>.023</td>
<td>.000 -</td>
</tr>
<tr>
<td>Removal</td>
<td>-.434</td>
<td>.494</td>
<td>.771</td>
<td>1</td>
<td>.380</td>
<td>.648</td>
<td>.246 - 1.706</td>
</tr>
<tr>
<td>Tox.</td>
<td>-.752</td>
<td>.521</td>
<td>2.081</td>
<td>1</td>
<td>.149</td>
<td>.471</td>
<td>.170 - 1.310</td>
</tr>
<tr>
<td>Drugs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrest</td>
<td>.489</td>
<td>2.285</td>
<td>.046</td>
<td>1</td>
<td>.830</td>
<td>1.631</td>
<td>.019 - 143.719</td>
</tr>
<tr>
<td>Hosp</td>
<td>-595.16</td>
<td>30046.086</td>
<td>.000</td>
<td>1</td>
<td>.984</td>
<td>.000</td>
<td>.000 -</td>
</tr>
<tr>
<td>Tox.</td>
<td>2.003</td>
<td>2.090</td>
<td>.918</td>
<td>1</td>
<td>.338</td>
<td>7.408</td>
<td>.123 - 445.084</td>
</tr>
</tbody>
</table>

Note. *p < .05. **p < .01. Hosp. = hospitalization. Tox. = rules violations/positive toxicology results.
Table 14

*Logistic Regression Analysis: Addiction Severity as a Predictor of Outcome at Six Months*

<table>
<thead>
<tr>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio 95% CI for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Alcohol</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrest</td>
<td>-3.418</td>
<td>3.792</td>
<td>.813</td>
<td>1</td>
<td>.367</td>
</tr>
<tr>
<td>Hosp</td>
<td>.228</td>
<td>.162</td>
<td>1.973</td>
<td>1</td>
<td>.160</td>
</tr>
<tr>
<td>Removal</td>
<td>.107</td>
<td>.077</td>
<td>1.938</td>
<td>1</td>
<td>.164</td>
</tr>
<tr>
<td>Tox.</td>
<td>.052</td>
<td>.048</td>
<td>1.168</td>
<td>1</td>
<td>.280</td>
</tr>
<tr>
<td><strong>Drugs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrest</td>
<td>-3.274</td>
<td>3.311</td>
<td>.813</td>
<td>1</td>
<td>.323</td>
</tr>
<tr>
<td>Hosp</td>
<td>-10.426</td>
<td>10.365</td>
<td>1.012</td>
<td>1</td>
<td>.314</td>
</tr>
<tr>
<td>Removal</td>
<td>-2.555</td>
<td>2.484</td>
<td>1.058</td>
<td>1</td>
<td>.304</td>
</tr>
<tr>
<td>Tox.</td>
<td>-1.543</td>
<td>1.832</td>
<td>.709</td>
<td>1</td>
<td>.400</td>
</tr>
</tbody>
</table>

Note. *p < .05. **p < .01. Hosp. = hospitalization. Tox. = rules violations/positive toxicology results.

Linear Regression was used to examine whether addiction severity was a significant predictor of adherence at three and six months. The results of this analysis can be found in Table 15. The variables ASI.alcohol and ASI.drugs were entered as predictors and three-month and six-month adherence were each entered as the dependent variable in separate models. The final regression model at three months was a poor fit (R² adj. = -.018), with no single variable contributing significantly to the model. The final regression model at six months was significant (R² adj. = .086), with ASI.alcohol being a significant predictor within the model (p = .02). No additional significant relationships were found.
Table 15

Linear Regression Analysis: Addiction Severity as a Predictor of Adherence at Three and Six Months

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>t</th>
<th>p</th>
<th>95% CI for B</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three Months</td>
<td></td>
<td></td>
<td></td>
<td>Upper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>-.014</td>
<td>-.863</td>
<td>.391</td>
<td>-.046</td>
<td>.018</td>
<td></td>
</tr>
<tr>
<td>Drugs</td>
<td>.050</td>
<td>.094</td>
<td>.925</td>
<td>-1.013</td>
<td>1.114</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six Months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>.046</td>
<td>2.690</td>
<td>.009**</td>
<td>.012</td>
<td>.080</td>
<td></td>
</tr>
<tr>
<td>Drugs</td>
<td>-.996</td>
<td>-1.739</td>
<td>.087</td>
<td>-2.138</td>
<td>.147</td>
<td></td>
</tr>
</tbody>
</table>

Note. *p < .05. **p < .01.

In order to assess moderation, a moderation term labeled “insight x alcohol x drugs” was created. Linear regression was then used to determine the ability of the aforementioned variables to predict adherence at three and six months. Predictors were entered into the analysis in blocks, with insight, alcohol addiction severity, and drug addiction severity comprising the first block and the insight x alcohol x drugs interaction variable in the second block. As seen in Table 16, the model yielded significant results (F [3, 69] = 2.90, p = .04) and accounted for approximately 7.3% of the total variance in adherence to court-mandated treatment. Within the Model, alcohol addiction severity was the sole significant predictor of adherence (p = .01). Although ASI.alcohol was shown to be a predictor of adherence, results of the data analyses did not support this hypothesis, as there was no evidence of an interaction between insight and addiction severity.
Table 16

Linear Regression Analysis: Insight and Addiction Severity as a Predictor of Adherence at Three and Six Months

<table>
<thead>
<tr>
<th>Adj. $R^2$</th>
<th>B</th>
<th>$t$</th>
<th>$p$</th>
<th>95% CI for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three Months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 1</td>
<td>-.024</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAIQ</td>
<td>-.009</td>
<td>-.773</td>
<td>.442</td>
<td>-.031</td>
</tr>
<tr>
<td>Alcohol</td>
<td>-.014</td>
<td>-.851</td>
<td>.398</td>
<td>-.046</td>
</tr>
<tr>
<td>Drugs</td>
<td>-.069</td>
<td>-.124</td>
<td>.902</td>
<td>-1.179</td>
</tr>
<tr>
<td>Block 2</td>
<td>-.006</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>-.016</td>
<td>-.740</td>
<td>.462</td>
<td>-0.058</td>
</tr>
<tr>
<td>Six Months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 1</td>
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<td></td>
</tr>
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<td>.005</td>
<td>.386</td>
<td>.701</td>
<td>-.019</td>
</tr>
<tr>
<td>Alcohol</td>
<td>.017</td>
<td>2.670</td>
<td>.009**</td>
<td>.012</td>
</tr>
<tr>
<td>Drugs</td>
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<td>-1.652</td>
<td>.103</td>
<td>-2.190</td>
</tr>
<tr>
<td>Block 2</td>
<td>-.012</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>.001</td>
<td>.023</td>
<td>.982</td>
<td>-.047</td>
</tr>
</tbody>
</table>

Note. *p < .05. **p < .01. Interaction = insight x alcohol x drugs.

Finally, it was predicted that level of insight, addiction severity, psychiatric symptom severity, and social support combined would predict non-adherence better than any of the four variables alone. Linear Regression (Table 17) was used to examine this hypothesis. The preceding variables were entered as predictors and three-month and six-month adherence were each entered as the dependent variable in separate models. The final regression model at three months was a poor fit ($R^2$ adj. = -.029), with no single variable contributing significantly to the model. Similarly, the final regression model at six months was also a poor fit ($R^2$ adj. = .057), with ASI.alcohol being a significant predictor within the model ($p = .02$). The remaining variables, insight, psychsx, ASI.drugs, and support, did not contribute significantly to the model.
Table 17

Linear Regression Analysis: Combined Outcome Variables as Predictors of Adherence at Three and Six Months

<table>
<thead>
<tr>
<th>Adj. R^2</th>
<th>B</th>
<th>t</th>
<th>p</th>
<th>95% CI for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Three Months</td>
<td>-.029</td>
<td>.005</td>
<td>.346</td>
<td>.730</td>
</tr>
<tr>
<td>Insight</td>
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<td>-.019</td>
<td>-1.168</td>
<td>.247</td>
</tr>
<tr>
<td>Alcohol</td>
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<tr>
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<td>-.013</td>
<td>-1.604</td>
<td>.114</td>
</tr>
<tr>
<td>Support</td>
<td></td>
<td>.002</td>
<td>.275</td>
<td>.784</td>
</tr>
<tr>
<td>Six Months</td>
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<td>.628</td>
<td>.532</td>
</tr>
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<td>.023^*</td>
</tr>
<tr>
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<td>-1.588</td>
<td>.117</td>
</tr>
<tr>
<td>Drugs</td>
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<td>-1.188</td>
<td>.852</td>
</tr>
<tr>
<td>Support</td>
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<td>.008</td>
<td>1.117</td>
<td>.268</td>
</tr>
</tbody>
</table>

Note. *p < .05. **p < .01. Sxs = Psychiatric Symptoms.

Using the “enter” method, a Logistic Regression analysis was conducted to determine whether psychiatric symptom severity, level of insight, addiction severity, and social support were significant predictors of arrests, hospitalizations, program removals, and rules violations/positive toxicology results at three and six months. Results (shown in Tables 18 and 19) show that support predicted program removal at six months. None of the remaining independent variables were significant predictors of outcome at three or six months.
### Table 18

**Logistic Regression Analysis: Predictors of Outcome at Three Months**

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio</th>
<th>95% CI for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Arrests</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Alcohol</td>
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<td>.142</td>
<td>.164</td>
<td>1</td>
<td>.686</td>
<td>.944</td>
<td>.714</td>
</tr>
<tr>
<td>Drugs</td>
<td>.179</td>
<td>2.525</td>
<td>.005</td>
<td>1</td>
<td>.943</td>
<td>1.197</td>
<td>.008</td>
</tr>
<tr>
<td>Sxs</td>
<td>-.054</td>
<td>.035</td>
<td>2.415</td>
<td>1</td>
<td>.120</td>
<td>.948</td>
<td>.886</td>
</tr>
<tr>
<td>Supp.</td>
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<td>.031</td>
<td>.089</td>
<td>1</td>
<td>.766</td>
<td>.991</td>
<td>.933</td>
</tr>
<tr>
<td>BIS</td>
<td>.212</td>
<td>.165</td>
<td>1.667</td>
<td>1</td>
<td>.197</td>
<td>1.237</td>
<td>.896</td>
</tr>
<tr>
<td>SAIQ</td>
<td>.077</td>
<td>.075</td>
<td>1.058</td>
<td>1</td>
<td>.304</td>
<td>1.080</td>
<td>.933</td>
</tr>
<tr>
<td>SUMD</td>
<td>.129</td>
<td>.140</td>
<td>.854</td>
<td>1</td>
<td>.355</td>
<td>1.138</td>
<td>.865</td>
</tr>
<tr>
<td><strong>Hosp.</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>-1.645</td>
<td>4039.890</td>
<td>.000</td>
<td>1</td>
<td>1.000</td>
<td>.193</td>
<td>.000</td>
</tr>
<tr>
<td>Drugs</td>
<td>-147.57</td>
<td>69300.682</td>
<td>.000</td>
<td>1</td>
<td>.998</td>
<td>2.723</td>
<td>.000</td>
</tr>
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<td>Sxs</td>
<td>1.002</td>
<td>473.864</td>
<td>.000</td>
<td>1</td>
<td>.998</td>
<td>1.773</td>
<td>.000</td>
</tr>
<tr>
<td>Supp.</td>
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<td>259.679</td>
<td>.000</td>
<td>1</td>
<td>.998</td>
<td>1.773</td>
<td>.000</td>
</tr>
<tr>
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<td>1607.981</td>
<td>.000</td>
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Table 19

Logistic Regression Analysis: Predictors of Outcome at Six Months

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Chapter 4: Discussion

For individuals with SPMI, getting treatment in addition to medication is very important and treatment adherence can prevent decompensation, frequent hospitalizations, frequent contact with the criminal justice system, and disruptions in their lives, and the lives of their family and friends. The current study aimed to examine the client-centered factors that most heavily impact psychological and substance abuse treatment adherence among this population. Overall we found that insight was found to be significantly correlated with psychiatric symptom severity and drug addiction severity, however contrary to expectation we did not find that insight was a significant predictor of treatment compliance. Further, we also did not find that a combination of factors commonly related to medication non-compliance among those with SPMI (i.e., insight, addiction severity, psychiatric symptom severity, and social support) predicted adherence to psychological and substance abuse treatment better than each of the variables individually. However, we did find that addiction severity (as measured by the ASI) and social support were significant predictors at six months. While much of the previous literature on compliance found a correlation between medication compliance and insight (Brain, et al., 2013; Segarra, et al., 2012), we failed to replicate those findings in the current study. This could be for a number of reasons. First, the majority of the studies that found insight to be a predictor of compliance largely examined medication compliance and not compliance with other aspects of treatment. This study looked at adherence to other aspects of treatment, such as substance abuse and mental health treatment programs and there may be different issues related to medication compliance and treatment compliance. Second, many studies measured
compliance via participant self-report and did not include objective indicators, such as blood analysis. To assess compliance in the current study, objective indicators, such as positive toxicology results, rearrests, and hospitalizations were recorded; this may have resulted in a more accurate assessment of compliance. Finally, many other studies (Brain, et al., 2013; Segarra, et al., 2012) excluded individuals who met the criteria for Substance Use Disorder. The current study specifically aimed to investigate treatment compliance among individuals with both a SPMI and substance use concerns, as research suggests a significant portion of individuals with SPMI are estimated to have co-occurring substance use disorders. These co-occurring disorders have been empirically shown to negatively affect treatment compliance and impact the relationship between variables such as insight and adherence to recommended treatment (Buckley, et al., 2009; Tsai & Rosenheck, 2013).

The main findings of this study were that addiction severity and social support predicted treatment compliance with psychological and substance abuse programming better than either of the other client-centered variables assessed. The previous findings on the relationship between treatment compliance and addiction severity were mixed with some studies reporting a relationship (Cesares-Lopez, et al., 2011; Doyle & Donovan, 2014; Killeen, Brady, & Thvos, 1995), and others not (Sterling, Gottheil, Glassman, Weinstein, & Serota, 1997; Tkacz, Severt, Cacciola, & Reutsch, 2012). There was also a significant negative correlation found between drug addiction severity and insight, suggesting that, as participants’ drug addiction severity increased, their level of insight decreased. This finding is closely aligned with research that suggests individuals with severe drug use and/or addiction have lower levels of insight and are
oftentimes less likely to comply with treatment recommendations (Cacciola, Dugosh, & Camilleri, 2009). This may indicate that, for individuals with SPMI and addiction, as the severity of their addiction increases, their ability to recognize the need for treatment and intervention is significantly impacted. It also seems that these individuals may have a difficult time abstaining from substances once they do attempt to enter a treatment program.

A second finding of the current study was that social support predicted program removal at six months. This finding was somewhat unexpected, as it was hypothesized that higher levels of perceived social support would result in participants being better equipped to remain in an assigned program and better navigate their way through the sometimes demanding expectations of the treatment process. As there were numerous reasons why a participant might have been removed from a treatment program in the current study (including multiple rules violations which may have been related to continued substance use), it is unclear why participants in our sample were more likely to be removed from a program if they had higher levels of perceived support. However, this finding is in line with research by Comfort, et al. (2003) who found that type of support may have a differential impact on overall treatment outcome. Specifically, the authors found that support from non-substance-users was a significant contributor to improved treatment outcome. Conversely, those individuals in the study who received support from substance users experienced less favorable treatment outcomes, as they were less likely to maintain abstinence. The findings related to social support in the current study are also in line with research suggesting that alcohol-specific support (i.e., social support for abstinence and support for continued use) significantly impacts
whether an individual will continue drinking after enrolling in or being discharge from treatment (Hunter-Reel, McCrady, Hildebrandt, & Epstein, 2010; Longabaugh, Wirtz, Zywiak, & O’Malley, 2010; Nargiso, Kuo, Zlotnick, & Johnson, 2014). Considered together, this information suggests that, in the current study individuals with higher levels of support who were subsequently removed from treatment programs may have had support from individuals who continued to use substances. Further examination of the differential impacts of differing social support sources on treatment compliance is warranted.

Contrary to expectation, we did not find that the combination of patient centered variables which included insight, psychiatric symptom severity, addiction severity, and social support predicted treatment compliance among individuals with SPMI and substance use issues who had been court-mandate to receive treatment for both. Despite addiction severity being shown to be a significant predictor of adherence, the other three variables showed no such significant relationship. As determined by previous studies, while insight, psychiatric symptom severity, and support may have a connection with an individual’s likelihood of complying with treatment recommendations, they may not be the strongest predictors of it. It seems there may have been other variables not measured by the current study that may be stronger predictors of expected treatment compliance. With regard to insight, considering the large body of literature that supports it as a significant predictor of compliance, it is possible that the current study’s failure to replicate those results may stem from its measurement of insight. In the current study insight was rated by individuals who were not familiar with the participants following a brief, 30-45-minute clinical interview. Although the current
study utilizes well-known and widely-used insight measures, previous research generally used raters with a higher level of familiarity with participants whose level of insight was assessed. Some studies even assessed insight over repeated interactions with participants. This may have left researchers better equipped to rate actual level of insight, as oppose to merely assessing whether an individual has accepted the label of mental illness. This may lead to an inaccurate assessment, as some individuals may simply state they have a SPMI without appreciating the other aspects of the concept (e.g., the benefits of medication and social consequences of having a mental illness).

In addition to the preceding findings, the current study yielded several significant correlational relationships between predictor variables. First, there were significant correlations between psychiatric symptom severity and insight, drug addiction severity (in the negative direction), and support. This suggests that those participants with greater symptom severity also had greater addiction severity, lower levels of insight into their SPMI, and less social support. This finding highlights the complicated relationship between the aforementioned variables and is supported by previous research studies that found psychiatric symptom severity to be closely related to insight and addiction severity, as they relate to treatment adherence (Buckley, et al., 2009; Saeedi, Addington, & Addington, 2007; Tsai & Rosenheck, 2013). Psychiatric symptom severity may play a key role in adherence because it is so closely related to addiction severity, insight, and social support, as suggested by the current study’s significant correlation between these four variables. As suggested by this and previous research, these variables appear to be closely related and influential in whether an individual will comply
with treatment. However, they may not be the most impactful when it comes to predicting treatment compliance.

A growing body of research suggests patient-centered variables other than those examined in the current study also impact treatment adherence among individuals with mental illness and substance use disorders. For example, some studies have found that self-stigma and views toward having a mental illness decreased participants’ level of treatment adherence (Fung, et al., 2010; Fung, Tsang, & Corrigan, 2008; Sirey, et al., 2001). Other studies have found that treatment readiness, as measured by the Stages of Change, plays a significant role in whether patients adhere to treatment regimens (Tsang, Fung, & Chung, 2010). Additionally, attitudes toward medication have also been found to contribute to treatment non-adherence among patients with negative views of medication (Sajatovic, et al., 2008) and better adherence and functioning for patients with more positive medication attitudes (Mohamed, et al., 2009). The preceding information contributes to the existing complexity of treatment compliance and researchers’ understanding of it. Perhaps these variables, in addition to addiction severity and social support may be better indicators of treatment compliance adherence among individuals with mental illness and substance use disorders.
Limitations

The current study had several limitations which may have impacted its results.

First, the follow-up periods of three and six months may not have been long enough to detect useful data on events such as treatment completion, rearrests, and re-hospitalizations. TASC-MH is a jail-diversion program that takes participants between 18 and 24 months to complete, which means the current study’s follow-up period only lasted through the first quarter to one-third of TASC-MH’s mandated treatment program. It is possible that, with the passing of more time, more participants in the current study may have experienced a SPMI-related relapse. Second, only those defendants who accepted TASC-MH were sampled. It is possible that those clients were more motivated than other individuals to succeed and less likely to be non-adherent to mandated treatment or experience relapses, re-hospitalizations, and program removals. A third limitation is the study’s assessment of insight. As previously discussed, the relationship between insight and treatment compliance has been extensively supported by a large body of research. Although significant correlational relationships were found, the current study’s failure to find a significant predictive relationship between insight and the outcome variables may point to a limitation in the way the current study measured insight. While the clinician-administered measure of insight is widely used and accepted and has been empirically validated, the way in which it was utilized in the current study may not have been ideal. Specifically, the clinicians administering the measure did not have any prior knowledge of or experience with each participant for which they were asked to rate level of insight. It is possible that participants’ individual case manager may have had more extensive knowledge of the participant’s level of
insight, based on multiple meetings and conversations with the participant. The final limitation is the study’s modification of the ASI Self-Report to better accommodate the large proportion of participants who had been incarcerated at some point during the 30 days prior to the clinical interview. The psychometric properties of the modified ASI have not been empirically examined and it is, therefore, unknown whether the current study’s modified version of the ASI was valid or reliable.
Directions for Future Research

Future research should further examine the roles of addiction severity and social support in treatment compliance, with the ultimate goal of determining whether these variables might benefit from being a focus of treatment interventions. The finding of addiction severity as a significant predictor of adherence is an important one, as it may indicate that participants with a more severe addiction may be more likely to continue using substances once they have entered a treatment program. Due to this possibility, accurate assessment of addiction severity at program intake may be crucial, as it may help determine the best course of action for treatment providers. If the severity of one’s substance addiction affects the likelihood of subsequent adherence, individuals with higher levels of addiction may require different or more intensive intervention at the outset of and/or during treatment. If this is the case, it may be possible to identify these individuals during intake or early in a given treatment program in order to provide them with increased guidance or additional relapse prevention strategies. It may also be important to examine whether the substance an individual uses may impact addiction severity and the ways in which this interaction might affect compliance. This would help researchers to develop an even clearer picture of the impact of addiction severity and lead to improved interventions for longer lasting treatment compliance.

The current study also found social support to be a predictor of compliance. If the type and source of social support one is receiving will have a significant impact on whether an individual remains in a particular program, it may help to assess individuals’ sources of support at the beginning of treatment. While some individuals may have a variety of support sources, both positive and negative, others may lack support from
positive, non-substance-using sources. Those individuals may be in need of additional intervention in the form of help creating positive social networks and connection to people who support abstinence and recovery. This may increase the likelihood of remaining in a given treatment program and maintaining long-term success.

Despite the current study’s findings, a large body of research suggests that insight actually is a significant factor in whether an individual will comply recommended treatment. Accordingly, future research may benefit from continued investigation of the impact of this variable on compliance. This information can also be connected to research on changes in insight over the course of treatment, as well as the effectiveness of insight therapy among this population.

Finally, as stated previously, a growing body of research suggests variables such as self-stigma, views toward mental illness, treatment readiness, and attitudes toward medication also impact treatment compliance. Therefore, researchers may wish to include an examination of these factors in addition to those found to be significant by the current study, as they may help to develop a clearer picture of the most important factors that affect treatment compliance among individuals with mental illness and a substance use disorder.
Appendices
Appendix A:

Insight Scale

For the next questions, please state whether you agree, disagree or are unsure, based upon what you generally think about yourself.

1. Some of my symptoms are made by my mind.
   (0) Disagree   (1) Unsure   (2) Agree

2. I am mentally well.
   (2) Disagree   (1) Unsure   (0) Agree

3. I do not need medication.
   (2) Disagree   (1) Unsure   (0) Agree

4. My stay in the hospital was necessary.
   (0) Disagree   (1) Unsure   (2) Agree

5. The doctor is right in prescribing medication for me.
   (0) Disagree   (1) Unsure   (2) Agree

6. I do not need to be seen by a doctor or psychiatrist.
   (2) Disagree   (1) Unsure   (0) Agree

7. If someone said I have nervous or mental illness then they would be right.
   (0) Disagree   (1) Unsure   (2) Agree

8. None of the unusual things I experience are due to an illness.
   (2) Disagree   (1) Unsure   (0) Agree

Birchwod, et al. (1994)
Appendix B:

**SCALE TO ASSESS UNAWARENESS OF MENTAL DISORDER (SUMD)**

**Directions:**
This scale requires that the subject has a mental disorder with one of the symptoms listed below. For each symptom-item on the scale, it must first be ascertained that the subject has exhibited the particular symptom during the period under investigation. The severity of the symptom is not relevant, only that it is clearly present. The symptom checklist must be completed prior to filling out the scale in order to determine which symptom-items are relevant. The three non-symptom "summary" items (1, 2 and 3) are usually relevant and should be completed if this is the case.

In the current column "C" rate the highest level of awareness obtained at the time of the interview for "current" psychopathology.

In the past column "P" rate the present level of awareness for each item occurring during the period of time preceding the current period of investigation. In other words, when questioned about a particular episode in the past, would the subject currently say s/he was delusional, thought disordered, asocial, mentally ill, etc. at that time.

Longer or shorter time periods may be used to assess current and retrospective awareness and attributions depending on the goals of the investigation.

Following each symptom item (4 - 20), you are asked to rate the subject’s understanding of the cause of the symptom (i.e. attribution). NOTE: For any symptom, attribution items are rated only if the subject received a score between 1 and 3 on the awareness item.

**Symptom Checklist:**
Circle either "c" for current, or "p" for past, next to the item number to denote which symptom-items and time periods are to be rated.

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<td>6.</td>
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<td>P  Inappropriate affect</td>
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<td>8.</td>
<td>P  Unusual dress or appearance</td>
</tr>
<tr>
<td>9.</td>
<td>P  Stereotypic or ritualistic behavior</td>
</tr>
<tr>
<td>10.</td>
<td>P  Poor social judgement</td>
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<tr>
<td>11.</td>
<td>P  Poor control of aggressive impulses</td>
</tr>
<tr>
<td>12.</td>
<td>P  Poor control of sexual impulses</td>
</tr>
<tr>
<td>13.</td>
<td>P  Alogia</td>
</tr>
<tr>
<td>14.</td>
<td>P  Flat or bland affect</td>
</tr>
<tr>
<td>15.</td>
<td>P  Avolition-Apathy</td>
</tr>
<tr>
<td>16.</td>
<td>P  Anhedonia-Asociality</td>
</tr>
<tr>
<td>17.</td>
<td>P  Poor attention</td>
</tr>
<tr>
<td>18.</td>
<td>P  Confusion-Disorientation</td>
</tr>
<tr>
<td>19.</td>
<td>P  Unusual eye contact</td>
</tr>
<tr>
<td>20.</td>
<td>P  Poor social relationships</td>
</tr>
</tbody>
</table>

*Developed by Xavier F. Amador, Ph.D., and David H. Strauss, M.D., Schizophrenia Research Unit, New York State Psychiatric Institute, Unit #2, 722 West 168th St., NY, NY 10032. Duplication prohibited without permission. Version 3.1 REVISED: June 18, 1991.*
1. Awareness of mental disorder:
   In the most general terms, does the subject believe that s/he has a mental disorder, psychiatric problem, emotional difficulty etc.?  
   
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>Cannot be assessed. (Note: ALWAYS code a &quot;0&quot; on any item as MISSING DATA.)</td>
</tr>
<tr>
<td>1</td>
<td>Aware: Subject clearly believes that s/he has a mental disorder.</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Somewhat: Is unsure about whether s/he has a mental disorder but can entertain the idea that s/he might.</td>
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<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Unaware: Believes s/he does not have a mental disorder.</td>
</tr>
</tbody>
</table>

2. Awareness of the achieved effects of medication:
   What is the subject's belief regarding the effects of medication? Does the subject believe that medications have lessened the intensity or frequency of his/her symptoms (i.e. if applicable)?
   
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>0</td>
<td>Cannot be assessed or item not relevant</td>
</tr>
<tr>
<td>1</td>
<td>Aware: Subject clearly believes medications have lessened the intensity or frequency of his/her symptoms.</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Somewhat: Is unsure whether medications have lessened the intensity or frequency of his/her symptoms, but can entertain the idea.</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Unaware: Believes that medications have not lessened the intensity or frequency of his/her symptoms.</td>
</tr>
</tbody>
</table>

3. Awareness of the social consequences of mental disorder:
   What is the subject's belief regarding the reason s/he has been admitted to the hospital, involuntarily hospitalized, arrested, evicted, fired, injured, etc.?
   
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<tbody>
<tr>
<td>0</td>
<td>Cannot be assessed or item not relevant</td>
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<tr>
<td>1</td>
<td>Aware: Subject clearly believes that the relevant social consequences are related to having a mental disorder.</td>
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<tr>
<td>2</td>
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</tr>
<tr>
<td>3</td>
<td>Somewhat: Is unsure about whether the relevant social consequences are related to having a mental disorder.</td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Unaware: Believes that the relevant social consequences have nothing to do with having a mental disorder.</td>
</tr>
</tbody>
</table>

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SYMPTOM ITEMS

4. Awareness of hallucinations:
Does the subject recognize that s/he has false perceptions? For example, a subject who believes that he is hearing the voice of his dead uncle is unaware of the false nature of this perception, i.e., that this is a hallucination. If he can consider that this perception is internally produced, e.g., "I am under a lot of stress, I guess my mind might be playing tricks on me", he is somewhat aware. If he believes that his uncle can't be talking to him and that these perceptions must be false, he is aware.

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| 0 | 0 | Cannot be assessed/item not relevant (Note: ALWAYS code a “0” on any item as MISSING DATA.)

1 1 Aware: Subject clearly believes that s/he has hallucinations.
2 2
3 3 Somewhat: Is unsure as to whether s/he has hallucinations but can entertain the idea.
4 4

4b. Attribution:
How does the subject explain this experience(s)?

<table>
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</table>
| 0 | 0 | Cannot be assessed/item not relevant
1 1 Correct: Symptoms is due to mental disorder.
2 2
3 3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.
4 4
5 5 Incorrect: Symptoms is unrelated to a mental disorder.

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5. Awareness of delusions:
   Is the subject aware that s/he experiences delusions, i.e., as internally produced false beliefs?
   
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<tbody>
<tr>
<td>0</td>
<td>0 Cannot be assessed/item not relevant</td>
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<tr>
<td>1</td>
<td>1 Aware: Subject clearly believes that s/he has delusions.</td>
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<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3 Somewhat: Is unsure as to whether s/he has delusions but can entertain the idea (e.g., acknowledges having &quot;silly thoughts&quot; or &quot;my mind may have been playing tricks on me&quot;).</td>
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<tr>
<td>4</td>
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<tr>
<td>55</td>
<td>55 Unaware: Believes that s/he does not have delusions.</td>
</tr>
</tbody>
</table>

56. Attribution:
   How does the subject explain this experience(s)?
   
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<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.</td>
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<tr>
<td>4</td>
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</tr>
<tr>
<td>55</td>
<td>55 Incorrect: Symptom is unrelated to a mental disorder.</td>
</tr>
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6. Awareness of thought disorder:
   Is the subject aware that his/her communications are disorganized and difficult for others to comprehend?

   0 Cannot be assessed/Item not relevant
   1 Aware: Subject clearly believes that his/her communications or thoughts are disorganized.
   2
   3 Somewhat: Is unsure as to whether his/her communications or thoughts are disorganized but can entertain the idea.
   44
   55 Unaware: Believes that s/he does not have disorganized communications or thoughts.

6b. Attribution:
   How does the subject explain this experience(s)?

   0 Cannot be assessed/Item not relevant
   1 Correct: Symptom is due to mental disorder.
   2
   3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.
   44
   55 Incorrect: Symptom is unrelated to a mental disorder.
7. **Awareness of inappropriate affect:**

Is the subject aware that at times, s/he exhibits affect which is inappropriate given the social circumstance and/or the content of his/her thought.

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<td>Cannot be assessed/Item not relevant</td>
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<tr>
<td>1</td>
<td><strong>AWARE:</strong> Subject clearly believes that s/he displays inappropriate expressions of affect.</td>
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</tr>
<tr>
<td>3</td>
<td><strong>Somewhat:</strong> Is unsure as to whether s/he displays inappropriate expressions of affect but can entertain the idea.</td>
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<tr>
<td>44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td><strong>Unaware:</strong> Believes that s/he does not display inappropriate expressions of affect.</td>
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7b. **Attribution:**

How does the subject explain this experience(s)?

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<tr>
<td>33</td>
<td><strong>Partial:</strong> Unsure, but can consider possibility that it is due to a mental disorder.</td>
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<tr>
<td>55</td>
<td><strong>Incorrect:</strong> Symptoms is unrelated to a mental disorder.</td>
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8. Awareness of unusual appearance.

Is the subject aware that his/her appearance (i.e., dress, make-up, etc.) is unusual or bizarre in the context of cultural norms?

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<td>0 Cannot be assessed/item not relevant</td>
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<tr>
<td>1</td>
<td>1 Aware: Subject clearly believes that his/her appearance is unusual.</td>
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<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3 Somewhat: Is unsure as to whether his/her appearance is unusual but can entertain the idea.</td>
</tr>
<tr>
<td></td>
<td>44</td>
</tr>
<tr>
<td>55</td>
<td>Unaware: Believes that his/her appearance is not unusual.</td>
</tr>
</tbody>
</table>

8b. Attributions:

How does the subject explain this experience(s)?

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<td>3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.</td>
</tr>
<tr>
<td></td>
<td>44</td>
</tr>
<tr>
<td>55</td>
<td>Incorrect: Symptom is unrelated to a mental disorder.</td>
</tr>
</tbody>
</table>
9. **Awareness of stereotypic or ritualistic behavior:**

   Is the subject aware that s/he postures or engages in repetitive/ritualistic actions?

   
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<tbody>
<tr>
<td>0</td>
<td>0 Cannot be assessed/Item not relevant</td>
</tr>
<tr>
<td>1</td>
<td>1 Aware: Subject clearly believes that s/he displays stereotypic or ritualized behavior.</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3 Somewhat: Is unsure about whether s/he displays stereotypic or ritualized behavior but can entertain the idea.</td>
</tr>
<tr>
<td>44</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Unaware: Believes that s/he does not display stereotypic or ritualized behavior.</td>
</tr>
</tbody>
</table>

9b. **Attribution:** How does the subject explain this experience(s)?

   
<table>
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<tr>
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<td>1 Correct: Symptom is due to mental disorder.</td>
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<td>3</td>
<td>3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.</td>
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<tr>
<td>44</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Incorrect: Symptom is unrelated to a mental disorder.</td>
</tr>
</tbody>
</table>

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10. Awareness of poor social judgement.
   Is the subject aware that his/her social judgement is such that people become embarrassed, angry, or generally uncomfortable around him?

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<tbody>
<tr>
<td>0</td>
<td>Cannot be assessed/item not relevant</td>
</tr>
<tr>
<td>1</td>
<td>Aware: Subject clearly believes that his/her social judgement is poor.</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Somewhat: Is unsure as to whether s/he has poor social judgement, but can entertain the idea.</td>
</tr>
<tr>
<td>44</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Unaware: Believes that s/he does not have poor social judgement.</td>
</tr>
</tbody>
</table>

10b. Attribution:
   How does the subject explain this experience(s)?

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<tr>
<th>#</th>
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<tbody>
<tr>
<td>0</td>
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<tr>
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<td>Correct: Symptom is due to mental disorder.</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>3</td>
<td>Partial: Unsure, but can consider possibility that it is due to a mental disorder.</td>
</tr>
<tr>
<td>44</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Incorrect: Symptom is unrelated to a mental disorder.</td>
</tr>
</tbody>
</table>
1. **Awareness of poor control of aggressive impulses:**

Is the subject aware that s/he has poor control over his/her aggressive impulses?

- **C**
  - 0: Cannot be assessed/item not relevant
  - 1: Aware: Subject clearly believes that s/he has poor impulse control in this area.
  - 2
  - 3: Somewhat: Is unsure as to whether his/her impulse control is poor, but can entertain the idea.
  - 44
  - 55: Unaware: Believes that s/he does not have poor impulse control in this area.

11b. **Attribution:**

How does the subject explain this experience(s)?

- **C**
  - 0: Cannot be assessed/item not relevant
  - 1: Correct: Symptom is due to mental disorder.
  - 2
  - 3: Partial: Unsure, but can consider possibility that it is due to a mental disorder.
  - 4
  - 5: Incorrect: Symptom is unrelated to a mental disorder.
   Is the subject aware that s/he has poor control over his/her sexual impulses?

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</thead>
</table>
   | 0 | 0 Cannot be assessed/item not relevant
   | 1 | 1 Aware: Subject clearly believes that s/he has poor impulse control in this area.
   | 2 | 2
   | 3 | 3 Somewhat: Is unsure as to whether his/her impulse control is poor, but can entertain the idea.
   | 4 | 4
   | 5 | 5 Unaware: Believes that s/he does not have poor impulse control in this area.

12b. Attribution:
   How does the subject explain this experience(s)?

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</thead>
</table>
   | 0 | 0 Cannot be assessed/item not relevant
   | 1 | 1 Correct: Symptom is due to mental disorder.
   | 2 | 2
   | 3 | 3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.
   | 4 | 4
   | 5 | 5 Incorrect: Symptom is unrelated to a mental disorder.

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13. Awareness of slowed or impoverished speech (alogia):
   Is the subject aware that his/her speech is impoverished with respect to amount or content; or that s/he is slow to respond to questions or perseverates? Rate the subject's awareness of these characteristics globally.

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<tr>
<td>0</td>
<td>0 Cannot be assessed/item not relevant</td>
</tr>
<tr>
<td>1</td>
<td>1 Aware: Subject clearly believes that s/he has slowed or impoverished speech.</td>
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<tr>
<td>2</td>
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</tr>
<tr>
<td>3</td>
<td>3 Somewhat unsure as to whether s/he has slowed or impoverished speech, but can entertain the idea.</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5 Unaware: Believes that s/he does not have slowed or impoverished speech.</td>
</tr>
</tbody>
</table>

13b. Attribution:
   How does the subject explain this experience(s)?

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<td>1</td>
<td>1 Correct: Symptom is due to mental disorder.</td>
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<tr>
<td>2</td>
<td>2</td>
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<tr>
<td>3</td>
<td>3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.</td>
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14. **Awareness of flat or blunt affect:**
Is the subject aware that his/her facial expressions are unchanging, less spontaneous, unresponsive affectively, or that s/he produces a paucity of expressive gestures, has poor eye contact, or that his/her voice lacks inflections? Do not rate the subject's evaluation of his/her mood.

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<tr>
<td>0</td>
<td>P</td>
<td>Cannot be assessed/item not relevant</td>
</tr>
<tr>
<td>1</td>
<td>1 Aware: Subject clearly believes that his/her affect is flat or blunted.</td>
<td></td>
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<tr>
<td>2</td>
<td>2</td>
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</tr>
<tr>
<td>3</td>
<td>3 Somewhat: Is unsure as to whether his/her affect is flat or blunted, but can entertain the idea.</td>
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<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5 Unaware: Believes that s/he does not have flat or blunt affect.</td>
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14b. **Attribution:**
How does the subject explain this experience(s)?

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<td>3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.</td>
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15. Awareness of avolition-aphasia:
   Is the subject aware that s/he appears to pay less attention to grooming and hygiene than normal, or that s/he tends to be physically inert or impersistent in goal directed activity?

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<td>3</td>
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<td>4</td>
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<td>5</td>
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</tbody>
</table>

15b. Attribution:
   How does the subject explain this experience(s) ?

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
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<tr>
<td>C</td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>3</td>
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<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
16. **Awareness of anhedonia or asociality.**

Is the subject aware that his/her behavior reflects an apparent decrease in experiencing interest or pleasure while participating in activities normally associated with such feelings, or that s/he fails to show interest in social relationships.

<table>
<thead>
<tr>
<th>C</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
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<tr>
<td>2</td>
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<td>3</td>
<td>3</td>
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<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

16c. **Attribution:**

How does the subject explain this experience(s)?

<table>
<thead>
<tr>
<th>C</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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<tr>
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<td>1</td>
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<tr>
<td>2</td>
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<td>4</td>
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<tr>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

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17. Awareness of poor attention:

Is the subject aware that s/he appears to have difficulty focusing or maintaining his/her attention?

<table>
<thead>
<tr>
<th></th>
<th>P</th>
<th>0 Cannot be assessed/item not relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aware: Subject clearly believes that s/he has poor attention.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Somewhat: Is unsure as to whether s/he has poor attention, but can entertain the idea.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>5 Unaware: Believes that s/he does not have poor attention.</td>
<td></td>
</tr>
</tbody>
</table>

17b. Attribution:

How does the subject explain this experience(s)?

<table>
<thead>
<tr>
<th></th>
<th>P</th>
<th>0 Cannot be assessed/item not relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Correct: Symptom is due to mental disorder.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>5 Incorrect: Symptom is unrelated to a mental disorder.</td>
<td></td>
</tr>
</tbody>
</table>
18. **Awareness of confusion-disorientation.**
   Is the subject aware that s/he appears confused or disoriented?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>C</td>
<td>P</td>
<td>0 Cannot be assessed/item not relevant</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>1 Aware: Subject clearly believes that s/he appears confused or disoriented.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>3 Somewhat: Is unsure as to whether s/he appears confused and disoriented, but can entertain the idea.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>5 Unaware: Believes that s/he does not appear confused and disoriented.</td>
</tr>
</tbody>
</table>

18b. **Attribution:**
How does the subject explain this experience(s) ?

<p>| | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>C</td>
<td>P</td>
<td>0 Cannot be assessed/item not relevant</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>1 Correct: Symptom is due to mental disorder.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>5 Incorrect: Symptom is unrelated to a mental disorder.</td>
</tr>
</tbody>
</table>

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19. **Awareness of unusual eye contact:**

Is the subject aware that his/her eye contact is unusual in that s/he either "stares through" the person s/he is talking with, or avoids eye contact excessively?

- **C:** P
- **0:** 6 Cannot be assessed/item not relevant
- **1:** 1 Aware: Subject clearly believes that his/her eye contact is unusual.
- **2:** 2
- **3:** 3 Somewhat: Is unsure as to whether his/her eye contact is unusual, but can entertain the idea.
- **4:** 4
- **5:** 5 Unaware: Believes that s/he does not have unusual eye contact.

19b. **Attribution:**

How does the subject explain this experience(s)?

- **C:** P
- **0:** 6 Cannot be assessed/item not relevant
- **1:** 1 Correct: Symptom is due to mental disorder.
- **2:** 2
- **3:** 3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.
- **4:** 4
- **5:** 5 Incorrect: Symptom is unrelated to a mental disorder.

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20. **Awareness of poor social relationships:**

Is the subject aware that s/he appears to have few if any intimate relationships outside his/her family, and that the relationships s/he does have seem superficial?

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>C</td>
<td>P</td>
</tr>
<tr>
<td>0</td>
<td>0 Cannot be assessed/item not relevant</td>
</tr>
<tr>
<td>1</td>
<td>1 Aware: Subject clearly believes that s/he has poor social relationships.</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3 Somewhat aware: Unsure as to whether s/he has poor social relationships, but can entertain the idea.</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5 Unaware: Believes that s/he does not have poor social relationships.</td>
</tr>
</tbody>
</table>

20h. **Attribution:**

How does the subject explain this experience(s)?

<p>| | |</p>
<table>
<thead>
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<td>C</td>
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<tr>
<td>0</td>
<td>0 Cannot be assessed/item not relevant</td>
</tr>
<tr>
<td>1</td>
<td>1 Correct: Symptom is due to mental disorder.</td>
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<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>3 Partial: Unsure, but can consider possibility that it is due to a mental disorder.</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>5 Incorrect: Symptom is unrelated to a mental disorder.</td>
</tr>
</tbody>
</table>

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Appendix C:

**Self-Appraisal of Illness Questionnaire (SAIQ)**

I would like to know how you feel about your mental illness. For each of the following statements, please circle the statement that best describes your feelings. **Please do not place your name on this paper.**

<table>
<thead>
<tr>
<th>1. When someone first recommended the present treatment, how did you feel about the person’s recommendation?</th>
<th>Strongly Agreed</th>
<th>Agreed</th>
<th>Disagreed</th>
<th>Strongly Disagreed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. In general, how much do you tend to worry?</td>
<td>Not at All</td>
<td>Slightly</td>
<td>Moderately</td>
<td>A Great Deal</td>
</tr>
<tr>
<td>3. How much do you worry about your condition?</td>
<td>Not at All</td>
<td>Slightly</td>
<td>Moderately</td>
<td>A Great Deal</td>
</tr>
<tr>
<td>4. How much do you worry about getting into trouble about your condition?</td>
<td>Not at All</td>
<td>Slightly</td>
<td>Moderately</td>
<td>A Great Deal</td>
</tr>
<tr>
<td>5. How much do you worry about loosing friends because of your condition?</td>
<td>Not at All</td>
<td>Slightly</td>
<td>Moderately</td>
<td>A Great Deal</td>
</tr>
<tr>
<td>6. How much do you worry about being unable to work because of your condition?</td>
<td>Not at All</td>
<td>Slightly</td>
<td>Moderately</td>
<td>A Great Deal</td>
</tr>
<tr>
<td>7. How much do you worry about not recovering?</td>
<td>Not at All</td>
<td>Slightly</td>
<td>Moderately</td>
<td>A Great Deal</td>
</tr>
<tr>
<td>8. I think my condition will go away by itself (R).</td>
<td>Strongly Agreed</td>
<td>Agreed</td>
<td>Disagreed</td>
<td>Strongly Disagreed</td>
</tr>
<tr>
<td>9. There’s no doubt in my mind that I’ll be better some day.</td>
<td>Strongly Agreed</td>
<td>Agreed</td>
<td>Disagreed</td>
<td>Strongly Disagreed</td>
</tr>
<tr>
<td>10. Do you believe the current treatment to be necessary?</td>
<td>Definitely</td>
<td>Probably</td>
<td>Probably Not</td>
<td>Definitely Not</td>
</tr>
<tr>
<td>11. If you had not received treatment, how do you think you would be doing right now?</td>
<td>Doing Very Poorly</td>
<td>Doing Poorly</td>
<td>Doing Well</td>
<td>Doing Very Well</td>
</tr>
<tr>
<td>12. I can gain a lot from being in treatment.</td>
<td>Strongly Agreed</td>
<td>Agreed</td>
<td>Disagreed</td>
<td>Strongly Disagreed</td>
</tr>
<tr>
<td><strong>13. If I were to discontinue treatment today, I would do fine (R).</strong></td>
<td><strong>Strongly Agreed</strong></td>
<td><strong>Agreed</strong></td>
<td><strong>Disagreed</strong></td>
<td><strong>Strongly Disagreed</strong></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>---------------------</td>
<td>-----------</td>
<td>---------------</td>
<td>----------------------</td>
</tr>
<tr>
<td><strong>14. How much do your thoughts and feelings interfere with getting things done?</strong></td>
<td><strong>Slightly</strong></td>
<td><strong>Agreed</strong></td>
<td><strong>Moderately</strong></td>
<td><strong>A Great Deal</strong></td>
</tr>
<tr>
<td><strong>15. I think my condition requires psychiatric treatment</strong></td>
<td><strong>Strongly Agreed</strong></td>
<td><strong>Agreed</strong></td>
<td><strong>Disagreed</strong></td>
<td><strong>Strongly Disagreed</strong></td>
</tr>
<tr>
<td><strong>16. I have symptoms of mental illness</strong></td>
<td><strong>Strongly Agreed</strong></td>
<td><strong>Agreed</strong></td>
<td><strong>Disagreed</strong></td>
<td><strong>Strongly Disagreed</strong></td>
</tr>
<tr>
<td><strong>17. How ill do you think you are?</strong></td>
<td><strong>Not at All Ill</strong></td>
<td><strong>Slightly Ill</strong></td>
<td><strong>Moderately Ill</strong></td>
<td><strong>Severely Ill</strong></td>
</tr>
</tbody>
</table>

SAIQ: Marks, Fasteneau, Lysaker, and Bond (2000)
Appendix D:

ASI Self-Report Form

This survey asks questions about your background and employment, your health and family relationships, your legal situation, and your alcohol and drug use. Please answer each question as accurately as you can by placing an “X” in the box next to the answer you select, writing in the appropriate number, or writing in information in the space provided.

PART I: YOUR BACKGROUND AND EMPLOYMENT

1. When were you born?  
   Month  Day  Year

2. What is your current marital status? (Check one)  
   □ Never married  □ Separated  □ Divorced  □ Married  □ Widowed

2a. Are you satisfied with your marital situation?  
   □ NO  □ YES  □ Indifferent

3. How many days were you paid for working in the 30 days prior to your most recent arrest?  
   (Include paid sick and vacation days and days of "under the table" work)  
   Number of days

4. How much money did you receive from employment in the 30 days prior to your most recent arrest?  
   (Include paid sick and vacation days and days of "under the table" work)  
   $ __________

5. Did you have a valid driver’s license (not suspended or revoked)?  
   □ NO  □ YES

6. Did you have an automobile available on a regular basis?  
   □ NO  □ YES

Note: This is a self-report version of the Addiction Severity Index (ASI) used by the Center for Health Care Evaluation, VA Palo Alto Health Care System (152-MPD), Menlo Park, CA, 94025. See Rosen, Henson, et al. (2000; Addiction, 95, 419-425) for information on this version and see McLellan, Kushner, et al., (1992; Journal of Substance Abuse Treatment, 9, 159-213) for general information on the ASI.

*Modified for the Bronx Mental Health Court Population
PART II: YOUR HEALTH

7. How many days did you experience medical problems in the 30 days prior to your most recent arrest?

(Do not include ailments directly caused by drugs/alcohol, except for serious ailments related to drugs/alcohol that would continue even if you were abstinent – for example, cirrhosis of the liver, abscesses from needles, etc.)

8. How troubled or bothered had you been by these medical problems in the 30 days prior to your most recent arrest?

- Not at all
- Slightly
- Moderately
- Considerably
- Extremely

9. How important to you now is treatment for these medical problems?

- Not at all
- Slightly
- Moderately
- Considerably
- Extremely

10. In the 30 days prior to your most recent arrest, did you experience a significant period of time in which you:

<table>
<thead>
<tr>
<th></th>
<th>NO</th>
<th>YES</th>
<th>Only when high, or in withdrawal from alcohol/drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Experienced <strong>serious</strong> depression, hopelessness, loss of interest, difficulty with daily functioning?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Experienced <strong>serious</strong> anxiety/tension, uptight, unreasonably worried, inability to feel relaxed?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Experienced hallucinations – saw things or heard voices that were not there?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d. Experienced trouble understanding, concentrating, or remembering?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

11. **In the 30 days prior to your most recent arrest**, did you have a significant period (it may have been a direct result of alcohol/drug use) in which you have:

<table>
<thead>
<tr>
<th></th>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Experienced trouble controlling violent behavior, including episodes of rage, or violence?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Experienced serious thoughts of suicide (seriously considered a plan for taking your life)?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Attempted suicide?</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

12. **In the 30 days prior to your most recent arrest**, how many days had you experienced these psychological or emotional problems?

  
  number of days

*Modified for the Bronx Mental Health Court Population*
13. How much had you been troubled or bothered by these psychological or emotional problems in the 30 days prior to your most recent arrest?

- [ ] Not at all
- [ ] Slightly
- [ ] Moderately
- [ ] Considerably
- [ ] Extremely

14. How important to you now is treatment for these psychological or emotional problems?

- [ ] Not at all
- [ ] Slightly
- [ ] Moderately
- [ ] Considerably
- [ ] Extremely

15. In the 30 days prior to your most recent arrest, had you been prescribed medication for any psychological or emotional problems?  

- [ ] NO
- [ ] YES

---

**PART III: YOUR FAMILY RELATIONSHIPS**

16. In the 30 days prior to your most recent arrest, did you experience significant periods in which you had **serious** problems getting along with:

<table>
<thead>
<tr>
<th>Relationship</th>
<th>NO</th>
<th>YES</th>
<th>No recent contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Mother</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Father</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Brothers/sisters</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Sexual partner/spouse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Other significant family (SPECIFY: _________________________________)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Close friends</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Neighbors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. Coworkers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. In the 30 days prior to your most recent arrest, how many days did you have **serious** conflicts with your family?  

[ ] number of days

18. How troubled or bothered had you been by family problems in the 30 days prior to your most recent arrest?

- [ ] Not at all
- [ ] Slightly
- [ ] Moderately
- [ ] Considerably
- [ ] Extremely

19. How important to you now is treatment or counseling for these family problems?

- [ ] Not at all
- [ ] Slightly
- [ ] Moderately
- [ ] Considerably
- [ ] Extremely

*Modified for the Bronx Mental Health Court Population*
PART IV: YOUR ALCOHOL AND DRUG USE

20. How many days did you drink alcohol in the 30 days prior to your most recent arrest?  
   ________________ number of days

21. How many days did you drink alcohol to intoxication in the 30 days prior to your most recent arrest?  
   ________________ number of days

22. How much money would you say you spent on alcohol in the 30 days prior to your most recent arrest?  
   $ ________________

23. In the 30 days prior to your most recent arrest, how many days did you experience alcohol problems?  
   ________________ number of days

24. How troubled or bothered were you by these alcohol problems in the 30 days prior to your most recent arrest?  
   [ ] Not at all  [ ] Slightly  [ ] Moderately  [ ] Considerably  [ ] Extremely

25. How important to you now is treatment for these alcohol problems?  
   [ ] Not at all  [ ] Slightly  [ ] Moderately  [ ] Considerably  [ ] Extremely

26. In the 30 days prior to your most recent arrest, did you use any of the following drugs?  
   (Not including drugs taken as prescribed by your doctor)  
   NO  YES
   a. Heroin ........................................................................................................ [ ]  [ ]
   b. Methadone ..................................................................................................... [ ]  [ ]
   c. Other opiates/analgesics ((Morphine; Dilaudid; Demerol; Percocet; Darvon;  
      Talwin; Codeine; Tylenol 2,3,4; Syrups, Robitussin, Fentanyl) .................. [ ]  [ ]
   d. Barbiturates (Nembutal, Seconal, Tuinal, Amytal, Pentobarbital, Secobarbital,  
      Phenobarbital, Fiorinal) ........................................................................ [ ]  [ ]
   e. Sedatives/Hypnotics/Tranquilizers (Valium, Xaralax, Librium, Ativan, Serax,  
      Quaaludes, Tranxene, Dalmane, Halcion, Miltown).................................... [ ]  [ ]
   f. Cocaine (Cocaine Crystal, Free-Base Cocaine, or “Crack” or “Rock”) .......... [ ]  [ ]
   g. Amphetamines (Morser, Crank, Benzedrine, Dexedrine, Ritalin, Preludin,  
      Methamphetamine, Speed, Ice, Crystal) ................................................ [ ]  [ ]
   h. Cannabis (Marijuana, Hashish, Pot) ............................................................. [ ]  [ ]
   i. Hallucinogens (LSD [Acid], Mescaline, Mushrooms [Psilocybin], Peyote,  
      Green, PCP [Phencyclidine], Angel Dust, Ecstasy) .................................... [ ]  [ ]

*Modified for the Bronx Mental Health Court Population
27. How many days did you use more than one substance (including alcohol) in the 30 days prior to your most recent arrest? ________ number of days

28. In the 30 days prior to your most recent arrest, how many days did you experience drug problems? ________ number of days

29. How troubled or bothered were you by these drug problems in the 30 days prior to your most recent arrest?

   □ Not at all    □ Slightly    □ Moderately    □ Considerably    □ Extremely

30. How important to you now is treatment for these drug problems?

   □ Not at all    □ Slightly    □ Moderately    □ Considerably    □ Extremely

**PART V: YOUR LEGAL SITUATION**

31. Are you presently awaiting charges, trial or sentence? ................. □ NO □ YES

32. How serious do you feel your present legal problems are?

   □ Not at all    □ Slightly    □ Moderately    □ Considerably    □ Extremely

33. How important to you now is counseling or referral for these legal problems?

   □ Not at all    □ Slightly    □ Moderately    □ Considerably    □ Extremely

34. Have you been in a controlled environment in the past 30 days?

   □ NO □ YES, jail  □ YES, alcohol or drug treatment
   □ YES, medical treatment  □ YES, psychiatric treatment
   □ YES, other (SPECIFY) __________

35. How many days were you living in a controlled environment in the past 30 days? ________ number of days

36. What is today’s date?  Month Day Year

*Modified for the Bronx Mental Health Court Population*
**Appendix E:**

**Mental Health**

Now I am going to ask you some questions about any mental health or emotional difficulties that you may have had.

4.1 During the last six months, how many times have you been admitted to a hospital overnight for treatment of any psychological or emotional issues?

I am going to ask how often you experienced certain problems during the past month. *(Hand respondent card #2 with the Frequency Rating Scale.)* For each problem I mention, I’ll ask you to look at this list of choices and pick the one that best describes how often you have had the problem in the past month. The responses vary from “At least every day” to “Not at all”. If you have experienced the problem at least once in the past month you would choose “Once during the month.” Do you have questions about what the choices mean?

**Hand Card #2**

<table>
<thead>
<tr>
<th></th>
<th>At Least Every Day</th>
<th>Several Times a Week</th>
<th>Several Times During the Month</th>
<th>Once During the Month</th>
<th>Not at All</th>
<th>RF</th>
<th>NA</th>
<th>DK</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2 In the past month, how often have you felt nervous, tense, worried, frustrated or afraid?</td>
<td>1 2 3 4 5 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.3 In the past month, how often have you felt depressed?</td>
<td>1 2 3 4 5 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4 In the past month, how often have you felt lonely?</td>
<td>1 2 3 4 5 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5 In the past month, how often have others told you that you acted &quot;paranoid&quot; or &quot;suspicious&quot;?</td>
<td>1 2 3 4 5 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.6 In the past month, how often did you hear voices, or hear or see things that other people didn’t think were there?</td>
<td>1 2 3 4 5 7 8 9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.7 In the past month, how often did your [voices], [things you see/hear], interfere with your doing things? <em>(refer to what is mentioned in above question)</em></td>
<td>1 2 3 4 5 7 8 9</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

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| 4.8  | (Read slowly) In the past month, how often did you have trouble making up your mind about something, like deciding where you wanted to go or what you wanted to do, or how to solve a problem? | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 |
| 4.9  | (Read slowly) In the past month, how often did you have trouble thinking straight or concentrating on something you needed to do like worrying so much or thinking about problems so much that you can’t remember or focus on other things? | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 |
| 4.10 | In the past month, how often did you feel that your behavior or actions were strange or different from that of other people? | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 |
| 4.11 | In the past month, how often did you feel out of place or like you did not fit in? | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 |
| 4.12 | In the past month, how often did you forget important things? | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 |
| 4.13 | In the past month, how often did you have problems with thinking too fast (thoughts racing)? | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 |
| 4.14 | In the past month, how often did you feel suspicious or paranoid? | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 |
| 4.15 | In the past month, how often did you feel like hurting or killing yourself? | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 |
| 4.16 | In the past month, how often have you felt like seriously hurting someone else? | 1 | 2 | 3 | 4 | 5 | 7 | 8 | 9 |

Appendix F:

Multidimensional Scale of Perceived Social Support

We are interested in your opinions about the amount of support you receive from people in your life. I will read to you a list of statements. Using this scale (show scale) tell me which rating most closely matches your opinion.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Very Strongly Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Very Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There is a special person who is around when I am in need.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2. There is a special person with whom I can share my joys and sorrows.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>3. My family really tries to help me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>4. I get the emotional help and support I need from my family.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>5. I have a special person who is a real source of comfort to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>6. My friends really try to help me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>7. I can count on my friends when things go wrong.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>8. I can talk about my problems with my family.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>9. I have friends with whom I can share my joys and sorrows.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>10. There is a special person in my life who cares about my feelings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
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<tr>
<td>11. My family is willing to help me make decisions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>12. I can talk about my problems with my friends.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
References


Jo´nsdóttir, H., Opjordsmoen, S., Birkenaes, A. B., Simonsen, C., Engh, J. A.,


social cognition, and clinical symptoms depends on phase of illness.


