The Role of Cognitive Insight, Hope, Self-Stigma, and Symptomatology in Predicting Treatment Engagement in Individuals Diagnosed with Serious Mental Illnesses

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THE ROLE OF COGNITIVE INSIGHT, HOPE, SELF-STIGMA, AND
SYMPTOMATOLOGY IN PREDICTING TREATMENT ENGAGEMENT IN
INDIVIDUALS DIAGNOSED WITH SERIOUS MENTAL ILLNESSES

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DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by Patrick D. Boyle
on the 17th day of May, 2012, in partial fulfillment of the
requirements for the degree of Doctor of Psychology, has been examined and is
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Abstract

Adherence to and engagement with treatment is a complex and multifaceted issue encountered throughout many medical and helping professions, particularly in the fields of psychology and psychiatry. Adherence to treatment/service engagement is especially an issue in the treatment of serious mental illnesses; studies have shown that up to 80% of individuals do not adhere to their treatment (Tait et al., 2003). This study investigated if cognitive insight, as measured by the Beck Cognitive Insight Scale ([BCIS] Beck et al., 2004), and clinical insight are related to the recovery concepts of hope and self-stigma as well as symptomatology in predicting treatment adherence/service engagement in a sample of individuals diagnosed with severe mental illness. The sample consisted of volunteers under treatment in outpatient facilities utilizing the Assertive Community Treatment model. Data was collected from 35 participants from two different ACT team treatment sites. Initial T-tests showed that there was a significant difference between the sex of participants $t(33) = 2.276, p = .029$ and treatment site of participants $t(33) = -2.453, p = .020$ in regard to scores on the dependent variable measure, a self-designed service engagement scale. A hierarchical multiple regression analysis was conducted in order to test whether the independent variables of cognitive insight as measured by the Self-Reflectiveness and Self-Certainty subscales of the Beck Cognitive Insight Scale, i.e., clinical insight, hope, four factors of self-stigma (aware, agree, apply, and hurts self), and symptomatology, could significantly predict the dependent variable of service engagement/adherence. Model 1 of the regression (site and sex) was found to be significant ($p = .011$), but model 2 (predictor variables) was found not to be significant ($p = .122$). Scores from the Beck Cognitive Insight Scale Self-Reflectiveness subscale were positively correlated at the .01 level of significance with scores on the Insight Scale ($r = .544$), providing further evidence of the construct validity of the BCISR. No
significant relationship was found between the Beck Cognitive Insight Scale Self-Certainty subscale and the Birchwood Insight Scale as predicted. Several correlations were found between variables. Small sample size and lack of an accurate measure to gauge service engagement were identified as the greatest limitations of the study. Areas of future research on the constructs of insight, hope, self-stigma, and treatment adherence/service engagement are discussed.
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Chapter One

Statement of the problem

Individuals diagnosed with serious mental illnesses are often difficult to engage in treatment; evidence indicates that up to 80% of such individuals do not adhere to their treatment (Tait et al., 2003). Lack of insight has often been cited as one of the main the reason why these individuals do not engage with treatment providers and participate in their treatment (Ghaemi & Pope, 1994). Insight into one’s illness is often a focus of research concerning serious mental illnesses, which has shown that between 50% and 80% of individuals diagnosed with schizophrenia do not acknowledge that they have a mental illness (Dam, 2006). Impaired insight in people diagnosed with psychotic disorders has been associated with poor treatment outcomes, poor medication adherence, poor social functioning, and increased hospitalizations, but increased insight has been correlated with decreased psychiatric symptoms (Mutatsa et al., 2006; Smith et al., 2000; Weiler, Fleisher, & McArthur-Campbell, 2000). However, increased insight has also been linked in many studies to higher levels of depression, especially if the person has experienced a recent increase in insight (Mutatsa et al., 2006; Dam, 2006; Smith et al., 2000). Another study of insight among those diagnosed with serious mental illness found a positive relationship between insight into one’s illness and hopelessness about the future (Carroll, Pantelis, & Harvey, 2003).

Beck et al. (2004) differentiated between the more classic model of insight, labeled clinical insight, and the relatively newer concept of cognitive insight. Cognitive insight is defined as a person’s flexibility in evaluating the thoughts, beliefs, and often distortions that are typically the focus of cognitive behavioral treatments of serious mental illness (Colis et al., 2006). Clinical insight is defined as the acknowledgement that one has an illness (Amador &
Clinical insight has been linked to higher levels of adherence to treatment in populations diagnosed with serious mental illnesses (Bollini et al., 2004); more specifically, adherence to drug therapy has been correlated with higher clinical insight (Bartko et al., 2004; Trauer & Sacks, 2000; Mala, 2010; Yen et al., 2005). Less research has been conducted measuring clinical insight’s relationship to treatment adherence regarding the client’s treatment goals and adherence to means of attaining those goals (Buckley et al., 2007). Even less research has been conducted to measure cognitive insight’s relationship to both medication compliance and treatment adherence (Granholm et al., 2006).

Recovery from and with mental illness is a concept increasingly studied in recent years, as the consumer recovery movement demanded alternatives to the traditional medical treatment model for individuals with serious mental illnesses (Bellack, 2006; Davidson et al., 2007). This movement has now become a treatment model or framework for interacting with patients adopted by many outpatient treatment providers in community mental health (Andresen et al., 2003; Davidson & Roe, 2007). The main thrust of the recovery movement, which began to emerge in the 1970s, is to place primacy on the experiences, needs, and desires of the individuals with serious mental illness who are in treatment (Frese & Davis, 1997). Recovery is defined as both a process and an outcome; individuals with serious mental illnesses guide and actively participate in the decision-making involving their treatment, while also seeking to have the least amount of mental health services necessary to maintain their personally-defined stability and integration in the community (Andresen et al., 2003; Davidson & Roe, 2007).

Hope has been considered as an important theme in the recovery movement (Davidson et al., 2005; Corrigan, 2002). While there is no agreed upon definition of hope, it can be viewed as the expectation of achieving a goal and the belief that one has the workable means to achieve
that goal (Hillbrand & Young, 2008; Snyder et al., 2007). Clinical insight has been shown to have a negative relationship with perceived hope in populations diagnosed with serious mental illnesses, especially for those diagnosed with schizophrenia spectrum disorders (Hasson-Ohayon et al., 2009; Lysaker et al., 2005, 2007; Lincoln et al., 2007). In other words, individuals with serious mental illnesses who experience higher levels of insight have been shown to feel less hope. Another major theme of the recovery movement is stigma (Corrigan, 2008). Stigma can be defined as both personal and societal attitudes about individuals diagnosed with mental disorders as well as the disorders themselves. Self-stigma, as defined by Lysaker and colleagues (2007), is an individual’s internalized attitudes and understanding concerning serious mental illnesses. Self-stigma has been shown to act as a mediating factor between one’s level of hope and level of insight (Lysaker et al., 2007).

Though cognitive insight appears to be an important factor in the presentation and treatment of individuals with serious mental illness, no study has examined the relationship between cognitive insight and treatment adherence, hope, and self-stigma.

**Purpose of the Study**

The purpose of the current study is to determine whether the more medical model-oriented construct of insight into illness, the newer construct of cognitive insight, and constructs associated with recovery principles are predictive of treatment adherence among individuals diagnosed with serious mental illnesses. More specifically, this study will investigate if cognitive insight, as measured by the Beck Cognitive Insight Scale ([BCIS] Beck et al., 2004), and clinical insight are related to the recovery concepts of hope and self-stigma as well as symptomatology in predicting treatment adherence in a sample of individuals diagnosed with serious mental illness and treated in an outpatient facility utilizing the Assertive Community Treatment model. It is
hypothesized that individuals who are more engaged in their treatment will have higher levels of cognitive and clinical insight, higher levels of hope, and lower levels of self-stigma.

**Relevance to Goals of the Program**

This dissertation seeks to produce a practitioner-scholar in the field of psychology with an appreciation and comprehension of the concepts of cognitive insight, treatment adherence, and recovery principles as they relate to individuals diagnosed with serious mental illnesses. The study will also assist the author to assume the attitudes and identity of a practicing clinical psychologist in the context of evolving scientific knowledge, and to contribute relevant research and concepts to that evolving body of knowledge.
Chapter Two

Literature Review

Treatment Adherence/Engagement

Scope of problem and definitions.

Adherence to treatment is a complex and multifaceted issue encountered in many medical and helping professions, especially in the fields of psychology and psychiatry (Kikkert et al., 2008; Mihalko et al., 2004; Nose et al., 2003a; Meichenbaum & Turk, 1987). Studies have shown that 25-50% of people receiving psychiatric care are at least partially non-compliant with treatment (Breen & Thornhill, 1998). Adherence to treatment is particularly a problem in the treatment of serious mental illnesses; studies have shown that up to 80% of individuals do not adhere to their treatment (Tait et al., 2003). Varying definitions of adherence exist. Broadly speaking, adherence has been defined as the extent to which a person’s behavior conforms with the treatment recommended by a professional (Nose et al., 2003a). When evaluating treatment adherence in terms of psychological and psychiatric treatment, Mihalko and colleagues (2004) included the need for agreement to follow certain behaviors between the patient and prescriber of treatment in their definition of adherence. Change in the provider–patient relationship to a cooperative and collaborative model was one of the many issues raised by patients at the beginning of the recovery movement, as discussed later in this study.

Research suggests that there are many elements that lead or contribute to patient non-adherence to treatment. Many studies have been conducted to identify factors that contribute to adherence and methods to improve adherence. In a survey of 41 service-providers in the field of treatment adherence by individuals diagnosed with serious mental illnesses, Velligan et al. (2009) found several common factors cited by the respondents to the survey, which were also
supported by the body of literature on non-adherence. Patient-related factors include patients’ attitudes and beliefs concerning both having a disorder and the need for treatment (Velligan et al., 2009). Comorbid substance abuse disorders also contribute to non-adherence. Other demographic factors have been shown to contribute to non-adherence. Individuals who are younger; from a lower socioeconomic status; less educated; a member of a minority ethnicity; and/or are homeless are more likely to be non-adherent (Ahn et al, 2004; Nose et al., 2003a; Velligan et al., 2009). Also, males diagnosed with schizophrenia and females diagnosed with bipolar disorder are more likely to be non-adherent (Nose et al., 2003b; Copeland et al., 2008). Practical environmental complications such as transportation and finances can also interfere with patient adherence (Velligan et al., 2003). Cognitive impairment and reactions to medication, such as unwanted side effects, often contribute to non-adherence (Velligan et al., 2009). Relationship factors with treatment providers also affect treatment adherence. Research has shown that individuals who perceive themselves as having a good therapeutic relationship with a provider are more adherent to medication regimens (Lecomte et al, 2008). Many of these studies have found that insight into one’s disorder is an important factor in treatment adherence for individuals diagnosed with serious mental illnesses (Bartko et al., 2004; Mala, 2010; Marland & Cash, 2005; Trauer & Sacks, 2000; Yen et al., 2005); this variable will be covered in detail later in the study.

Outcomes of adherence studies involving individuals with serious mental illness usually focus on adherence to medication, and few research studies focus on adherence to attending and participating in treatment programs (Kikkert et al., 2008; Nose et al., 2003a). Medication adherence focuses on how often and how correctly one follows medication regimens prescribed by a doctor (Velligan et al., 2009). Potential outcomes of medication non-adherence include
increased symptomatology, more hospitalizations, and misperceptions by physicians that the medications are ineffective (Nose et al., 2003a; Velligan et al., 2009). These misperceptions can often lead to the physician increasing dosages, prescribing unnecessary adjunct treatments or medications, and making changes in primary medication (Velligan et al, 2003, 2007). Findings on medication adherence are constrained by heavy reliance on respondents’ self-reports. According to Velligan and colleagues (2006), up to 75% of medication adherence tools are based on subjective self-reports, which presents issues of reliability and accurate reporting. Objective measures, according to Kikkert et al. (2008), are time-consuming, complex, and expensive, and therefore are not used routinely in research studies on adherence. Measuring adherence to attending treatment programs also relies primarily on self-report measures (Nose et al., 2003a). In order to capture more facets of treatment adherence besides medication and appointment keeping, researchers have begun to look at the construct of service engagement.

**Service engagement.**

Current research is shifting its focus from treatment adherence/compliance to the construct of service engagement (Tetley, Jinks, Huband, & Howells, 2011; Wright, Callaghan, & Bartlett, 2011). Treatment adherence focuses specifically on adhering to prescribed treatments, such as attending outpatient treatment appointments and taking medications. Service engagement is a more complex construct that focuses on factors such as therapist/client relationship, collaboration, and clients’ perception of the usefulness of treatment, as well as appointment-keeping or medication-taking (Hall, Meaden, Smith, & Jones, 2001). As broadly defined by Tetley et al. (2011), service engagement is the extent to which clients participate in the treatment that is offered to them. Ryan and Morgan (2004) added to the operationalization of service engagement by asserting that it includes two distinct components: the provision of practical
treatments and the development of a working client/treatment provider relationship. There are several published service engagement measures, though most are observer-rated measures (Tetley et al., 2011; Tait, Birchwood, & Trower, 2002; O’Brien, White, Fahmy, & Singh, 2009). The majority of these measures focus exclusively on one or more factors related to service engagement, such as help-seeking, treatment adherence, relationship factors, and collaboration, and measure these constructs through interviews or self-reports from treatment providers (Tetley et al., 2011).

In summary, treatment adherence has been shown to play a substantial part in treatment efficacy for many individuals who receive mental health services. Adherence and service engagement have been shown to be problematic for individuals diagnosed with serious mental illnesses, although this review of the literature has also pointed out that nonadherence is a multiply determined phenomenon. Traditional, medically oriented correlates of non-adherence such as lack of insight have been posited as a potential cause of non-adherence and problems with treatment engagement.

Insight

The concept of insight has been the focus of much research in the study of serious mental illnesses, with published descriptions of insight deficits dating from the 19th century (Dam, 2006; Beck, et al., 2004). Despite its prominence in the field of research on serious mental illness, much like the concept of recovery there are many broad and divergent definitions and conceptualizations of insight. For the purposes of the current study, the author will differentiate between two general views of insight described by Beck and colleagues (Beck et al, 2004; Bora et al., 2007; Colis, Steer, & Beck, 2006): clinical insight and cognitive insight.
Clinical insight.

Clinical insight can be described as the classic view of insight in the description and study of serious mental illnesses (Beck et al., 2004; Bora et al., 2007; Colis, Steer, & Beck, 2006). While there are many definitions of clinical insight, the common thread of most definitions includes the knowledge that one has an illness and accepts the need for treatment (Amador & Strauss, 1993; Beck et al., 2004). The concept of insight has been described in literature on serious mental illness as far back as the late 19th century. Kraepelin (1904), an early researcher on mental illness, reported that the patients he observed with “dementia praecox” were, in general, significantly unaware of their disorder. In this clinical definition, the concept of insight is either something that people with a serious mental illness have or do not have; they either recognize and admit that they have a mental disorder that causes symptoms and deficits, or they do not (Dam, 2006).

Other definitions of clinical insight view insight as a more graduated and multidimensional concept rather than the earlier dichotomous and categorical definitions (Amador & Strauss, 1993). Many studies have indicated that a majority of individuals diagnosed with a serious mental illness, between 50% and 80% according to some studies (Amador & Gorman, 1998), either deny, fail to acknowledge, or lack awareness of a mental disorder or its signs and symptoms (Amador & Strauss, 1993). Still other individuals acknowledge the presence of a disorder and its symptoms, yet attribute the cause to something other than a disorder; others acknowledge the disorder but appear indifferent to signs and symptoms (Dam, 2006). Amador and Strauss (1993) asserted in their definition of insight, which fits the clinical insight paradigm, that insight includes both awareness of illness and attribution of illness. According to this definition, unawareness of illness includes the failure to acknowledge the specific symptoms and
deficits caused by a mental disorder. Also, misattribution of illness involves acknowledging the symptoms, signs, and deficits caused by an illness but attributing them to some factor or factors unrelated to mental dysfunction (Amador & Strauss, 1993). In the clinical insight paradigm, “lack of insight” has often been attributed to patients who disagree with their clinician regarding their disorders (McGorry & McConville, 2000).

Psychodynamic-oriented definitions of clinical insight have also been presented in the literature. Insight, as defined by psychodynamic theory, is linked to increased awareness of internal, repressed, and often unconscious matter (Levy, McGlashan & Carpenter, 1975). Lack of insight or poor insight is then seen as a defense mechanism used to protect an individual with a serious mental illness from the low self-esteem that would result from acceptance of a chronic mental illness. Through a process of “sealing over,” individuals can repress knowledge and acceptance of their disorder, thereby protecting themselves from the anxiety and conflict prevalent during psychosis (Levy et al., 1975).

Measurements of clinical insight have sought to operationalize the concept of clinical insight among those diagnosed with a serious mental illness. Measurement tools, such as the Scale for the Assessment of Unawareness of Mental Disorder (SUMD) (Amador et al., 1993), the Schedule of Assessment of Insight (SAI) (David, 1990), and the Insight and Treatment Attitude Questionnaire (ITAQ) (McEvoy et al., 1989), not only evaluate the acknowledgement of a presence of a disorder but also attitudes toward psychiatric treatment (McEvoy et al., 1989) and the ability to recognize psychotic symptoms as abnormal (David, 1990). The SUMD is anchored in the assumption that insight varies across cultures and ethnicities and that partial insight may occur (Amador et al., 1993).
Current research on clinical insight has focused on neurological correlates and possible causes of lack of insight in individuals with serious mental illnesses (Pia & Tamietto, 2006). The phenomenon of anosognosia, which is a deficit in awareness of a neurological disease due to brain damage caused by the disease, has been blamed for insight deficits (Pia & Tamietto, 2006; Rickelman, 2004). Anosognosia is caused either by focal brain lesions, especially in the frontal lobe, or by diffuse brain damage (Rickelman, 2004; Shad et al., 2006). Neuroimaging and brain scans have shown deficits in prefrontal lobe activity in individuals diagnosed with schizophrenia with poor insight, which has led many to draw associations between anosognosia and insight deficits (Shad et al, 2006). Research indicating that anosognosia may be caused by some type of damage to the brain has not been universally accepted in the field.

Cognitive insight.

Cognitive insight is a relatively new concept developed by Beck and colleagues (Beck et al., 2004; Beck & Warman, 2004) as an alternative yet related aspect of the study of insight. Cognitive insight focuses not on acknowledgment of the presence of an illness but on a person’s capacity, or limited capacity, to evaluate their anomalous experiences and cognitive distortions (Beck et al., 2004). Limits in the ability to evaluate thoughts, experiences, and distortions contribute to some of the impairment often associated with delusional thinking and traditional “lack of insight.” Cognitive insight is associated with the ability to distance oneself from and re-evaluate distorted beliefs and misinterpretation, which are some of the core aspects of cognitive therapy.

The model of cognitive insight presented by Beck et al. (2004; Beck & Rector, 2005) is based on a cognitive therapy conceptualization of serious mental disorders and their related symptoms (Beck & Rector, 2000; Rector, 2005; Rector, Beck, & Stolar, 2005). A practitioner of
cognitive behavioral therapy (CBT) views an individual with a serious mental illness as a whole person with many potentially debilitating and troubling problems, but who has the resources for testing and modifying his or her maladaptive beliefs and thoughts (Beck & Rector, 2000, 2005; Rector, Beck, & Stolar, 2005; Guadino, 2005; Turkington et al., 2004, 2008). The positive symptoms associated with serious mental illness, such as hallucinations and delusions, are seen as highly exaggerated expressions of the kinds of reactions experienced by anyone who feels persecuted, fearful, and/or depressed. CBT posits that the individual with a serious mental illness is not equipped with the psychological resources to cope with these exaggerated reactions on his or her own (Grant & Beck, 2009). CBT aims to reinforce the resources that the individual needs to challenge and replace these irrational beliefs and reactions. Beck and Rector (2000) also point out that an individual with serious mental illness has to face many unique stressors from the environment, such as the threat of enforced hospitalization, stigmatization, and imposed behavioral controls. These unique stressors make him or her more vulnerable to irrational beliefs and maladaptive thoughts (Beck & Rector, 2000; Gumley et al., 2006).

Rector, Beck, and Stolar (2005) theorized that the negative symptoms associated with serious mental illness, such as flat affect, alogia, and avolition, are the individual’s reactions to self-defeating and paranoid thoughts. The CBT conceptualization of negative symptoms is based on a diathesis-stress formulation: a continuum of predispositional traits developed in the individual’s premorbid personality to the full-blown negative symptomology, negative views and beliefs about the individual’s performance, and low expectations for pleasure or success in goal-oriented activities (Beck & Grant, 2008). The individual with a serious mental illness disengages in response to threatening delusional beliefs, perceived social threats, and anticipated failure in tasks. Rector, Beck, and Stolar (2005) further posited that the individual’s perception of limited
resources to cope with the outside world motivates the individual to conserve his or her energy by decreasing investment in activities requiring effort.

In this CBT conceptualization of serious mental illnesses, impaired insight plays a significant role in the development and maintenance of symptomatology (Beck & Rector, 2002, 2003). Delusions, for example, may result from deviant beliefs that become sufficiently intense to override normal reality-testing processes, which are already significantly affected in psychosis. A person with a serious mental illness may also attribute an external origin to auditory or visual hallucinations, exhibiting an impaired ability to evaluate and interpret their anomalous psychotic experiences (Beck & Warman, 2004). The focus of a CBT model of psychosis and its subsequent treatment is the level at which the individual is able to evaluate, acknowledge, and adjust these erroneous interpretations and distorted beliefs. The salience, frequency, and degree of conviction of these beliefs and misinterpretations are of equal importance. The degree to which these delusional beliefs control the individual’s information processing and his or her ability to view the subsequent cognitive products objectively is emphasized in this CBT model (Beck & Warman, 2004; Colis et al., 2006; Beck et al., 2004). Individuals can exhibit clinical insight and accept that they have an illness that causes these symptoms, but that does not account for their ability to evaluate and shift the underlying belief system, which is the focus of cognitive insight (Beck & Warman, 2004; Bora et al, 2007).

Beck et al. (2004) identified two important constructs that contribute to cognitive insight: self-reflectiveness and overconfidence in beliefs. Individuals with serious mental illnesses not only experience significant distortions of their experiences, but they also have deficits in their ability to distance themselves from these distortions and to respond to corrective feedback. In the CBT model of psychotherapy and case conceptualization, misinterpretations of internal and
external information and distorted thinking, which have roots in one’s internal beliefs and assumptions, result in many psychological problems, including depression and anxiety (Beck, 1995). An individual with psychosis not only engages in these types of misinterpretations and distortions but also exhibits a loss of ability to put these distortions in perspective, a resistance to corrective feedback, and a marked overconfidence in conclusions based on distortions (Warman et al., 2007; Beck & Warman, 2004).

The concept of insight is of great interest to the field of research on serious mental illnesses. Insight deficits have been noted as an attribute of serious mental illness since the beginning of the 20th century. Insight was previously viewed as a dichotomous construct; an individual acknowledged that he or she had had an illness or did not. Insight has come to be viewed as a more dynamic principle that involves not only awareness of having an illness, but also the individual’s ability to reflect on their perceptions and beliefs and to integrate new information.

**Insight and symptomatology.**

Research is somewhat mixed as to the relationship between positive, negative, and disorganized symptoms of serious mental illnesses and clinical and cognitive insight (Smith et al., 2000; Mintz et al., 2003). In a report on 40 published studies concerning insight and psychotic symptoms, Mintz et al. (2003) found that many reported a small positive relationship between clinical insight and global positive and negative symptoms and a small positive relationship between clinical insight and depressive symptoms in people diagnosed with schizophrenia. Others have reported no relationship between insight and symptoms (Lysaker & Bell, 1994; Cuesta & Peralta, 1994). There is less research regarding the relationship between cognitive insight and psychotic symptoms. Bora et al. (2007) found that both overconfidence in judgment
and impaired self-reflectiveness, both components of cognitive insight, were associated with acute psychosis. One study on cognitive insight found a negative relationship between cognitive insight and positive psychotic symptoms (Granholm et al., 2005).

**Insight and treatment adherence.**

Clinical insight has been linked to higher levels of adherence to treatment in populations diagnosed with serious mental illnesses (Bollini et al., 2004); more specifically, adherence to drug therapy has been correlated with higher insight (Bartko et al., 2004; Trauer & Sacks, 2000; Mala, 2010; Yen et al., 2005). Not much research has been conducted measuring the relationship between clinical insight and treatment adherence, when adherence is operationalized as the client’s adherence to treatment goals and to the means of attaining that goal (Buckley et al, 2007; Rathod et al., 2005). Even less research has been conducted to measure cognitive insight’s relationship to both medication compliance and treatment adherence (Granholm et al., 2006). A potential cause of the lack of research, which is currently being addressed by a paradigm shift in mental health treatment models, is disagreement on goals between providers of care and those receiving it.

**The Recovery Movement**

No one definition of recovery fully encompasses the breadth and complexities implicit in the construct. A complete definition of recovery must acknowledge both the internal, personal factors as well as external, scientific, and policy issues that contribute to treatment and living environments in which people will thrive (Davidson & Roe, 2007; Jacobson & Greenley, 2001). Internal factors that contribute to an individual’s recovery encompass a wide array of elements, including hope, empowerment, self-determination, and inclusion in community life; external
factors include governmental and treatment facility policies that both empower and include the individuals in recovery (Bellack, 2006).

**Definition of recovery.**

Much of the research on the recovery movement and recovery principles acknowledges that there are many different definitions of recovery, which all have different implications for individuals in recovery and recovery-based research (Andresen et al., 2003; Bellack, 2006; Davidson et al., 2005; Davidson et al., 2006; Jacobson & Greenley, 2001; Silverstein & Bellack, 2008). Much of the current research on recovery is devoted to developing a comprehensive understanding and definition of recovery that 1) takes into account the experiences of individuals in recovery and 2) can be used to guide recovery oriented research (Andresen et al., 2003; Davidson & Roe, 2007; Jacobson & Greenley, 2001). In evaluating a useful and functional definition of recovery, distinctions must be made between a medical model-oriented definition of recovery and a consumer-focused definition of recovery.

**Medical model definition of recovery.**

Davidson and Roe (2007) and Bellack (2006) make an important distinction between “recovery from” and “recovery in” definitions of recovery. Medically-oriented definitions of recovery fall into the “recovery from” category. Recovery is defined as an amelioration of symptoms or functional deficits that returns the individual diagnosed with a serious mental illness to their level of functioning before the onset of their illness (Davidson & Roe, 2007; Davidson et al., 2005). This definition of recovery assumes that there is a set level of functioning that is the goal of recovery, and that the signs, symptoms, and deficits caused by a mental illness can also be quantified (Bellack, 2006; Silverstein & Bellack, 2008). In this definition of recovery, recovery is an outcome, presumably resulting from some form of treatment (Bellack,
This definition of recovery has been used by the scientific community in studying the efficacy of treatments for serious mental illnesses in relieving symptoms and improving functioning (Bellack, 2006; Silverstein & Bellack, 2008).

This definition of recovery is very similar to a medical model of recovery that is applied to both chronic and acute medical/physical conditions and diseases (Davidson & Roe, 2007). Treatments for asthma or diabetes are evaluated by their efficacy in relieving symptoms and decreasing side effects for the individual. One drawback of this definition of recovery, despite its usefulness in scientific research, is that it assumes that people diagnosed with serious mental illness can and will access treatments. It also assumes that these individuals will utilize, comply with, and benefit from the treatments available for their disorders just as would someone treated for a physical condition, even though it is well known that treatment adherence is a problem in all chronic and acute medical health conditions (Davidson & Roe, 2007). A second drawback is the assumption that relief of symptoms, or return to levels of functioning before the onset of a disorder, equals a full recovery. The reality for many individuals in recovery is that there may be more to recover from in life than just the symptoms of the illness (Andresen et al., 2003). Although certainly important to recovery, decreasing symptoms and improving functioning alone do not decrease stigmatization by society or the alienation from family or peers that are often experienced by people diagnosed with mental illnesses.

**Consumer-focused definition of recovery.**

Though the outcome-focused, medical definition of recovery from serious mental illness encompasses important factors, oftentimes symptom reduction and improving functioning alone are not sufficient outcomes for a person in recovery (Chamberlin, 1978; Jacobson & Greenley, 2001; Roe & Chopra, 2003). Additionally, full-symptom recovery is not a feasible outcome for
many individuals with serious mental illnesses, and/or some individuals may choose not to recover from some of their symptoms despite treatments available to do so. Early proponents of the consumer-survivor movement stressed the factors that are important to what Davidson and Roe (2007) refer to as “recovery in” serious mental illness. The purpose of the consumer-driven definition is to provide support to consumers and family members, also targeting politicians and public policy regarding the treatment of people diagnosed with serious mental illnesses (Bellack, 2006; Frese & Davis, 1997). In the consumer-focused definition, “recovery refers to a person diagnosed with a serious mental illness reclaiming his or her rights to a dignified, and personally meaningful and gratifying life in the community while continuing to have a mental illness” (Davidson & Roe, 2007). The journey toward recovery of a meaningful life is the focus of this model, rather than the illness-focused outcomes that are at the heart of the scientific model (Bellack, 2009; Mead & Copeland, 2000).

**History of recovery movement.**

While both internal and external factors must be considered in a comprehensive definition of recovery, two separate though complementary movements must be considered when looking at the history of the recovery movement: the consumer-survivor movement (Frese & Davis, 1997) and the nearly thirty years of clinical research informing official policy on mental health treatment (Davidson & Roe, 2007; Jacobson & Greenley, 2001).

**The consumer movement.**

The most recent roots of the modern recovery movement began to grow contemporaneously with the Civil Rights Movement in the 1960s and 1970s. At the time, separate groups of ex-patients of mental hospitals throughout the United States began to organize to support their peers and to push for change in mental health policy (Frese & Davis, 1997;
Davidson & Roe, 2007). Groups of both those diagnosed with mental illnesses and their family members, such as the National Alliance of Mental Illness (NAMI) formed in 1979, challenged the accepted treatments of the time. They began to realize that people who were diagnosed with mental illness and had been forcibly hospitalized or coerced into treatment were denied basic rights guaranteed to them by law. Consumer-survivor groups also began to challenge the societal stigma that the medical model of defining mental illness perpetuated (Davidson et al., 2005; Frese & Davis, 1997).

The consumer-survivor movement, which took shape in the 1970s, developed directly from the experiences of people who were diagnosed with mental illnesses and forced into asylums and hospitals (Chamberlain, 1990; Frese & Davis, 1997). These individuals fought to overcome the overwhelmingly negative stigma that a diagnosis or hospitalization signified: for example, that they served no role in society. According to the consumer-survivor movement, the stigmatization of individuals with mental illnesses often included, coincided with, or resulted in poverty, substandard housing, unemployment, loss of identity, loss of control of one’s life, and loss of a sense of self and purpose in one’s life (Davidson et al., 2005). These correlates of discrimination were compounded by the short- and long-term negative and often traumatic effects of involuntary commitment and forced treatment, which was, and continues to be, prevalent among those diagnosed with mental illnesses (Davidson et al., 2007; Davidson & Roe, 2007; Frese & Davis, 1997). Not only did the consumer-survivor movement seek to abolish involuntary hospitalization and forced treatment, it also fought against the use of “mental illness” as a medical classification system (Chamberlain, 1990; Frese & Davis, 1997). Opponents to the classification of mental illnesses felt that unlike other medical diagnoses, those pertaining to mental disorders were so stigmatized by society that placing this label on a person forced that
individual to conform with these roles (Bellack, 2006). It was argued that a diagnosed individual would be socialized into experiencing and internalizing all of the previously mentioned forms of stigmatization, creating what some would call a self-fulfilling prophecy. The consumer-survivor movement continues to advocate that mental illnesses and symptoms be viewed as only one small part of what defines a person (Andresen, Oades, & Caputi, 2003; Davidson & Roe, 2007; Davidson et al., 2005, 2007). This also included a shift in how to refer to individuals who are receiving services. One of the earliest and still-valid shifts brought about by the consumer-survivor movement is the use of the term “consumer” to designate a person diagnosed with a mental illness in recovery, as opposed to the medical model’s use of the term “patient” (Schiff, 2004).

**Consumer movement to the recovery movement.**

The current notion of the recovery movement began to take shape throughout the 1980s, while the consumer-survivor movement, which was founded in the 1970s, flourished and began to have an impact on governmental and public policy concerning the treatment of individuals diagnosed with serious mental illness (Andresen, Oades, & Caputi, 2003; Davidson & Roe, 2007; Davidson et al., 2005; Frese & Davis, 1997; Jacobson & Greenley, 2001). More first-person accounts were published throughout the 1980s written by individuals who were diagnosed with such serious mental illnesses as schizophrenia chronicling their own recovery (Frese & Davis, 2007; Jacobson & Greenley, 2001; Schiff, 2004). The recovery stories focused on the individuals’ personal struggles when first given a diagnosis, which implied a life-long and hopeless disorder (Andresen et al., 2003). Despite the chronic trajectories implied by their medical diagnoses, individuals such as the psychologist Patricia Deegan (1988) documented their work to overcome hopelessness and stigmatization in their recovery process in order to enjoy a
fulfilling and gratifying life (Andresen et al., 2003; Deegan, 1988; Jacobson & Greenley, 2001; Schiff, 2004).

The recovery movement was not only a social movement driven by consumer-survivors in order to challenge stigmatization and public policy but was also supported by research. The 1970s and 1980s also saw the publication of landmark research studies that lead to modification of views of serious mental illness and its prognosis (Andresen et al., 2003; Davidson & Roe, 2007; Davidson et al., 2005; Jacobson & Greenley, 2001; Sartorius et al., 1974). Prior to their publication, the traditional medical view of serious mental illness categorized it as a progressive deterioration of functioning throughout the individual’s lifespan (Davidson & Roe, 2007). In 1966, the World Health Organization (WHO) conducted one of the first longitudinal studies of serious mental illness around the world (Sartorius et al., 1974). The WHO study was the beginning of the research in the 1970s and 1980s that began to show that serious mental illnesses such as schizophrenia were not necessarily life-long, damaging, and degenerative disorders pervading every facet of an individual’s life (Harding et al., 1987; Jablensky et al., 1980). The research showed that between 25-65% of each sample of people diagnosed with serious mental illnesses maintained partial or full recovery. Recovery in these studies was defined as amelioration of symptoms and deficits in functioning associated with serious mental illnesses to the degree that the diagnosed individual was able to resume daily functioning within a normal range (Harding et al., 1987; Jablensky et al., 1980). These studies suggested that between one-fourth and two-thirds of individuals diagnosed with a serious mental illness were able to engage in social, vocational, and personal activities despite their mental illness. Some of the figures and results from these groundbreaking studies may be somewhat skewed, because at the time a different version of the Diagnostic and Statistical Manual was in use that employed somewhat
liberal criteria to define some of the serious mental illnesses. However, despite these limitations, the impact of these longitudinal studies on the field of psychology’s understanding and treatment of serious mental illness is present most prominently in the recovery movement. This movement and the resulting paradigm shifts in mental health services and treatment emphasize returning to personally defined and acceptable levels of functioning, not the medical model definition of returning to premorbid functioning status and becoming completely symptom-free (Harding et al., 1987; Jablensky et al., 1980; Sartorius et al., 1974).

Two recent documents released by the federal government show the effect these longitudinal studies have on politics and policy regarding mental health treatment. In 1999, a report from the Surgeon General on mental illness declared that all treatment should be consumer- and family-oriented and that recovery should be the ultimate goal (Bellack, 2006). Though this was not legal policy, the report caused state and municipal mental health systems to consider recovery as a primary goal of treatment (Bellack, 2006; Drake et al., 2003). In 2003, the President’s New Freedom Commission on Mental Health called for a transformation of the mental health system to a recovery-focused system (Farkas et al., 2005). These landmark statements by the federal government reinforced the shift in mental health care to a recovery-oriented system.

The research that influenced the development of the recovery movement did not focus only on the long-term trajectories of mental illnesses. Other research focused on the various domains of functioning that are impacted by mental illnesses (Davidson et al., 2006; Wiersma et al., 1995). Rather than viewing mental illnesses as conditions that incapacitate the entire functioning of an individual, research focused on specific and separate domains, such as occupational or social functioning (Chamberlin, 1978; Jacobson & Greenley, 2001). This line of
research indicated that each domain could be affected separately by symptoms and side effects of mental illness, or could not be affected at all. Additionally, mental illnesses themselves began to be viewed as multi-dimensional disorders impacting separate and distinct domains of functioning (Davidson & Roe, 2007). For instance, an individual may suffer deficits in occupational functioning due to mental illness, but may experience no difficulties in the social domain. Also, a person may experience clinical deficits such as hearing voices but not suffer in other domains. Based on this research and its emphasis on separate and distinct domains of functioning, the proponents of the recovery movement developed the concepts of symptomatic recovery, partial recovery, and social/occupational/vocational functioning (Davidson & Roe, 2007).

**Constructs of recovery.**

Though there is no single widely used definition of recovery, recovery comprises several components, often called “principles,” that are frequently cited (Sheedy & Whitter, 2009). The Substance Abuse and Mental Health Association (SAMHSA), in an effort to guide recovery-based systems of care, identified twelve principles of recovery. The twelve principles were selected by consumers and grounded in research regarding the recovery paradigm. The twelve principles identified by SAMHSA are:

1. There are many pathways to recovery.
2. Recovery is self-directed and empowering.
3. Recovery involves a personal recognition of the need for change and transformation.
4. Recovery is holistic.
5. Recovery has cultural dimensions.
6. Recovery exists on a continuum of improved health and wellness.
7. Recovery emerges from hope and gratitude.
8. Recovery involves a process of healing and self-redefinition.

9. Recovery involves addressing discrimination and transcending shame and stigma.

10. Recovery is supported by peers and allies.

11. Recovery involves (re)joining and (re)building a life in the community.


These twelve principles are also reflected in many different forms throughout the diverse research literature on recovery. In a review of this literature, Davidson et al. found nine common elements of recovery contributing to a broader definition of recovery:

- a redefinition of one’s illness as only one aspect of a multidimensional sense of self capable of identifying, choosing, and pursuing personally meaningful goals and aspirations despite continuing to suffer the effects and side effects of mental illness. (Davidson et al., 2005 pg. 483).

The recovery movement developed from the need for society to address its treatment, view, and definition of individuals diagnosed with serious mental illnesses. People receiving treatment for mental illnesses and their families organized in order to address stigma, discrimination, and deficits in humane treatments at both the individual and societal levels. By acknowledging the need for change and pushing for that change, several important themes and principles were highlighted by the recovery movement. The current study will focus on the principles of hope and self-stigma. These two principles have been shown to interact in predicting one’s level of insight, and both seem to play a role in one’s treatment adherence.

**Hope.**

The construct of hope is often the initial element of any definition or conceptualization of recovery (Davidson et al., 2005). Hope is regarded as especially important for individuals
diagnosed with serious mental illnesses. Proponents of the recovery movement postulate that being diagnosed with a serious mental illness implies a potentially lifelong struggle and often decreases a person’s sense of hope for their future (Deegan, 1996). Developing a sense of hope and fostering a personal sense of purpose is thought to be key to one’s recovery (Deegan, 1996; Mead & Copeland, 2000). One of the most widely recognized and utilized hope theories was developed by Snyder (2002). Snyder (2002; Snyder et al., 2000) defined hope as a learned pattern of thinking that helps a person reach a defined goal. Hope is postulated to be a set of beliefs and thoughts involving two distinct ways of thinking about a goal: pathway thinking and agentic thinking. Pathway thinking involves thoughts about the means of obtaining goals; agentic thinking involves thoughts related to a person’s motivation to accomplish the goal. Hope, according to Snyder, also involves a person’s belief in his or her ability to pursue goals. There is a reciprocal relationship between a belief in ability to pursue goals and hopeful thinking; believing in the ability to reach a goal strengthens hopeful thoughts, which increases hopeful beliefs (Shorey et al. 2002). To engage in hopeful thinking, one must first establish goals. Next, hopeful thinking requires seeking out effective pathways for reaching the desired goals. After that, one must summon motivation to use the pathways to reach the goals (Shorey et al., 2002; Snyder et al., 2000, 2003). Increased hope is consistently related to better outcomes in academics, athletics, physical health, psychological adjustment, and psychotherapy (Snyder, 2002). Hope is also related to positive affect and perceived control (Curry et al. 1997).

Individuals diagnosed with serious mental illnesses often lack resources and abilities to seek out and perceive pathways toward their goals. They may also lack the belief that they are able to achieve their goals, which in turn decreases their motivation to identify and work toward personal goals. The concept of recovery emphasizes hope as an early part of the recovery process
for these very reasons. Inability to access resources, decreased family and social contact, and isolation, which are prevalent among individuals diagnosed with serious mental illness, further decrease perceived pathways toward goals and hope.

Hope is a construct, as defined by Snyder et al. (2000; 2003), that allows individuals to acknowledge and utilize their resources in order to reach their goals. Individuals diagnosed with serious mental illnesses often exhibit decreased hope, which impedes progress toward their goals. They may also experience negative views of themselves, which are often informed by societal stigma, that may also decrease hope and progress towards goals.

Self-stigma.

The concepts of stigma and self-stigma have been a focus of the recovery movement since its inception in the early 1970s (Bellack, 2006). Some of the first goals of the consumer-and recovery- movements were to address society’s negative and often biased attitudes towards individuals with mental health diagnoses. Stigma has been broadly defined as a social-cognitive process involving, cues, stereotypes, prejudice, and discrimination (Corrigan, 2004). According to Corrigan (2004, 2000), there are four cues by which people infer that a person has a mental illness: psychiatric symptoms, social skills deficits, physical appearance, and labels. It is theorized that people respond to these cues in a heuristic way. That is, people observe any or all of these four cues and infer that a person who exhibits the cues must fit into the broadly defined heuristic of mental illness (Corrigan, 2004). The mental heuristics are often stereotypical representations of individuals with mental illnesses and often include bizarre behavior, violent tendencies, incompetence, and blame (Corrigan, 2000; Feldman & Crandall, 2007). These stereotypes, which are often unconscious and rely on rapid mental processes, lead to prejudice. Prejudices are attitudes, as opposed to stereotypes, that are beliefs and involve an evaluative and
often negative component, especially when it comes to serious mental illness (Corrigan, 2004; Feldman & Crandall, 2007; Kleim et al., 2008). Prejudicial attitudes then lead to discrimination, which is the behavioral manifestation. Cues cognitively activate stereotypes, which affectively activate prejudice, which behaviorally activate discrimination.

The general public creates stigma, but if and how each individual internalizes that stigma has been shown to have effects in many domains of symptoms and treatments. A person diagnosed with a mental illness who lives in a culture steeped in stigma and stigmatizing images often internalizes that stigma (Feldman & Crandall, 2007; Corrigan, 2004; Rusch et al., 2006). Internalized self-stigma has been shown to have an effect on one’s self-esteem, self-efficacy, confidence, hope for one’s future, and treatment-seeking and treatment adherence (Corrigan, 2004; Kleim et al., 2008 Lysaker et al., 2007). In other words, people who internalize the public stigma that mental illnesses are “bad” and that people affected by them are incompetent and have nothing to contribute to society, have been shown to exhibit low self-esteem and to feel ashamed of themselves (Corrigan et al., 1999). They feel that they are unable to accomplish their goals in life (Link, 1987 in Corrigan, 2004), which leads to decreased hope about the future (Lysaker et al., 2007).

Social psychological principles suggest why self-stigma would lead a person to deny that they have a mental illness and to avoid treatment (Jost & Benaji, 1994 in Corrigan, 2004). In order to avoid the negative judgments and attitudes associated with mental illnesses and to not suffer discrimination, individuals will deny the existence of a mental illness to protect themselves (Watson & River, 2005). Self-stigma has been associated with one’s insight into a disorder. Lysaker and colleagues conducted a research study examining self-stigma as a mediating factor between a person’s perceived hope and insight into his or her disorder. Lysaker
et al. studied these phenomena because of the contradictory research surrounding insight and its outcomes for individuals with serious mental illnesses. Briefly put, decreased clinical insight has been linked to poor treatment adherence, poor social functioning, and increased symptoms, but increased clinical insight has been linked to decreased self-esteem and hope. Lysaker et al. posited that a person’s acceptance of the negative attitudes displayed by society about having a mental disorder (self-stigma) may determine the role insight plays in one’s experience of hope.

Lysaker et al. (2007) assessed 75 individuals diagnosed with schizophrenia spectrum disorders using measures of insight, symptoms, hope, self-esteem, and self-stigma. Three groups were produced based on results: low insight/mild stigma, high insight/minimal stigma, and high insight/moderate stigma. Results suggested strongly that individuals with high insight/moderate self-stigma had the lowest levels of hope and self-esteem and that individuals with high insight/minimal stigma had less impaired social functioning. This study’s generalizability is somewhat limited, because the sample consisted of mostly middle-aged men. Also, the researchers used the Beck Hopelessness Scale to measure perceived hope rather than using a scale that measured hope itself. Despite these limitations, the concepts and results posited by Lysaker et al. suggest that there is not a direct relationship between hope and insight into one’s disorder, but self-stigma mediates this relationship. The level to which an individual internalizes the negative attitudes that society attaches to mental illnesses may play a role in determining that individual’s perception of their hope about the future, as well as the degree to which he or she acknowledges having a disorder (Lysaker et al., 2007). Both hope and insight, as discussed earlier in this study, have been shown to play a role in one’s treatment adherence.
Justification of Study

In individuals diagnosed with serious mental illnesses, cognitive insight involves the ability to identify erroneous beliefs, distorted thoughts, misinterpretations, and anomalous experiences associated with psychotic symptomatology (Perivoliotis et al., 2009; Perivoliotis & Cather, 2009; Beck et al., 2004). Cognitive insight also relates to the ability to reality-test these interpretations, to identify supporting and disproving evidence for distorted thoughts or hallucinations, and to use this corrective feedback to adjust thoughts and conclusions (Perivoliotis et al., 2009; Beck et al., 2004). It is crucial to differentiate cognitive insight from clinical insight because of the usefulness and necessity of identifying one’s ability to evaluate and adjust distorted beliefs and experiences, especially in a clinical population whose disorders are defined by distorted beliefs and experiences. The ability to evaluate information accurately and adjust distorted thinking is highly relevant when discussing individuals’ treatment adherence, sense of hope, and internalized self-stigma. Individuals with low cognitive insight who are unable to self-reflect on their psychotic symptoms and exhibit an over-confidence in their delusional beliefs are less likely to acknowledge that they have a disorder, which may make them less likely to adhere to their psychiatric treatment and less likely to engage in a process of recovery both in and from their disorder. Conversely, individuals with higher levels of cognitive insight who can more accurately appraise their symptoms may acknowledge the need for treatment and engage with treatment providers. These individuals may also experience less hope for their future if they have high self-stigma, or more hope if they have low self-stigma. Their level of perceived hope may also play a role in their engagement in their treatment. The current study will review the roles of the interrelated principles of cognitive insight, clinical insight,
hope, and self-stigma, as well as symptomatology, in treatment adherence among individuals diagnosed with serious mental illnesses.
Chapter Three

Hypotheses

1. Adherent study participants will have higher scores on measures of both cognitive insight and clinical insight, will have higher scores on a measure of hope, will have lower scores on a measure of self-stigma, and will have lower scores on a measure of symptomatology.

2. Scores on the cognitive insight measure (BCIS) will be positively correlated with scores on the Birchwood Insight Scale (IS).

Justification for Hypotheses

Clinical insight has been linked to higher levels of adherence to treatment in populations diagnosed with serious mental illnesses (Bollini et al., 2004); more specifically, adherence to drug therapy has been correlated with higher clinical insight (Bartko et al., 2004; Trauer & Sacks, 2000; Mala, 2010; Yen et al., 2005). Less research has been conducted measuring clinical insight’s relationship to treatment adherence regarding the client’s treatment goals and compliance with means of attaining that goal (Buckley et al, 2007). Even less research has been conducted to measure cognitive insight’s relationship to both medication compliance and treatment adherence (Granholm et al., 2006). Based on the aforementioned theory and research on cognitive insight, it appears that increased cognitive insight will also result in increased treatment adherence as measured by the study’s designed treatment adherence tool.

Clinical insight has been shown to have a negative relationship with perceived hope in populations diagnosed with serious mental illness, especially for those diagnosed with schizophrenia spectrum disorders (Lincoln et al., 2007; Hasson-Ohayon et al., 2009; Lysaker, 2005, 2007). Increased clinical insight has also been shown to have a positive relationship with hopelessness (Lysaker, 2005, 2007; Carroll, et al., 2004) and depression, a disorder often marked
by hopelessness (Iqbal et al., 2000). The author of the current study hypothesizes that those individuals with increased cognitive insight, which is the ability to evaluate and adapt current thought processes, will also experience less hope than those with lower cognitive insight.

Self-stigma has been associated with levels of hope, clinical insight, and cognitive insight (Lysaker et al., 2005, 2007; Mak & Wu, 2006). In a study by Lysaker et al. (2007), low levels of self-stigma have been correlated with higher quality of life if an individual also has high insight. High levels of self-stigma and concurrent high insight have been correlated with low levels of hope. Low self-stigma has also been correlated with increased acknowledgement of illness, increased desire for treatment, and increased treatment adherence (Corrigan, 2004). Although increased hope has been associated with increased treatment adherence, the author hypothesizes that those with less self-stigma, which may lead to more hope, will be more treatment adherent.

Research is somewhat mixed concerning the relationship between positive, negative, and disorganized symptoms of serious mental illness and clinical and cognitive insight (Smith et al., 2000; Mintz et al, 2003). In a report on 40 published studies regarding insight and psychotic symptoms, Mintz et al. (2003) found that many reported a small positive relationship between clinical insight and global positive and negative symptoms and a small positive relationship between clinical insight and depressive symptoms in people diagnosed with schizophrenia. Others have reported no relationship between insight and symptoms (Lysaker & Bell, 1994; Cuesta & Peralta, 1994). Research is scarce regarding the relationship between cognitive insight and psychotic symptoms. Bora et al. (2007) found that both overconfidence in judgment and impaired self-reflectiveness, both constructs of cognitive insight, were associated with acute psychosis. In a study on cognitive insight, Granholm et al. (2005) found a negative relationship
between cognitive insight and positive psychotic symptoms. The author of the current study hypothesizes that increased ability to evaluate and assess one’s distorted thinking and anomalous experiences as measured by the BCIS will result in decreased psychotic symptomatology.

Though cognitive insight and clinical insight scales seem to measure different aspects of the construct of insight, early studies of the BCIS have shown that it has significant convergent validity with the SUMD (Beck et al., 2004). Pedrelli et al. (2004) showed that the BCIS was mildly yet positively correlated with the IS. Based on the findings of these prior studies, the author of the current study hypothesizes that scores on the BCIS will be positively correlated with scores on the IS. If this hypothesis is supported, it will further validate the BCIS as an accurate assessment of both cognitive and clinical insight.
Chapter Four

Methodology

Overview

The following study looked at the relationships between levels of clinical and cognitive insight with participants’ reports of levels of hope, self-stigma, and symptomatology in the prediction of adherence to treatment goals among a population of individuals diagnosed with serious mental illnesses. Clinical insight, described for the purposes of this study as the knowledge that one has an illness, and to a lesser extent cognitive insight, defined as one’s ability to challenge and shift maladaptive beliefs present in serious mental illness, have both been shown to correlate with treatment adherence, self-reported levels of recovery constructs, and symptomatology in populations similar to the sample of interest in this study. The study sought to provide additional support for the concept of cognitive insight as predicting levels of adherence and establishing its relationships to recovery constructs and levels of mental illness symptomatology (Beck et al., 2004).

Design and Design Justification

The study used a correlational non-experimental design to review the relationships between the predictor variables of cognitive insight and clinical insight, perceived level of hope, level of self-stigma, symptomatology, and the outcome variable of service engagement/treatment adherence. The study used a correlational, non-experimental design rather than a randomized control design, because the researcher was not able to manipulate or experimentally control variables. The variables of interest, hope, self-stigma, insight, and symptoms are naturally occurring, and the study examined their relationships with each other and with the outcome variable of interest in treatment adherence.
Participants

The current study used a sample of individuals diagnosed with serious mental illnesses who were receiving treatment under the Assertive Community Treatment team model of outpatient treatment. ACT teams were developed in the early 1970s as a comprehensive treatment source that would house several normally disjointed outpatient services under one roof (Latimer, 2005). ACT consists of an interdisciplinary team made up of psychiatrists, psychiatric nurses, and other mental health treatment providers, including employment specialists, drug and alcohol specialists, and therapists. Over the years, ACT teams have shifted to include principles of recovery in their treatment models and services, such as supported employment and fair housing options (Drake & Deegan, 2007). The ultimate goals of any ACT team are to empower clients to live safely and independently in the community and to instill the skills necessary to do so, to assist clients to reach their determined goals, to alleviate psychiatric symptoms, and to deter inpatient hospitalizations. The ACT team participating in this study uses the recovery model as the basis for treatment with clients. Clients meet with their primary case manager on the ACT team every six months to review their goals and to discuss and identify at least two goals of treatment.

The eligible participants of this study were 204 clients being treated by two Horizon House Assertive Community Treatment (ACT) Teams throughout southeastern Montgomery County and Delaware County in the southeastern region of Pennsylvania. Both programs serve individuals from young adults (age 18) to older adults (age 75). Ninety-six of the clients are male; 108 are female. Seventy-two percent of the clients are Caucasian, 25.5% are African American, 2% are Asian, and .5% are American Indian or Native Alaskan. Fifty-seven percent are dual-diagnosed with a concurrent substance abuse disorder. All participants, as part of working with
the ACT Team, were diagnosed with one or more serious mental illnesses as part of their Axis I
and/or Axis II DSM-IV-TR diagnosis, including schizophrenia, schizoaffective disorder, bipolar
I and II disorders, major depression, and borderline personality disorder.

**Inclusion and Exclusion Criteria**

**Inclusion criteria.**

Inclusion criteria for this study were status as a client/consumer with the Horizon House ACT Team of Montgomery County or Delaware County who has been diagnosed with at least one serious mental illness as part of their Axis I and/or Axis II DSM-IV-TR diagnosis, including schizophrenia, schizoaffective disorder, bipolar I and II disorders, major depression, and borderline personality disorder; who is 18 years of age or older; and who lives within the designated coverage area that the ACT team serves in southeastern Montgomery County. Participants also needed to speak and understand English at a 6\(^{th}\) grade level in order to complete study surveys.

**Exclusion criteria.**

Exclusion criteria for the study were a person not being his or her own legal guardian or a documented impairment of their ability to make informed consent decisions.

**Screening Procedures**

Screening for eligibility for participation in the study was done via chart review and review of the ACT Team census for information regarding guardianship.

**Recruitment**

Participants were informed of their ability to volunteer for the study through several recruitment strategies. First, flyers were placed in the ACT offices and distributed to clients at their homes via ACT staff. The flyer informed individuals of the criteria for participation
requiring individuals to be an ACT client, 18 years of age or older, and their own legal guardian. Potential participants called the student researcher at his designated office number to obtain more information about the study and/or to make an appointment to come in for the informed consent procedures and completion of survey instruments. If ACT clients were interested in participating but worked during the day or lived in an area without public transportation or Transnet services, the consent procedure and survey completion would be conducted at the client’s home, though this situation did not arise. Participants were offered lunch at the survey site and were enrolled in a drawing for a $50 gift card from a local convenience store. Transportation to the ACT Team site was provided via the ACT Team staff or Transnet, an insurance-funded transportation service. Participants who came to the ACT office had all of their questions regarding the study answered. They were then asked to complete the informed consent procedure.

**Plan for Informed Consent Procedures**

Informed consent for the study was required from each participant before participation in the study. Participants were provided with the basic information that the study involved research, an explanation of the purpose of the study, the expected duration of their participation, potential risks and benefits of participation, plans for maintaining confidentiality of the participant’s personal information, and informed that participation was voluntary and that no penalty or change in their treatment from the ACT Team would result from not participating in the study. This information was given to the clients both verbally and in a document that the client was required to sign. Individuals were assessed for their capacity to consent to being part of the study. This was typically done by asking a potential participant a set of questions following the informed consent process, for example, “Can you tell me in your own words what we will ask you to do if you agree to be part of the study?” and “Do you have to answer all of the
interviewers questions?” These questions focused specifically on the patients’ understanding that participation in the study may not benefit them directly, and that participation in the research was completely voluntarily. These answers were reviewed; if an individual was judged by the research staff to lack the capacity to give informed consent, the individual was not included in the study.

**Measures**

**Beck Cognitive Insight Scale.**

The Beck Cognitive Insight Scale ([BCIS] Beck et al., 2004) is a 15-item self-report measure designed to assess how individuals evaluate their own judgement as well as objectivity and self-correction. The scale has two factors, Self-Reflectiveness and Self-Certainty. A composite score is determined by subtracting the Self-Certainty score from the Self-Reflectiveness score. People with low cognitive insight will have low Self-Reflectiveness scores, high Self-Certainty scores, and low composite scores. The coefficient α for the Self-Reflectiveness scale is 0.68 and 0.60 for the Self-Certainty scale in the original sample (Beck et al., 2004). The scale also demonstrates, based on the original sample, good convergent, discriminant, and construct validity. Composite scores were significantly correlated with awareness of a mental illness on the Scale to Assess Mental Disorder (SUMD); composite scores differentiated psychotic patients from non-psychotic patients, and scores have been negatively correlated with both positive and negative psychotic symptoms (Warman & Martin, 2006; Colis, Steer, & Beck, 2006; Beck et al., 2004; Pedrelli et al., 2004). The BCIS was also shown to be an effective tool in assessing cognitive insight among people diagnosed with major depression and bipolar disorder (Colis, Steer, & Beck, 2006; Engh et al., 2007).
Insight Scale.

The Insight Scale ([IS] Birchwood et al., 1994) is another brief, self-report measure of insight. There are 8 items, which are statements such as “I am mentally well” and “I do not need medication” that the participant rates as “Agree,” “Disagree,” or “Unsure.” The measure has strong validity and reliability and is often used in research studying insight among people diagnosed with serious mental illness (Birchwood et al., 1994; Mintz et al., 2003; Sturman & Sproule, 2003). The IS measures awareness of illness, need for treatment, and cause of symptoms, which are present in the majority of standardized instruments measuring insight (Pedrelli et al., 2004). For this reason, the IS will be used as a measurement of clinical insight for this study.

Self-Stigma of Mental Illness Scale.

The Self-Stigma of Mental Illness Scale (SSMIS) is a 40-item self-report measure of internalized self-stigma regarding mental health diagnoses (Corrigan, 2008). The SSMIS measures four constructs with ten items for each: stereotype awareness (Aware), stereotype agreement (Agree), stereotype self-concurrence (Apply), and self-esteem decrement (Hurts Self). Participants are presented with items such as “I think the public believes most people with mental illness cannot be trusted” and “I think most people with mental illness are to blame for their problems” and are asked to rate their level of agreement on a 9-point Likert scale (Corrigan, 2008). Chronbach alphas for the subscales were found to be .89 for awareness, .80 for agreement, and .72 for self-concurrence (Corrigan, Watson, & Barr, 2006). The measure has demonstrated satisfactory internal consistency (from 0.64 to 0.87) and test-retest reliability (from 0.62 to 0.75) (Corrigan et al., 2006; Fung et al., 2007).
Hope Scale.

The Hope Scale ([HS] Snyder et al., 1991) is a 12-item self-report measure of individually perceived hope. Eight of the items assess the respondents’ level of hope, and four other items are used to disguise the nature of the test. Respondents rate the extent to which they agree or disagree with how much the statements in the items apply to them on a Likert scale. The HS consists of two factors, agency and pathways, based on Snyder et al.’s conceptualization of hope described in Chapter 2 of this study. Correlations between the subscales range from .38 to .46 (Snyder et al., 1997). Test-retest reliability ranged from .85 over a three-week period to .82 over a 10-week period. Internal consistency of the entire scale was reported as between .74 and .84. Using both a college student sample and psychological clinical samples, Snyder et al. found that the HS has convergent validity with self-esteem, control perceptions, hopelessness, and depression (Snyder et al., 1997; Steed, 2002).

Modified Colorado Symptom Index.

The Modified Colorado Symptom Index ([MCSI] Conrad et al., 2001) is a 14-item, self-report measure of psychological symptomatology designed for use with populations diagnosed with serious mental illness, substance abuse, or both. The MCSI is a modified version of the Colorado Symptom Scale, which was administered via interview. The items pose questions about symptoms commonly experienced by people with serious mental illnesses, and the respondent notes how often they have experienced the symptoms, if at all. In a national study with 1,381 participants, Conrad at al. (2001) found that the measure was both reliable and valid in measuring psychological symptoms for a given population. The content was found to be consistent with other measures of psychological symptoms. It has high internal consistency and
test-retest coefficients with good construct validity based on its relationships with other measures, and it is responsive to change (Conrad et al., 2001).

**Outcome measure: Service Engagement Scale.**

The author of the study will also administer a brief, self-designed tool to assess the participant’s understanding of their treatment goals and their perception of progress toward the identified goal/goals. The measure also includes an item for the participants’ case manager/primary mental health clinician concerning the participants’ progress towards their goals. The tool will consist of only three items, the first assessing the participants’ statement of one of their treatment goals, preferably their main treatment goal, the second assessing their perceived progress towards that goal, and the third assessing how their treatment providers rate the consumer’s perceived progress towards their goal. The first item will be a fill-in statement, which will be scored by researchers using a Likert scale of 1 to 5 to gauge how similar the response is to one of the goals in the participant’s treatment plan. The scores will range from “No resemblance to goal” (1) to “Exact statement of goal” (5). Agreement of scores will refer to the content of the goal, not the ability of the client to restate the goal in the exact wording on their treatment plans. The second and third items will present the participant with a Likert scale from 1 (“No progress toward goal”) to 5 (“Much progress toward goal”). The purpose of the tool is to measure the participants’ self-reported level of adherence to their treatment plan, which is developed every six months collaboratively with their ACT Team case manager and reviewed every three months. Scores of item 1, item 2, and item 3 will be combined for an overall possible score of adherence ranging from 3-15. For example, if a consumer knows their goal well, they might obtain a score of 4 but indicate that they have made no progress; their ICM/mental health worker agrees, this would give this participant a total score of 5. Participants who endorse goals
that are not part of their treatment plan and assert progress on these goals will not have their progress scores counted.

Although there are numerous published adherence/service engagement tools available, many of them focus only on medication adherence or reports from treatment providers. This tool will be used because it focuses on the participant’s progress toward their treatment goals, which is a more recovery-oriented way to describe treatment adherence. The third item on the tool is designed to include the participants’ treatment provider’s perception of their treatment adherence. Collaboration between treatment providers and clients in defining and attaining treatment goals is also a tenet of the recovery movement.

Procedure

The researcher posted fliers for the study in the ACT offices and distributed the fliers to participants’ homes with assistance from ACT staff. The flier contained the researcher’s phone number, and stated that the participant could call or stop in the office to inquire about the study and to express interest in participating. Once the informed consent process was completed, participants completed research interviews in groups of 4-8 persons. Participants gathered at the ACT Team site in Norristown, PA, and in Swarthmore, PA, on the days of the study. All participants were randomly given a code number on their survey packet in order to protect their identity. Participants were then given three choices: to complete the self-report surveys individually at their own pace in a room with other participants, to complete the surveys in a separate room if they did not feel comfortable completing the surveys in the presence of others, or to have the surveys read aloud to them by a research assistant. The researcher and research assistant documented the participants’ choices about completing the surveys. Once completed, the participants returned their survey packets to the researcher or research assistant, who ensured
that the surveys were completed and coded effectively. Participant survey packets, coding
information, and all other documents from the study were given to the researcher. The researcher
scored all relevant surveys and compared participants’ self-reported treatment goals to the
treatment goals identified in their charts.

**Analysis of Risk/Benefit Ratio**

**Potential risk to participants.**

This research was judged to carry only minimal risk, meaning that the research introduces
no qualitatively different risks than typically encountered by individuals who receive services
from Horizon House. One risk of participation in this study was that participants may have
considered some questions as too personal or embarrassing. Participants did not have to answer a
question if they did not want to. There is always a risk of loss of confidentiality when personal
data is collected. The research team took appropriate steps to lessen this risk whenever possible,
including safeguarding the information collected in locked cabinets and not using participants’
names or other information that could identify a participant.

**Potential benefit to participants.**

Potential benefits to participants were minimal. They included the possibility of
developing insights into symptoms or other factors related to their mental disorders that could
increase their participation in their recovery process or treatment, or assist them in handling
symptoms or deficits in their lives differently.

**Potential benefit to others.**

The study may benefit others by contributing to the body of knowledge about serious
mental disorders, the recovery movement, and cognitive insight. Increased knowledge about
these constructs may help to develop new treatments or adapt established treatment to address
the needs of individuals diagnosed with serious mental illnesses. The study may also encourage further research into these constructs, which will also contribute to the field.

**Procedures for Maintaining Confidentiality**

Participant survey packets, coding information, and all other documents from the study containing confidential information were placed in a locked file cabinet that could be accessed only by the researcher. All information placed in personal computer files was password-protected in order to further ensure confidentiality.
Chapter Five

Results

Analytic Plan

The current study used regression analyses in order to examine the relationships between the independent variables of cognitive insight, clinical insight, hope, self-stigma, and symptomatology and the dependent variable of treatment adherence/engagement. The regression analyses were used to determine whether an independent variable or a combination of independent variables significantly predicted higher or lower treatment adherence/engagement. The study also used Pearson correlations in order to determine if scores from the Beck Cognitive Insight Scale correlated with scores from the Birchwood Insight Scale in order to provide further construct validity for the Beck Cognitive Insight Scale.

Power Analysis

A power analysis conducted for a multiple regression with five predictor variables found that to find an effect 80% of the time, the study would need a sample size of 92 participants. The study had a sample size of 35. A power analysis showed that with 35 participants, the study only had power of .31, meaning that if an effect existed, it would have only a 31% chance of being found.

Descriptive Sample Statistics

Descriptive statistics for the sample are provided in Table 1, and reliability analyses for the measures are provided in Table 2. A total of 40 participants were recruited for the study from a possible population of 204 registered Horizon House ACT clients in Montgomery and Delaware counties in Pennsylvania. Five participants failed to complete the study surveys after being recruited and were subsequently excluded from the data analysis. A total of 35 people completed the surveys for the study, 16 males and 19 females. Among the participants, 28 were
from the Norristown Horizon House ACT team, and only 7 were from the Swarthmore Horizon House ACT team. Thirty-one of the participants were Caucasian; 4 were African American. Of the 35 participants, only 7 chose to have the survey packets read to them by the researcher, and 28 completed the packet in a group. Means and standard deviations of all variables can be found in Table 3.

**Descriptive Statistics for the Adherence/Service Engagement Scale**

Of the 35 participants, 17% (N=6) had low service engagement (score of 3-6 on Service Engagement Scale), 43% (N=15) had medium service engagement (score of 7-10 on Service Engagement Scale), and 40% (N=14) had high service engagement (score of 11-15 on Service Engagement Scale). Scores of the overall Service Engagement Scale (SES) had a mean of 9.57 and standard deviation of 3.14. The results of Item 1, in which participants stated one of their goals and the study researcher rated the resemblance of the participants’ identified goals to those from their charts, showed that 34% (N=12) had no resemblance, 6% (N=2) had little resemblance, 9% (N=3) had moderate resemblance, 31% (N=11) had good resemblance, and 20% (N=7) had an exact statement of the goal. In Item 2, in which participants rated their perceived progress towards their goals, 11% (N=4) reported they had made no progress, 11% (N=4) reported making very little progress, 29% (N=10) reported making some progress, 23% (N=8) reported making good progress, and 25% (N=9) reported making much progress. The responses to Item 3, in which case managers ranked participants’ progress toward their identified goals, found that 17% (N=6) of participants made no progress, 11% (N=4) made very little progress, 31% (N=11) made some progress, 14% (N=5) made good progress, and 25% (N=9) made much progress.
Preliminary Analysis

Demographic variables were tested with regard to the dependent variable to determine if any of the demographic variables needed to be included in the regression analysis as control variables. T-tests were run in reference to the sex of participants and the treatment site (Norristown or Swarthmore). Results of the T-tests showed that there was a significant difference between the sex of a participant \( t(33) = 2.276, p = .029 \) and the treatment site of a participant \( t(33) = -2.453, p = .020 \) concerning scores on the dependent variable measure, the Service Engagement Scale. Individuals from Swarthmore had a mean score of 12 on the SES; Norristown participants had a mean of 8.96. Male participants had a mean of 10.81 on the SES, and females had a mean of 8.53. Because of the small sample size of the study, reliability statistics were run for all of the measures. All were found to be reliable, though the Service Engagement Scale had the lowest reliability with a Chronbach’s Alpha of .536, most likely because it consisted of only three items. See Table 2 for reliability statistics of all measures.

Assumptions of Regressions

Correlation matrixes were analyzed across all variables to determine if there was multicollinearity among any of the variables. None of the correlation coefficients were above .90, and multicollinearity was not considered as an issue with the data. See Table 4 for correlation matrixes. Tests of skewness and kurtosis found that the variables were normally distributed. Variables were also found to be homoscedastic.

Hypothesis One: Service Engagement Regression.

A hierarchical multiple regression analysis was run in order to test whether the independent variables of cognitive insight as measured by the Self-Reflectiveness and Self-
Certainty subscales of the Beck Cognitive Insight Scale, clinical insight, hope, four factors of self-stigma (aware, agree, apply, and hurts self), and symptomatology could significantly predict the dependent variable of service engagement/adherence. Because T-tests showed there were significant differences for both participant sex and site, these variables were first entered into the regression. Results of the first model of the regression with sex and site as predictor variables showed that site of participants significantly predicted service engagement ($\beta = .443, t = 2.649, p = .079$), but the sex of participants was not predictive ($\beta = -.307, t = -1.832, p = .079$). An ANOVA showed the first model to have significance ($p = .011$). Model 1 had an $R^2 = .301$, meaning that 30% of the variance in service engagement was accounted for by participants’ sex and the site of the study’s administration. Sex, site, and all predictor variables were then entered into model 2 of the regression. In model 2, site ($\beta = .439, t = 2.149, p = .047$), sex ($\beta = -.382, t = -2.143, p = .048$), and levels of hope ($\beta = .480, t = 2.216, p = .042$) were found to be significant predictors of service engagement. However, an ANOVA for model 2 showed no significance for the regression ($p = .122$). See Table 5 for coefficients for the hierarchical regression. The addition of all predictor variables in model 2 did increase the $R^2$, though it did not significantly improve predictive value ($R^2$ change = .263, $F = 1.071, p = .433$). See Table 6 for model summary of the hierarchical regression.

Additional regressions were then conducted with the three items of the Service Engagement Scale as separate dependent variables. None of the independent variables were found to be predictive of the dependent variables of the three individual items on the Service Engagement Scale. Tables 7, 8, and 9 show the regression analyses for Service Engagement Scale Item 1, Item 2, and Item 3, respectively.
Hypothesis Two: Beck Cognitive Insight Scale and Insight Scale Correlation

Correlation.

The author also hypothesized that participants’ scores on the Beck Cognitive Insight Scale will be positively correlated with scores on the Birchwood Insight Scale. As listed in Table 7, scores from the Beck Cognitive Insight Scale Self-Reflectiveness subscale were positively correlated at the .01 level of significance with scores on the Insight Scale ($r = .544$, $r^2 = .296$). This means that 29.6% of the variance in the Birchwood Insight Scale was accounted for by the Beck Cognitive Insight Scale Self-Reflectiveness subscale and vice-versa. No significant relationship was found between the Beck Cognitive Insight Scale Self-Certainty subscale and the Birchwood Insight Scale.

Supplemental Analyses

Correlations.

Pearson Correlations were also conducted using all of the variables. Several notable correlations were found, as listed in Table 4. Scores on the Hope Scale were positively correlated at the .05 level with scores on the Beck Cognitive Insight Scale Self-Certainty subscale ($r = .407$, $r^2 = .166$). Scores from the Beck Cognitive Insight Scale Self-Reflectiveness subscale were found to be positively correlated at the .01 level with scores on the Modified Colorado Symptom Index ($r = .480$, $r^2 = .230$) Scores on the Insight Scale were also positively correlated at the .01 level with scores on the Modified Colorado Symptom Index ($r = .461$, $r^2 = .213$). Scores on the Service Engagement Scale Item 2, in which participants rated their own progress toward a goal, were positively correlated at the .01 level with scores on Service Engagement Scale Item 3, in which participants’ case managers rated the participants’ progress toward their goals ($r = .560$, $r^2$
Scores on the Hope Scale were found to be negatively correlated with the Apply subscale of the Self-Stigma of Mental Illness Scale ($r = -.365$, $r^2 = .133$).
Chapter Six

Discussion

Predictors of Service Engagement

Treatment adherence and engagement of individuals diagnosed with serious mental illnesses remains a problem. Some research suggests that up to 80% of individuals diagnosed do not adhere to their treatment (Tait et al., 2003). The current study found that 60% of the sample had low- to -medium service engagement as measured by the Service Engagement Scale; more than half of the participants in the study were found to not fully engage in their treatment. Impaired insight has often been cited as the reason why individuals diagnosed with serious mental illnesses do not engage with treatment providers. Impaired insight has been associated with poor treatment outcomes, poor medication adherence, poor social functioning, and increased hospitalizations; increased insight has been correlated with decreased psychiatric symptoms, both increased and decreased hope, and levels of self-stigma (Mutatsa, et al., 2006; Smith et al., 2000; Weiler, Fleisher, & McArthur, 2000; Lysaker et al., 2007). Because of these reported associations, insight, hope, self-stigma, and symptomatology were chosen as predictor variables for the outcome variable of service engagement.

The study had two main purposes. The first was to determine whether the more medical model-oriented construct of insight into illness, a newer construct of cognitive insight, or constructs associated with recovery principles were predictive of treatment adherence or interacted to influence treatment engagement among individuals diagnosed with serious mental illnesses. The second was to provide additional empirical support for the Beck Cognitive Insight Scale as a valid measure of insight.
Hope and Self-Stigma

The recovery paradigm has demanded alternatives to traditional, medically oriented treatment models of serious mental illnesses (Bellack, 2006; Davidson et al., 2007). Recovery is defined as both a process and an outcome in which individuals with serious mental illnesses guide and actively participate in the decision-making about their treatment, but also seek the least amount of mental health service necessary to maintain their self-defined stability and integration in the community (Andresen et al., 2003; Davidson & Roe, 2007). Both hope and stigma are valued principles in the recovery movement; however, the relationship between hope and stigma is not clear-cut. Although there is research to suggest that levels of hope and insight into one’s illness are related, some studies indicate a negative relationship and others a positive relationship (Hasson-Ohayon et al., 2009; Lysaker et al., 2005, 2007; Lincoln et al., 2007). Self-stigma has been shown to act as a mediating factor between one’s level of hope and level of insight (Lysaker et al., 2007).

Part of this study’s purpose was to examine if levels of hope and self-stigma could also predict levels of service engagement. Results from the regression initially seemed to indicate that individuals with higher levels of hope were more likely to have higher scores on a measure of service engagement; however, the overall F test for the model was not significant in interpreting the significance of hope and was likely a spurious finding. Results also did not indicate that individuals with lower levels of self-stigma had higher levels of treatment engagement. There may be a lack of findings concerning hope and self-stigma because there was no true relationship between these variables and treatment engagement. An alternative hypothesis for hope is that a relationship was suggested, but that the sample size was too small to detect an actual effect. This is also a possible alternative explanation for the finding regarding self-stigma. Significant self-
stigma results may also have been absent because the measure for self-stigma was the longest measure (40 items) and was given towards the end of the survey packet, though participants could complete the measures in whatever order they desired. Reliability statistics conducted on the measures found that within the Self-Stigma of Mental Illness Scale, 94.3% of participants sufficiently completed the Aware and Agree subscale, 91.4% completed the Apply subscale, and 82.9% completed the Hurts Self subscale. While these subscales were still found to be reliable, it appears that participants did not fully complete the Hurts Self subscale. If more participants had completed the measure, a significant relationship may have been found between levels of self-stigma and service engagement.

Feldman, Rand, and Kahl-Wrobleski (2009) present another reason why hope may not have been related to service engagement in the current study. They conducted a study reviewing Snyder’s hope theory and how it is related to goal attainment. The study found that hope for the future may be more related to specific current goals than to general future goals as tested by the Hope Scale. Participants in the current study may have had hope for the goals that they identified on the Service Engagement Scale, but that hope may not have been reflected on the Hope Scale. As a result, they may have had more hope about their current goals that the Hope Scale did not measure but not about their future goals in general. If this were the case, their scores on the Hope Scale would not be related to their scores on the Service Engagement Scale.

A correlation was also found between levels of hope and the Self-Certainty subscale of the BCIS. This positive correlation suggests that participants who were overconfident that their beliefs and experiences, including symptoms of serious mental illnesses, were accurate and correct were more likely to have hope for the future. Therefore, individuals with less cognitive insight into their disordered thinking and who are more rigid in their thinking were more hopeful.
This finding supports research showing that increased clinical insight may lead to less hope for the future (Hasson-Ohayon et al., 2009; Lysaker et al., 2005, 2007). A negative correlation was also found between levels of hope and scores on the Apply subscale of the Self-Stigma of Mental Illness Scale. This indicates that individuals with more hope for the future applied less self-stigma beliefs to themselves and vice-versa. Previous research has shown that moderate levels of self-stigma can decrease levels of hope (Lysaker et al., 2007).

**Symptomatology**

The study hypothesized that service-engaged participants would acknowledge mental health problems. Symptomatology was not a significant predictor of service engagement. This may be the case because the severity of serious mental illnesses is not related to service engagement, because of the small sample size, or because not enough of the study participants completed the Modified Colorado Symptoms Index. Reliability statistics run on all of the measures showed that the MCIS was reliable, although only 77% of participants sufficiently completed the measure. The MCIS was the last measure presented in the survey packet, and participants may not have completed it fully due to fatigue. If a relationship between symptomatology and service engagement existed, the lack of completed measures and the small sample size may have affected whether that relationship was detected.

**Cognitive and Clinical Insight**

Cognitive insight is defined as a person’s flexibility in evaluating the thoughts, beliefs, and often distortions that are typically the focus of cognitive behavioral treatment of serious mental illnesses (Colis et al., 2006; Beck et al., 2004). Alternatively, clinical insight is conceptualized as the acknowledgment that one has an illness. Neither cognitive insight nor clinical insight were found to be significant predictors of service engagement. It is possible that
no true relationship between cognitive and clinical insight and service engagement existed. If a relationship did exist, the small sample size may have limited the ability of the study to detect it. Furthermore, results from the Beck Cognitive Insight Scale Self-Reflectiveness subscale, the Self-Certainty subscale, and the Birchwood Insight Scale indicated that participants in the current study had rather average levels of both cognitive and clinical insight. The sample of participants who completed the study may have had more average (neither too high nor too low) insight than the population of interest, although again the small sample size could account for this.

The second aim of this study was to provide more support for the construct of cognitive insight and to give more empirical support to the Beck Cognitive Insight Scale (BCIS) as a measure of insight in individuals diagnosed with serious mental illnesses. This study found that scores from the Beck Cognitive Insight Scale Self-Reflectiveness subscale were positively correlated with scores on the Birchwood Insight Scale. The Birchwood Insight Scale measures clinical insight; the Self-Reflectiveness subscale of the BCIS measures one’s ability to evaluate and reflect on one’s beliefs and thoughts. The findings from this study indicate that both the Self-Reflectiveness subscale of the BCIS and the Birchwood Insight Scale measure a similar construct. The current study did not find a relationship between scores on the Birchwood Insight Scale and the Self-Certainty subscale of the BCIS, which was expected, because increased clinical insight is not related to rigidity in one’s thinking as measured by the Self-Certainty subscale. It appears that individuals who participated in the study who were more able to identify, evaluate, and reflect on their beliefs, on anomalous symptoms associated with serious mental illnesses, and on their thoughts were more likely be capable of acknowledging that they had a mental illness requiring treatment. Clinical insight has been linked to higher levels of
adherence to treatment in populations diagnosed with serious mental illnesses (Bollini et al., 2004), although the current study did not support those findings.

Results of this study also showed a positive correlation between insight and symptomatology. Scores on the Self-Reflectiveness subscale of the Beck Cognitive Insight Scale and scores on the Insight Scale were positively correlated with scores on the Modified Colorado Symptom Index. Research has been mixed regarding the relationship between insight and symptoms of serious mental illness. Some studies have found that increased clinical insight is related to increased symptoms (Mintz et al., 2003), but other research has shown a negative relationship (Mutatsa, et al., 2006; Smith et al., 2000; Weiler, Fleisher, & McArthur, 2000). Increased cognitive insight has been found to have a negative relationship with symptomatology (Granholm et al., 2005; Bora et al., 2007). Findings of the current study suggest that individuals with increased clinical insight (acknowledgement of their illness) and increased ability to reflect on their experiences and beliefs (Self-Reflectiveness subscale of the BCIS) are more likely to experience more symptoms of serious mental illnesses. This relationship may result because individuals who are more aware of their illness and symptoms may be more able and likely to acknowledge them on a self-report measure of symptomatology.

**Service Engagement Scale**

The Service Engagement Scale is a three-item, self-report measure of treatment adherence/engagement designed by the author of this study. The purpose of the measure is to attempt to gauge accurately service engagement by focusing on participants’ identified treatment goals, in addition to the participants’ and their case managers’/therapists’ perceptions of their progress toward those goals. The measure consists of one item that asks the participant to identify one of their treatment goals, an item in which the participant rates their perceived
progress toward their goal, and an item in which the participant’s case managers/members of their treatment team rate their perception of the participant’s progress toward their identified goal. The item in which the participant identified his or her goal is then scored by the administrator based on its resemblance to the goals in the participant’s chart, which have been identified and documented at some point in their treatment. Scores of the three items are then totaled to present a composite score of the participant’s service engagement, with higher scores representing higher service engagement and vice-versa.

Scores from the item in which participants rated their progress and scores from the item in which case managers rated their progress were found to be significantly correlated. This means that participants and their case managers/treatment providers often were in agreement about the participants’ progress toward their identified goals. When interviewed to complete Item 3, the case managers/treatment providers were not informed of the participant’s rating of their own progress. Theories about service engagement often include communication and contact between service providers and clients as a fundamental component of service engagement. The correlation found between items 2 and 3 of the SES suggests that participants and their treatment providers agreed to an extent about the progress made toward goals. It can be hypothesized that participants and case managers who frequently interact most likely discuss participants’ goals and the progress made toward those goals, all of which would indicate increased service engagement. A drawback of the SES used in this study is that agreement between case managers and participants about progress made toward goals, which would indicate frequent communication and contact, would not necessarily increase total scores on the scale. They could, for example, agree that no progress was made, which would result in a lower score on both items 2 and 3. There are several potential reasons why the correlation found was moderate (.560)
and not higher. First, communication may have been an issue between some participants and their treatment providers, meaning that they either interact infrequently or did not communicate effectively when interacting. Also, disparity may exist in perceptions and expectations about goals and progress toward goals. Participants may have overestimated their progress toward their goals, and case managers may have underestimated it or vice-versa.

Results also showed that 40% of participants stated a goal on the Service Engagement Scale that had little or no resemblance to the goal listed on their recovery plan in their chart. This discrepancy between participants’ reports and what is recorded in their chart may be due to outdated paperwork in the chart, participants not informing their treatment providers of newer, more current goals, or from a lack of communication between participants and their service providers. One tenet of the recovery movement is that treatment is client-driven and focuses on client goals. Service engagement is also defined in terms of agreement between treatment provider and client. In order to have treatment that is recovery-oriented and promotes service engagement, it is necessary that the clients and treatment providers communicate effectively and work toward the same goals for the client.

Differences were also found between site and sex of participants and their scores on the Service Engagement Scale. Participants at the Swarthmore site ($M = 12$) had a significantly higher mean composite score on the SES than participants at the Norristown site ($M = 8.96$). This difference seems to indicate that participants at the Swarthmore site engaged in treatment and adhered to prescribed treatment more consistently, although the criteria of treatment by an ACT team, such as diagnoses and number of hospitalizations, were the same for both teams. Demographic data regarding socioeconomic status, age, and other factors that may have affected the differences between the Swarthmore and the Norristown participants was not collected, and
inferences are limited regarding sources of the difference. One likely explanation for this finding lies in the procedures used for the data collection. Surveys were only administered on one day at the Swarthmore site, but survey were administered on three days at the Norristown site. This could explain the difference in means; the participants who came to or were already at the Swarthmore office on the day of the survey collection may have been participants who were more engaged in their treatment and services at the time of the study. However, at the Norristown site, there were three separate days of data collection and more opportunity to survey both service-engaged individuals who are often at the ACT team offices, and those not engaged in treatment who happened to be at the office or who came in or were brought in for the study.

Males who participated in the study also had a higher mean ($M = 10.81$) on the Service Engagement Scale than females ($M = 8.53$). Some studies have shown no significant gender or sex differences in treatment adherence among individuals diagnosed with serious mental illness (Gilmer et al., 2004; Lindamer et al., 2003), but other studies (Dixon et al., 2001; Nose, Barbui, & Tansella, 2004) have shown shown that women with schizophrenia were more likely to use outpatient services than men. The male clients of the Swarthmore and Norristown ACT teams may in reality be more treatment-adherent than the female clients. However, because of the small sample size of the current study, ($N = 35, 16$ males and $19$ females) the difference between sexes on the Service Engagement Scale may be sample-specific.

**Limitations of the Study**

The most significant limitation of the current study was the small sample size ($N = 35$). Of the potentially $204$ Horizon House Assertive Community Treatment (ACT) team participants from the Norristown and Swarthmore sites who were eligible to participate in the study, only $17.2\%$ participated. One of the defining characteristics of the ACT team population is that ACT
service recipients are difficult to engage in treatment. ACT team clients have been shown to not attend day programs and clinics for treatment, and much of their treatment is done in the community (Latimer, 2005). Consequently, not many participants came to the ACT sites to complete surveys. Also, because of limited resources and time constraints, researchers were only able to collect data on four separate occasions (three days in Norristown and one day in Swarthmore). The few data collection days may have limited the number of individuals who would have been likely to participate in the study. There may not have been enough participants who completed surveys to register an effect if one were actually present. The power analysis showed that the study only had a power of .31, which greatly limited the chances of registering an effect.

The study would have also benefited from more demographic data about the participants, including age and whether the participants voluntarily came into the office for the study or were encouraged and assisted to come to the office by case managers. More data may have shown more significant differences among participants or predictors of service engagement. Moreover, the recovery movement has become a standard of treatment in many areas over the last several decades. Specifically, demographic data about ages of participants may have shown a difference between levels of hope and self-stigma in older individuals, who were initially diagnosed before the recovery movement, and younger individuals, who were likely to have been exposed to recovery-oriented treatment environments.

ACT teams serve individuals who have been shown to need more services than traditional outpatient services provide, often because of increased symptomatology, treatment resistance, and others factors such as homelessness, concurrent substance abuse disorders, and involvement in the judicial system (Latimer, 2005). Because of the level of severity of the
symptoms and disorders in the ACT team population, the findings from this small sample of an ACT team population may not generalize to the entire population of individuals diagnosed with serious mental illnesses. Despite this limitation, the ACT team sample does represent a population of individuals who are diagnosed with serious mental illnesses and who, by definition of ACT team criteria, are more difficult to engage in treatment than other outpatient treatment populations.

The number and/or length of the measures used in the study may also constitute a limitation in relation to the lack of findings. Participants had to complete six different self-report measures. As shown in Table 2, reliability statistics run on the data show that the number of participants who completed each measure decreased throughout the testing procedures. Although all the participants completed the first measure, the Service Engagement Scale, only 77.1% completed the Modified Colorado Symptom Index, the last measure in the survey packet. This suggests that participants may have become fatigued while completing the measures and may not have completed them to the best of their abilities. Fatigue and lack of accurate reporting affected the findings of the study.

Also, the Service Engagement Scale designed by the author may not be a reliable and accurate measure of the constructs of service engagement and treatment adherence. Although the scale moved beyond the traditional operationalization of treatment adherence (appointment adherence, medication adherence), it only measured one dimension of service engagement, which is the client’s knowledge of and perceived progress toward one of their treatment goals. The three items of the SES consist of the participants’ self-reported goal, their perception of their progress made toward that goal, and their case managers’/treatment providers’ perception of participants’ progress toward that goal. These three items, combined or separately, may not have
been an accurate measure of what it means for an individual to engage with service providers and
to comply with recommended treatment. Recent literature (Hall et al., 2001; Tait, et al., 2002)
indicated that service engagement is a construct with many different dimensions related to clients
and their treatment providers, including relationship, availability, collaboration, communication,
and appointment-keeping. Collaboratively developed treatment goals are important to the
recovery movement and service engagement, but there are other dimensions of service
engagement that need to be measured and assessed to accurately and reliably measure how
clients engage in their treatment.

As was discussed earlier in the study, adherence and service engagement for individuals
with serious mental illnesses are usually measured by determining if the individual has complied
with medication and appointments and/or by interviewing their treatment providers. The purpose
of the Service Engagement Scale was to look at the individual’s identified treatment goals and
the progress made toward that goal rather than focusing strictly on medication compliance or the
treatment provider’s perspective on client engagement. By design, the scale assumes that
participants’ ability to identify accurately their treatment goal is indicative of the participants’
level of service engagement. A potential weakness of the scale is its reliance on self-reports and
reports from the participants’ charts, because their goals may not have been identified accurately
in their charts, and the ACT Recovery Plan, in which the goals are specified, may not have been
up-to-date or sufficiently complete.

Areas of Future Research

The most necessary area of future research into service engagement of individuals
diagnosed with serious mental illness is to develop further the construct of service engagement
by including the client’s perspective and input. Current research on service engagement and
treatment adherence focuses on medication compliance, appointment keeping, client-treatment provider relationship, and collaboration. The Service Engagement Scale used in this study sought to measure treatment adherence by including clients’ perspectives on their progress toward their goals as well as treatment providers’. The construct of service engagement needs to include the client’s perspective, the treatment provider’s perspective, and data regarding the client’s adherence to prescribed treatments (appointments, medication). In addition, the recovery movement and recovery principles emphasize that mental health treatment must take into account the experiences, needs, and desires of individuals with serious mental illnesses who are in treatment; treatment should not be “prescribed” but collaboratively agreed upon by treatment providers and clients.

Because of the conflicting findings in the research, future research needs to maintain a focus on clarifying the relationship between hope and insight. Findings are mixed concerning whether insight into one’s illness increases or decreases hope for the future. Hope for the future is an essential part of one's personal recovery from and with a mental disorder. Individuals must feel they have the resources and abilities to achieve their personal goals in order to have hope of attaining them. Acknowledging that one has a mental health disorder that needs treatment and the ability to notice dysfunctional and delusional beliefs appear to have an effect on how that individual feels about his or her goals and ability to achieve those goals. Future research can work to clarify whether acknowledging mental illnesses and the ability to evaluate the associated symptomatic thinking actually makes an individual feel more or less hope in their ability to achieve their identified goals in life.

Research is also mixed regarding insight’s role in experiencing symptoms of serious mental illnesses. Future research can focus on how both cognitive insight and clinical insight
affect one’s perception and experience of symptoms of serious mental illnesses or any mental illness, such as depression or anxiety, which affects a person’s life. Also, future research can explore the relationships between insight and self-stigma and whether greater insight and greater self-stigma lead to more or less service engagement and hope for the future.
References


*Community Mental Health Journal, 36*, 315-328.


## Appendix: Tables

### Table 1

**Demographics of Patient Participants**

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NOTE: SES = Service Engagement Scale, BCIS SR = Beck Cognitive Insight Scale Self-Reflectiveness, BCIS SC = Beck Cognitive Insight Scale Self-Certainty, HS = Hope Scale, IS = Insight Scale, SSMIS Aw = Self-Stigma of Mental Illness Scale Aware, SSMIS Ag = Self-Stigma of Mental Illness Scale Agree, SSMIS Ap = Self-Stigma of Mental Illness Scale Apply, SSMIS HS = Self-Stigma of Mental Illness Scale Hurts Self, MCIS = Modified Colorado Symptom Inventory
Table 3

*Means and Standard Deviations of Variables*

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NOTE: SES = Service Engagement Scale, BCIS SR = Beck Cognitive Insight Scale Self-Reflectiveness, BCIS SC = Beck Cognitive Insight Scale Self-Certainty, HS = Hope Scale, IS = Insight Scale, SSMIS Aw = Self-Stigma of Mental Illness Scale Aware, SSMIS Ag = Self-Stigma of Mental Illness Scale Agree, SSMIS Ap = Self-Stigma of Mental Illness Scale Apply, SSMIS HS = Self-Stigma of Mental Illness Scale Hurts Self, MCIS = Modified Colorado Symptom Inventory
Table 4

Pearson Correlations between Service Engagement Scale Item 1, Service Engagement Scale Item 2, Service Engagement Scale Item 3 and Predictor Variables

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NOTE: SES Item1 = Service Engagement Scale Item 1, SES Item 2 = Service Engagement Scale Item 2, SES Item 3 = Service Engagement Scale Item 3, BCIS SR = Beck Cognitive Insight Scale Self-Reflectiveness, BCIS SC = Beck Cognitive Insight Scale Self-Certainty, HS = Hope Scale, IS = Insight Scale, SSMIS Aw = Self-Stigma of Mental Illness Scale Aware, SSMIS Ag = Self-Stigma of Mental Illness Scale Agree, SSMIS Ap = Self-Stigma of Mental Illness Scale Apply, SSMIS HS = Self-Stigma of Mental Illness Scale Hurts Self, MCIS = Modified Colorado Symptom Inventory, ** = Correlation is significant at the 0.01 level, * = Correlation is significant at the 0.05 level
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<td></td>
</tr>
</tbody>
</table>

**NOTE**: BCIS SR = Beck Cognitive Insight Scale Self-Reflectiveness, BCIS SC = Beck Cognitive Insight Scale Self-Certainty, HS = Hope Scale, IS = Insight Scale, SSMIS Aw = Self-Stigma of Mental Illness Scale Aware, SSMIS Ag = Self-Stigma of Mental Illness Scale Agree, SSMIS Ap = Self-Stigma of Mental Illness Scale Apply, SSMIS HS = Self-Stigma of Mental Illness Scale Hurts Self, MCIS = Modified Colorado Symptom Inventory
Table 6

*Model Summary for Regression Analysis Summary for Variables Predicting Service Engagement Scale Total Score Controlling for Site and Sex of Participant*

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std Error of the Estimate</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.548</td>
<td>.301</td>
<td>.245</td>
<td>2.795</td>
<td>.301</td>
<td>5.374</td>
<td>2</td>
<td>25</td>
<td>.011</td>
</tr>
<tr>
<td>2</td>
<td>.751</td>
<td>.564</td>
<td>.264</td>
<td>2.756</td>
<td>.263</td>
<td>1.071</td>
<td>9</td>
<td>16</td>
<td>.433</td>
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</tbody>
</table>
Table 7
Regression Analysis Summary for Variables Predicting Service Engagement Scale Item 1

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCIS SR</td>
<td>.057</td>
<td>.065</td>
<td>.250</td>
<td>.887</td>
<td>.387</td>
</tr>
<tr>
<td>BCIS SC</td>
<td>-.026</td>
<td>.199</td>
<td>-.057</td>
<td>-.221</td>
<td>.827</td>
</tr>
<tr>
<td>HS</td>
<td>.067</td>
<td>.084</td>
<td>.215</td>
<td>.796</td>
<td>.437</td>
</tr>
<tr>
<td>IS</td>
<td>-.078</td>
<td>.114</td>
<td>-.204</td>
<td>-.689</td>
<td>.500</td>
</tr>
<tr>
<td>SSMIS Aw</td>
<td>.004</td>
<td>.017</td>
<td>.071</td>
<td>.257</td>
<td>.800</td>
</tr>
<tr>
<td>SSMIS Ag</td>
<td>-.004</td>
<td>.019</td>
<td>-.058</td>
<td>-.218</td>
<td>.830</td>
</tr>
<tr>
<td>SSMIS Ap</td>
<td>.020</td>
<td>.030</td>
<td>.311</td>
<td>.687</td>
<td>.501</td>
</tr>
<tr>
<td>SSMIS HS</td>
<td>.004</td>
<td>.027</td>
<td>.055</td>
<td>.130</td>
<td>.898</td>
</tr>
<tr>
<td>MCIS</td>
<td>.025</td>
<td>.032</td>
<td>.193</td>
<td>.758</td>
<td>.458</td>
</tr>
</tbody>
</table>

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Table 8

*Regression Analysis Summary for Variables Predicting Service Engagement Scale Item 2*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCIS SR</td>
<td>-.001</td>
<td>.049</td>
<td>-.004</td>
<td>-.016</td>
<td>.987</td>
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<tr>
<td>BCIS SC</td>
<td>-.068</td>
<td>.091</td>
<td>-.184</td>
<td>-.753</td>
<td>.461</td>
</tr>
<tr>
<td>HS</td>
<td>.103</td>
<td>.064</td>
<td>.407</td>
<td>1.602</td>
<td>.127</td>
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<tr>
<td>IS</td>
<td>-.088</td>
<td>.087</td>
<td>-.281</td>
<td>-1.006</td>
<td>.328</td>
</tr>
<tr>
<td>SSMIS Aw</td>
<td>-.014</td>
<td>.013</td>
<td>-.270</td>
<td>-1.033</td>
<td>.315</td>
</tr>
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<td>SSMIS Ag</td>
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<td>.014</td>
<td>.101</td>
<td>.400</td>
<td>.694</td>
</tr>
<tr>
<td>SSMIS Ap</td>
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<td>.023</td>
<td>.231</td>
<td>.540</td>
<td>.596</td>
</tr>
<tr>
<td>SSMIS HS</td>
<td>-.010</td>
<td>.021</td>
<td>-.184</td>
<td>-.461</td>
<td>.650</td>
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<tr>
<td>MCIS</td>
<td>.027</td>
<td>.025</td>
<td>.265</td>
<td>1.107</td>
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</tr>
</tbody>
</table>

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Table 9

Regression Analysis Summary for Variables Predicting Service Engagement Scale Item 3

<table>
<thead>
<tr>
<th>Predictors</th>
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<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCIS SR</td>
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<td>-.171</td>
<td>-.640</td>
<td>.530</td>
</tr>
<tr>
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<td>.096</td>
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<td>-.213</td>
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</tr>
<tr>
<td>HS</td>
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<td>.068</td>
<td>.563</td>
<td>2.208</td>
<td>.040</td>
</tr>
<tr>
<td>IS</td>
<td>-.020</td>
<td>.092</td>
<td>-.061</td>
<td>-.219</td>
<td>.829</td>
</tr>
<tr>
<td>SSMIS Aw</td>
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<td>.014</td>
<td>-.150</td>
<td>-.573</td>
<td>.574</td>
</tr>
<tr>
<td>SSMIS Ag</td>
<td>-.012</td>
<td>.015</td>
<td>-.198</td>
<td>-.783</td>
<td>.444</td>
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<tr>
<td>SSMIS Ap</td>
<td>.016</td>
<td>.024</td>
<td>.281</td>
<td>.657</td>
<td>.519</td>
</tr>
<tr>
<td>SSMIS HS</td>
<td>.008</td>
<td>.022</td>
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<td>.728</td>
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<tr>
<td>MCIS</td>
<td>.016</td>
<td>.026</td>
<td>.143</td>
<td>.594</td>
<td>.560</td>
</tr>
</tbody>
</table>

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