EXAMINING PSYCHOLOGICAL RECOVERY IN PERSONS WITH SERIOUS MENTAL ILLNESS: THE ROLE OF EXPERIENCED STIGMA AND THE INSIGHT PARADOX

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Christopher Anthony Fowler

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EXAMINING PSYCHOLOGICAL RECOVERY IN PERSONS WITH SERIOUS MENTAL ILLNESS: THE ROLE OF EXPERIENCED STIGMA AND THE INSIGHT PARADOX

Christopher Anthony Fowler, Candidate for the Master of Arts Degree

University of Missouri-Kansas City, 2013

ABSTRACT

The purpose of this study was to investigate how insight (awareness of mental illness and its associated consequences) into having serious mental illness (SMI) and the experienced stigma associated with SMI may affect psychological recovery among people in this population. Examining the role of insight in the recovery process is important because low insight is a highly prevalent and complex phenomenon that carries paradoxical effects for persons with SMI. Additionally, the stigma associated with having SMI has been recognized as the single greatest concern facing SMI populations and can have a detrimental impact in all life domains. The current study differs from previous research as it examines both the direct and moderating effects of insight and stigma on the recovery *process* rather than correlates of recovery. Additionally, previous studies have

only examined the role of internalized stigma in the relationship between insight and correlates of recovery. This study examined the role of *experienced* stigma, an important precursor to *internalized* stigma. Fifty-three participants with SMI completed a recovery scale and an experienced stigma scale. Insight was assessed via information collected from semi-structured clinical interviews. Results indicated that neither insight nor experienced stigma predicted changes in *psychological growth*, the highest stage of psychological recovery. Experienced stigma had a marginally significant moderation effect on the insight/recovery relationship. Specifically, higher insight predicted greater psychological growth when experienced stigma is also higher. This was not observed when experienced stigma was lower. Subsequently, neither insight, stigma, nor their interaction predicted changes between people's stages of recovery. Findings further suggest that insight has paradoxical effects on persons with SMI that can be exacerbated by stigma. However, the moderating effects of experienced stigma on the insight/recovery relationship are the opposite of those supported with internalized stigma. Areas for future research and the implications for SMI populations are discussed.

The undersigned, appointed by the Dean of the College of Arts and Science have examined a thesis titled “Examining Psychological Recovery People In Persons with Serious Mental Illness: The Role of Experienced Stigma and the Insight Paradox,” presented by Christopher A. Fowler, candidate for the Master of Arts degree, and certify that in their opinion it is worthy of acceptance.

Melisa V. Rempfer, Ph.D.
Department of Psychology, Committee Chair

Kymberly K. Bennett, Ph.D.
Department of Psychology

Jannette Berkley-Patton, Ph.D.
Department of Psychology

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CHAPTER 1

OVERVIEW

The purpose of this study was to investigate processes that affect psychological recovery in people with serious mental illness (SMI). Psychological recovery in SMI is an evolving concept emphasizing recovery from the psychological trauma of being diagnosed with a mental illness and its associated consequences (Anthony, 1993). Psychological recovery focuses on an individual's subjective well-being and acceptance of living with a disability, standing in contrast to the conceptualization of recovery as the absence of illness (e.g., symptoms) as popularized by the medical model (Davidson et al., 2007). This important distinction has led to increased popularity of psychological recovery as a conceptual framework for what it means to recover from mental illness among mental health consumers, providers, advocates, and policy-makers (Andresen, Oades, & Caputi, 2011). One potential barrier to recovery is insight into the fact that one has SMI and the associated consequences of having a mental disorder. Insight is a major concern in SMI populations because low insight is a highly prevalent phenomenon (Amador & David, 2004). Not surprisingly, providers and consumers suggest that high insight is a necessary precursor towards rehabilitation and recovery in persons with SMI (Frese, Knight, & Saks, 2009). However, research also suggests that higher insight has paradoxical effects on persons with SMI, leaving unanswered questions pertaining to the importance of insight on prognosis, outcomes, and recovery. Emergent research examining 'The Insight Paradox' (see Lysaker, Roe, &Yanos, 2007) suggests that increasing insight may also be associated

with increasing factors associated with having SMI (e.g., stigma). Specifically, that the negative effects of high insight may be a function of the increased stigma associated with having a mental illness (Mak & Wu, 2006). Additional research suggests that high insight may be generally associated with positive effects in the absence of stigma (Williams, 2008). However, a paucity of studies has examined how the relationship between insight and stigma may affect factors considered important to psychological recovery (e.g., quality of life, hope, self-esteem, self-efficacy, etc.). To my knowledge, no studies have examined this relationship within the recovery *process* itself. Because of the notable heterogeneity of insight and the documented negative effects of stigma in SMI populations, it is important to examine how these two factors interact to affect the recovery process. The present study examined how experienced stigma (or lack thereof) affects the relationship between insight and recovery among persons with SMI. Results found that neither insight nor experienced stigma independently predict changes in psychological growth, the highest stage of psychological recovery. However, psychological growth was influenced by a marginally significant interaction between insight and stigma. Specifically, higher insight predicted increased psychological growth when experienced stigma was also higher. This was not the case when experienced stigma was lower. Subsequently, neither insight, stigma, nor their interaction predicted changes between people's stages of recovery. These findings contribute to our understanding of how external factors such as experienced stigma may affect cognitive factors (i.e., insight) that have been suggested to affect the course of personalized recovery within this population. Understanding such relationships

may provide useful information that can be integrated into interventions targeted at both increasing insight and reducing stigma in SMI populations. Areas for future research and the implications for SMI populations including insight, stigma, and psychological recovery will be discussed.

CHAPTER 2

REVIEW OF THE LITERATURE

Recovery: A Targeted Agenda for the Future of Mental Health Services

Historically, it can be argued that people diagnosed with SMI have not received adequate attention and support to achieve their ultimate goal of recovery. Even in the absence of allocated resources from politicians and policy-makers, a grass roots consumer-based recovery movement emerged in the late 1980s (Anthony, 1993; Frese, 1998). The conceptual foundations of the recovery movement began from the lay writings of numerous people with SMI that had effectively utilized mental health services (consumers), began coping with illness, and re-established meaningful identities. In these narratives, recovery is described as a highly personal journey emphasizing restoration of hope and the possibility of living a fulfilling and meaningful life despite serious illness (Anthony 1993; Stocks, 1995). Many of these consumers began efforts to empower those who believed their illness had marginalized them from the rest of society (Deegan, 1988; Leete, 1989). The distinctiveness of these narratives was their sheer volume, acceptance from prominent mental health organizations, and later, longitudinal evidence for their empirical support (Desisto, Harding, McCormick, Ashikaga, & Brooks, 1995). The increasing popularity and influence of the recovery movement has consumers, scientists, and practitioners optimistic that it may become a catalyst for change.

In 1999 the U.S. Surgeon General issued the first report on mental health. This report was noteworthy in acknowledging that mental health is both instrumental to overall health and that mental disorders are legitimate health conditions (Satcher, 2000). This report also highlighted principles of the recovery movement including the need for future research to identify components of the recovery process. Further, this document stated that mental health care in America should be consumer-driven with an emphasis on promoting recovery. However, it is not clear regarding what is meant by 'recovery' within a mental health services context (Davidson, O'Connell, Tandora, Styron, & Kangas, 2006). While this report points out a range of efficacious treatments, there is no precise discussion of strategies for shifting the mental health system to promote this new agenda.

The President's New Freedom Commission on Healthcare (2003) furthered the notion of the Surgeon General's report (1999) by placing recovery at the forefront of mental health practice and policy. Intended as a projection for the future of the American mental health system, this document emphasized that recovery is the most important goal of mental health consumers and that expanding recovery research is paramount (Silverstein & Bellack, 2008; Slade & Hayward, 2007). Similar to its predecessor, the President's New Freedom Commission failed to define recovery-oriented services (Davidson, et al., 2006; Lieberman et al., 2008). Thus, it has remained up to clinicians, consumers, and policy makers to provide a framework for the development of recovery-oriented services. Further, it remains up to scientists to continue developing a scientific agenda for what it means to recover from mental illness.

Psychological Recovery within Serious Mental Illness

Empirical Definitions of Recovery

In a review of the literature, Bonney and Stickley (2008) examined over 100 definitions of the recovery construct and identified six common themes: "identity, service provision agenda, the social domain, power and control, hope and optimism, and risk and responsibility" (p. 141). However, operational definitions of recovery adhere to several additional themes including symptom reduction (Lester, Tritter, & England, 2003; Travis, Peters, Kerwin, & Institute of Psychiatry, 2001), functional outcomes (Herbener, Harrow, & Hill, 2005; Liberman & Kopelowicz, 2002), prognosis and coping mechanisms (Strauss, 2008), and recovering from the psychological trauma of being diagnosed with SMI (Andresen, Caputi, & Oades, 2006; Anthony, 1993). Thus, the literature contains over-lapping definitions and lacks a clear consensus for the recovery construct. This has led several researchers to comment on the need for a (single) clear and useful definition of what it means to recover from SMI (Brennaman & Lobo, 2011; Essock & Sederer, 2009; Onken, Craig, Ridgway, Ralph, & Cook, 2007).

The current study adopted the definition of *psychological recovery* provided by Andresen, Oades, and Caputi (2003): "The establishment of a fulfilling, meaningful life and a positive post-diagnostic sense of identity founded on hopefulness and self-determination" (p. 588). This definition was selected because it is grounded in principles

of the recovery movement and its emergence from qualitative themes identified by focus groups of people with SMI (Andresen et al., 2003, 2006). This definition has also gained popularity among consumers and scientists over the past several years (Mohr, 2011; Torn, 2011; Williams et al., 2012).

Conceptualization of a Recovery Orientation

Although no single definition of recovery has gained definitive acceptance from the field, two useful ways to conceptualize these definitions have emerged from the literature. One conceptualization is an objective orientation examining recovery as an *outcome* by emphasizing the role of symptoms and psychosocial functioning. The other is subjective with an interest in examining recovery as a *process* derived from lived experiences captured by personal narratives and qualitative research. Bellack (2006) termed these 'scientific' and 'consumer' models of recovery respectively. However, it has been proposed that these terms suggest that only one model of recovery can be objectively researched (i.e., scientific), when this is true of both models. Thus, it may be more appropriate to label these two perspectives 'outsider' and 'insider' models of recovery (Brown, Rempfer, & Hamera, 2008). This conceptualization also emphasizes the role of scientists and practitioners *investigating* recovery from out-group perspectives and people living with SMI (some of whom are also scientists and practitioners) *experiencing* and

examining recovery from an in-group perspective. The current research adopts this latter conceptualization of recovery.

Insider Conceptualizations of Recovery

Insider and outsider conceptualizations of recovery are not mutually exclusive, as the ability to control one's symptoms and level of functioning may affect the recovery process (Brown et al., 2008; Mead & Copeland, 2000). Regardless, individuals with SMI who advocate for insider conceptualizations generally view their symptoms as a prolonged disability that may never undergo complete and permanent remission (Davidson et al., 2006; Jobe & Harrow, 2010). Further, insider perspectives often acknowledge the psychological trauma of being diagnosed with SMI and how this experience influences the recovery process (Anthony, 1993; Horowitz, 2012; Hupp, 2011). Consumers and advocates have called for recovery to be viewed as the process offered by insider conceptualizations (Ralph & Corrigan, 2004; Warner 2010).

Consumer narratives and qualitative studies have identified common themes of recovery as a non-linear process that is unique to the individual. This process is defined by the establishment of a meaningful life founded on choice, hopefulness, and empowerment while living with a disability rather than absence of illness (Bielavitz, Wisdom, & Pollack, 2011; Levine, 2012; Pachoud, Plagnol, & Lepledge, 2010; Russinova, Rogers, Ellison, & Lyass, 2011). Further, this perspective emphasizes that recovery happens within illness

not outside of it (Chou & Chronister, 2012; Davidson et al., 2007), and while symptomatic episodes may hinder recovery, their complete absence does not facilitate it (Brennaman & Lobo, 2011; Davidson & Roe, 2007). Thus, consumer perspectives view outsider conceptualizations, especially symptom reduction, as dated artifacts of the medical model that view the individual as an outcome, undermine hope and empowerment, and do not promote control over life or illness (Essock & Sederer, 2009; Ragins, 1994).

Longitudinal Evidence for Recovery

Longitudinal evidence has supported a variable notion of favorable long-term recovery outcomes for persons with SMI. The Vermont Longitudinal Studies of persons with SMI (*n*=269) found that 50 to 68% of participants improved in "various degrees of productivity, social involvement, wellness, and competent functioning" (p. 730) with 55% being asymptomatic in contrast to poor prognostic predictions during initial hospitalization in 1955 (Desisto et al., 1995; Harding, Brooks, Ashikaga, Strauss, & Brier, 1987). Further, 50% of the improved participants were not taking anti-psychotic medications at follow-up. Interestingly, when these data were collected at 32 year follow-up of initial hospitalization, the authors had hypothesized that participants would not have improved from initial hospitalization (Harding et al., 1987). Mueser et al. (1997) found that participants who began working after vocational rehabilitation were functioning better in non-vocational domains (e.g., self-esteem, global functioning). Liu, Choi, Reddy, and Spaulding (2011)

demonstrated that comprehensive rehabilitation programs may help improve psychological domains (e.g., social, neurocognitive, symptomatic, etc.) that predict independent living, an important goal for persons in the recovery process. Cook at al. (2011) provided evidence that increased attendance in peer-led recovery groups predicted improved perceptions of the recovery process as well as hopefulness. Lysaker, Roe, Ringer, Gilmore, and Yanos (2012) found that self-stigma decreased after participation in vocational rehabilitation. This decrease was correlated with increased self-esteem. While no longitudinal studies have specifically examined the recovery process, they have examined correlates of both outsider (e.g., symptom reduction, global and social functioning) and insider conceptualizations (e.g., hope, self-esteem, etc.).

Five Stages of Recovery from Mental Illness

Andresen et al. (2003) developed an empirically validated 5-stage recovery model from published accounts of people with SMI and qualitative research. Examination of consumer accounts identified four key components of the recovery process: “finding and maintaining hope, re-establishment of a positive identity, finding meaning in life, & taking responsibility for one’s life” (Andresen et al, 2006, p. 973). The authors utilized these components to develop five sequential stages of recovery (Table 1). This model acknowledges recovery as a heterogeneous process that is flexible in both the time and

process in which a person moves through stages with growth representing an ideal goal for persons with SMI (Andresen et al., 2011).

Table 1. Stages of Psychological Recovery.

Stage	Theme
1.) Moratorium	A time of withdrawal characterized by a profound sense of loss and hopelessness
2.) Awareness	Realization that not all is lost, and that a fulfilling life is possible
3.) Preparation	Taking stock of strengths and weaknesses regarding recovery, and starting to work on developing recovery skills
4.) Rebuilding	Actively working towards a positive identity, setting meaningful goals, and taking control of one's life
5.) Growth	Living a full and meaningful life, characterized by self-management of the illness, resilience, and a positive sense of one's self

NOTE: Definitions adapted from work of Andresen and colleagues (2006, p. 973). Lower stages of recovery are characterized by feelings of loss and hopelessness (Moratorium) and emerging awareness that a fulfilling life is possible (Awareness). Middle and higher stages are defined by developing recovery skills (Preparation), taking control of one's identity, goals, and life (Rebuilding), and living a full, self-managed, and meaningful life (Growth).

Insight and Serious Mental Illness

Providers and consumers suggest that intrapersonal knowledge and understanding into the fact that one has SMI is a necessary precursor towards rehabilitation and recovery (Frese et al., 2009; McEvoy, 2004). The empirical literature has termed this phenomenon as "insight" (Amador et al., 1993; David, 1991; Greenfield, Strauss, Bowers, & Mandelkern, 1989). Insight is multidimensional with five recognized factors including

awareness of having SMI, social consequences of having SMI, the need for treatment, symptoms of the disorder, and symptom attributions (Amador, et al., 1994; Mintz, Dobson, & Romney, 2003). Insight is not an all-or-none construct, but is suggested to occur on a continuum and may be measured globally or within each sub-domain (Amador et al., 1993; Fitzgerald, 2010). Insight is a major concern because poor insight (particularly at onset) is highly prevalent among people with SMI (Amador et al., 1994; Amador & David, 2004). However, inconsistencies in the empirical literature regarding the positive and negative effects of insight have left numerous unanswered questions as to the effects of insight on prognosis and outcomes associated with having SMI.

The Insight Paradox

In recent years, considerable research has been dedicated to the paradoxical effects associated with gaining higher insight into SMI (Lysaker et al., 2007). Cross-sectional and longitudinal studies have shown that higher insight is correlated with increased adherence to psychological treatment (Brent, Giuliano, Zimmet, Keshavan, & Seidman, 2011; Byerly, Fischer, Carmody, & Rush, 2005a) and psychotropic medication (Beck, Cavelti, Kvrgic, Kleim, & Vauth, 2011; Byerly et al., 2005b; Mohamed et al., 2009). Through increased adherence insight may also reduce primary diagnostic (Gharabawi, Lasser, Bossie, Zhu, & Amador, 2006; Mohamed et al, 2009) and global symptomatology (Mintz et al., 2003),

improve community functioning (Lysaker, Bryson, & Bell, 2002; Mohamed et al, 2009), aid in regaining self-identity (Lincoln, Lüllman, & Reif, 2007; Young & Ensing, 1999) and result in a more favorable prognosis (Amador, 2006; McGlashan, 2008). Lincoln et al. (2007) coined the term "usable insight" to describe when insight is beneficial to the course of illness among people with SMI.

Unfortunately, insight is not always beneficial for people with SMI. Studies have shown that higher insight may also be related to increased hopelessness (Hasson-Ohayon, Kravertz, Meir, & Rozencwaig, 2009; Hasson-Ohayon, Roe, Kravertz, Levy-Frank, & Meir, 2011) and depressive symptomatology (Cavelti, Beck, Kvrgic, Kossoway & Vauth, 2012; Mohamed et al., 2009; Smith et al., 2004). Additionally, higher insight is related to decreased self-efficacy (Bracke, Christiaens, & Verhaeghe, 2008; Kleim et al., 2008), self-esteem (Carroll, Pantelis, & Harvey, 2004), and overall quality of life (QoL; Boyer et al., 2012; Staring et al., 2009). Even more alarming is that increased insight is predictive of increased suicidal ideation and actions (Evren & Evren, 2004; Karow et al., 2008; Sharaf, Ossman, & Lachine, 2012). Further, this pattern of results has been shown to be independent of primary diagnostic symptomatology (Iqbal, Birchwood, Chadwick, & Trower, 2000; Schwartz & Smith, 2004). For a summarized view of the insight paradox, see table 2.

Table 2. The paradoxical effects of high insight on persons with SMI.

Positive Outcomes	
Medication Adherence^{+}	Community Functioning^{+}
Treatment Adherence^{+}	Favorable Prognosis^{+}
Symptom Reduction^{+}	Self-Identity^{+}
Negative Outcomes	
Depressive Symptoms^{+}	Hope^{-}
Self-Stigma^{+}	QoL^{-}
Suicide Attempts^{+}	Self-Efficacy^{-}
Suicidal Ideation^{+}	Self-Esteem^{-}

NOTE: $^{+}$ Indicates an increase in corresponding factor, $^{-}$ Indicates a decrease.

As evidenced above, research has demonstrated findings for the paradoxical nature of insight making it difficult to assess insight as a positive or negative factor for illness. However, another theme that has emerged from the literature is that most of the aforementioned correlates of insight (e.g., self-efficacy, depression, hope, etc.) are also correlates of both insider and outsider conceptualizations of recovery. Further, several of these factors have been utilized as latent variables and proxy measures for insider conceptualizations of recovery. Thus, insight may play an important role in recovery.

Insight and Recovery

Insight has a significant impact on the course of illness and is considered crucial to the recovery process (Amador, 2006; Staring et al., 2011). Further, insight is a major concern among practitioners for transitioning toward recovery-oriented services (Davidson et al., 2006). Specifically, practitioners have questioned whether it is possible to be in a recovery process if the individual does not endorse having an illness (Lincoln et al., 2007). While this concern has been empirically investigated within the recovery context, only three studies have examined this relationship using instruments specifically designed to measure insider conceptualizations. Fitzgerald (2010) found that people with SMI and high insight may have high self-awareness before, during, and after symptomatic episodes, try to make sense of these experiences, and coherently incorporate them into their self-concept ('integrated' recovery style). People with low insight may dichotomize symptomatic and non-symptomatic experience and not incorporate episodes into their self-concept ('sealing over' recovery style). Staring et al. (2011) demonstrated that an integrated recovery style predicted symptom remission at 12-month follow-up regardless of remission status at baseline. O'Donoghue et al. (2011) found that a sealing over recovery style predicted a higher risk of involuntary hospitalization and that insight was moderately related to (retrospective) beliefs that admission was necessary. These studies examined relationships between people's recovery style, which is part of the recovery process, but recovery style does not account for what stage of recovery people may be in.

Qualitative research has shown that developing insight into illness and a post-diagnostic identity is essential to the recovery process. Young and Ensing (1999) emphasized regaining what was lost in the wake of illness onset and diagnosis and moving forward in life. This includes regaining aspects of one's self and integrating them to form a post-diagnostic identity, realizing that there is more to self than illness, and learning to live in the moment and be honest with self and others. Similar concepts emerged when Andresen et al. (2003) utilized qualitative data attained from consumer focus groups to develop their five-stage recovery model. These findings have since been supported by quantitative methodologies (Andresen et al., 2006; Andresen, Caputi, & Oades, 2010). A qualitative study by Jorgenson (1995) suggested that insight may operate somewhat independently of diagnostic symptoms indicating that insight may be a distinct component of the recovery process. A meta-analysis by Mintz et al. (2003) indicated that only 1% of the variability in insight may be accounted for by symptom severity. Additional quantitative studies have also replicated these findings (Drake, Mueser, & Brunette, 2007; Staring et al., 2011).

The Social Stigma of Mental Illness

Sociologist Erving Goffman (1963) described stigma as the negative evaluation of a person as tainted or discredited on the basis of personal attributes. He posited that these attributes could be visible or hidden; mental illness (MI) can meet both criteria (e.g.,

hidden diagnosis, visible symptomatic behaviors). Stigmatization of individuals with MI affects many of the 20% of Americans who have mental disorders and is pervasive across countries and continents (Angermeyer, Buyantags, Kenzine, & Matschinger, 2004; Crisp, Gelder, Goddard, & Meltzer, 2000; Kurihara, Kato, Sakamoto, Reverger, & Kitamura, 2000; Yang, Chiriboga and Obazaki, 2009). Membership in stigmatized groups can lead to harmful stereotypes, prejudice, and discrimination from out-group members (e.g., people without MI; Hinshaw & Stier, 2008; Phelan, Link, & Dovidio, 2008). The Surgeon General's Report on Mental Health (1999) recognized that stigma is the single greatest concern facing mental health communities. Hence, people with MI are notable targets of stigma. MI stigma can be considered from the view point of the public at large or from the perspective of targets with illness themselves. Research often conflates the two.

Public Stigma of Mental Illness

Stigma towards individuals with MI has taken many forms ranging from harmful stereotypes to prejudice and discrimination. Research has shown that members of the general public often desire social distance from (Angermeyer et al., 2004; Martin, Pescosolido, Olafsdottir, & McCleod, 2007; Rüsch, Todd, Bodenhausen, & Corrigan, 2010) and reject people with MI (Hayward & Bright, 1997; Martinez, Piff, Mendoza-Denton, & Hinshaw, 2011). Studies have also shown that MI is believed to have a more controllable onset and reversible course than physical illness (PI; Monteith & Petit, 2011;

Weiner, Perry, & Magnusson, 1988). People who make such attributions may be more stigmatizing and endorse beliefs that diagnosed individuals are to be blamed for their illness (Skinner, Berry, Griffith, & Byers, 1995; Stuart, 2008). Further, MI may be viewed as shameful (Rüsch, Corrigan, Todd, & Bodenhausen, 2011) and a sign of personal weakness (Yang at al., 2009). Finally, people may implicitly associate the thought of themselves having MI with shame (Rüsch et al., 2010).

Attributing personal responsibility for one's diagnosis elicits less compassion and understanding and precipitates anger toward people with MI when compared to PI (Angermeyer & Matschinger, 2003b; Teachman, Wilson, & Komarovskaya, 2006; Weiner et al., 1988). Such perceptions often lead to feelings that help is neither warranted nor deserved (Angermeyer & Matschinger, 2003a; Corrigan, 2000; Weiner et al., 1988). Interestingly, members of the general public believe that MI stigma is decreasing (Angermeyer & Matschinger, 2005). However, evidence suggests that MI stigma continues to increase (or remain static) despite the increase in available information to combat stigma (Goulden et al., 2011; Lyons, Hopley, & Horrocks, 2009; Phelan, Link, Steuve, & Pescosolido, 1999). Perhaps most concerning, is that these effects are not uncommon among current and future mental health professionals (Abbey et al., 2011; Covarrubias & Han, 2011; Peris, Teachman, & Nosek, 2008). Not surprisingly, these perceptions and attitudes have negative implications for people with mental illness.

Negative Effects of Stigma on Persons with Mental Illness

Being stigmatized for having SMI can have a detrimental impact in all life domains (Dovidio, Major, & Crocker, 2000; Jones et al., 1984). Specifically, being diagnosed with MI has been shown to limit employment (Corrigna & Kleinlein, 2005; Tsang et al., 2007) and housing opportunities (Dickerson, Sommerville, Origoni, Ringel, & Parente, 2002; Page, 1983, 1995). Stigma is also associated with increased depression, anxiety, and social avoidance (Jobe & Harrow, 2010) as well as decreased self-esteem (Corrigan, 2004; Link, Streuning, Neese-Todd, Asumssen, & Phelan, 2001), self-efficacy (Angell, Cooke, & Kovac, 2005; Vauth, Kleim, Wirtz, & Corrigan, 2007), hope and QoL (Yanos, Roe, Markus, & Lysaker, 2008; Staring et al., 2009; see Table 3). Previous research has shown that experiencing stigma may lead people to anticipate stigma as a learned response to their MI (Cechnicki, Angermeyer, & Bielańska, 2011) and perceive this stigma as public attempts to increase social distance and desire to reinforce existing social orders (Ilic et al., 2013). Not surprisingly, people with MI often report that the effects of stigma are often worse than the negative effects of the illness itself (Feldman & Crandall, 2007). Given the negative reactions toward people with MI, many people choose not to disclose their diagnosis for fear of social reprisal (Lysaker, Davis, Warman, Strasburg, & Beattie, 2007; Wahl, 1999).

Table 3. Negative effects of stigma on persons with SMI.

Negative Outcomes	
Anxiety^{+}	Hope^{-}
Depressive Symptoms^{+}	QoL^{-}
Self-Stigma^{+}	Self-Efficacy^{-}
Social Avoidance^{+}	Self-Esteem^{-}
	Treatment Adherence^{-}

NOTE: $^{+}$ Indicates an increase in corresponding factor, $^{-}$ Indicates a decrease.

Stigma is considered a primary barrier to seeking and remaining in treatment (Corrigan, 2004; Horton, 2007). Many potential consumers opt not to seek treatment, or are reluctant to adhere to treatment, specifically due to the stigma of MI (Bathje & Pryor, 2011; Ben-Porath, 2002; Corrigan & Kleinlein, 2005). Seeking treatment may put these individuals at risk for others learning of their diagnosis. Further, seeking mental health care may come with its own distinct stigma (i.e., weak, defensive, insecure, and unsociable; Judge, 1998; Sibicky & Dovidio, 1986). Stigma has also been highlighted as a barrier to receiving quality treatment from providers (Abbey et al., 2011; Corrigan, 2004; Covarrubias & Han, 2011) including the increased potential for over diagnosis and more negative prognosis (Peris et al., 2008). The fact that stigma associated with MI is often reported as a primary barrier to seeking mental health treatment constitutes a major public health concern (Corrigan & Penn, 1999; Horton, 2007).

Experienced vs. Internalized Stigma among Persons with Mental Illness

Social Reaction theory (Becker, 1963) suggests that people with MI may experience stigma living in societies that prominently endorse stigmatizing beliefs (often as a first impression) towards them. Further, this theory posits that stigmatized targets will internalize these beliefs and perceive themselves as having lower social value (Corrigan, Mueser, Bond, Drake, & Solomon 2008; Link, et al., 2001; Mak & Wu, 2006; Rüsch et al., 2005). According to this model, people develop views about MI from personal experience, peers, and media portrayals, among other sources. These experiences often carry little personal relevance if people (or those close to them) do not experience onset of MI. However, these beliefs may become detrimental to those who do develop MI (Link et al., 2001; Link & Phelan, 2001). This phenomenon has been termed 'internalized' or self-stigma (Link, 1987; Link, Streuning, Cullen, Shrout, & Dohrenwend, 1989).

Internalized stigma may often become integrated into an individual's post-diagnostic identity (Williams, 2008). However, the manifestation of internalized stigma relies on targets to *agree* with these external stereotypes in order to apply them to the self (Bathje & Pryor, 2011; Corrigan, Watson, & Barr, 2006; Watson & River, 2005). While many people with SMI are familiar with harmful stereotypes and stigmatizing attitudes towards their group (Corrigan et al., 2006; Jenkins & Carpenter-Song, 2008; Wright, Gronfein, & Owens, 2000), awareness of stigma is not necessarily synonymous with internalization (Corrigan & Calabrese, 2005; Crocker & Major, 1989; Devine, 1989; Fiske,

1998). Hence, *experienced* stigma is considered a necessary predecessor to *internalized* stigma and not the reverse (Corrigan et al., 2006; Vogel, Wade, & Hackler, 2007).

SMI research has often emphasized the negative effects of internalized rather than experienced stigma. This contrast may overlook the fact that people who do not internalize stigma may still experience its negative effects (e.g., barrier to employment, treatment, etc.; Jenkins & Carpenter-Song, 2008). Jacoby (1994) emphasized a distinction between 'felt' and 'enacted' stigma. Felt stigma is similar to internalized stigma in that it may lead to behaviors to hide one's diagnosis. However, felt stigma is unique in that people choose not to disclose their illness to avoid negative social consequences rather than shame or embarrassment. Enacted stigma is experienced prejudice and discrimination by persons with MI that do not internalize stigma. Jacoby (1994) argued that both could occur regardless of whether the person feels any negative views towards their illness. Thus, people that experience stigma, but do not internalize it may still convey similar cognitive and behavioral responses.

Insight, Stigma, and Recovery

An emerging body of research suggests that increased insight may be associated with more than just awareness of one's own illness, but awareness of related factors including the stigma associated with having MI (Norman, Windell, Lynch, & Machanda, 2011; Rüsch et al., 2009; Yanos et al., 2008). Specifically, evidence suggests that the

negative effects of insight may be increased by levels of both internalized (Lysaker et al., 2007) and experienced stigma (Norman et al., 2011). Further, evidence suggests that insight may have generally positive effects on individuals with MI in the absence of stigma (Lysaker et al., 2007; Williams, 2008). A small number of studies have examined how this relationship may affect factors that are considered important to the recovery process.

Lysaker et al. (2007) demonstrated that self-stigma moderates the relationship between insight and factors related to recovery (i.e., hope, self-esteem, and QoL). Specifically, people with high insight and minimal internalized stigma experienced greater QoL due to increased interpersonal functioning. Individuals that had high insight and moderate stigma had lower hope and self-esteem. Finally, people with low insight and mild-moderate stigma had more self-esteem and hope than those with high insight and moderate stigma, but did not differ in terms of interpersonal functioning. Yanos et al. (2008) found that decreased hope and self-esteem mediate the relationship between internalized stigma and outcomes negatively related to recovery (i.e., avoidant coping, social avoidance, and depression). Specifically, increased stigma lowers hope and self-esteem. This in turn leads to increased avoidant coping, social avoidance, and depressive symptoms. Insight did not mediate either relationship. Staring et al. (2009) provided additional evidence for the moderating impact of internalized stigma on relationships between insight and recovery-related outcome variables. Specifically, they replicated findings that high insight is associated with higher depression, and lower self-esteem and QoL. Further, they demonstrated that these associations are weaker for individuals with

low than with high internalized stigma. Ramadan and El Dod (2010) found that individuals with lower insight experienced both lower internalized stigma and higher subjective QoL than individuals with higher insight. However, they did not examine whether decreased QoL was a function of increased stigma. Fung, Tsang, and Chan (2010) demonstrated that insight factors (i.e., awareness of the benefits of medication, need for psychosocial treatment) mediate the relationship between self-stigma and treatment adherence among Chinese individuals with SMI. Specifically, increased internalized stigma leads to a decrease in insight pertaining to the beneficial effects of medication, which in turn leads to lower readiness for change, which led to a decrease in psychosocial treatment adherence. Moriarty, Jolley, Callanan, and Garety (2012) found that increased internalized stigma explained 42% of the variance in reduced psychosocial activity, while insight did not significantly predict lower activity levels. However, the authors did not examine the possibility of an interaction between these two predictors. Finally, a single study by Norman and colleagues (2011) found that *experienced* stigma moderates the relationship between insight and psychological well-being (i.e., self-esteem, anxiety, and anger/hostility). Specifically, greater experienced stigma was associated with lower psychological well-being among individuals with higher rather than lower insight. These studies affirm the possibility of an empirical relationship between insight and factors related to the recovery process, and that both experienced and internalized stigma may play moderating roles in this process. These relationship patterns also support the hypothesized role of stigma in the insight paradox such that higher insight is related to better

intrapersonal outcomes when stigma is lower, with the reverse being true when stigma is higher (Table 4).

Table 4. Stigma moderates the relationship between insight and recovery.

High Insight/Low Stigma	
Interpersonal Functioning^{+}	Depressive Symptoms $^{-}$
QoL^{+}	
Self-Esteem^{+}	
High Insight/Moderate-to-High Stigma	
Anxiety^{+}	Hope^{-}
Depressive Symptoms^{+}	QoL^{-}
	Self-Esteem^{-}
Low Insight/Low-to-Moderate Stigma	
Hope^{+}	
QoL^{+}	
Self-Esteem^{+}	

The Current Study

Recent evidence suggests that the relationship between higher insight and internalized stigma negatively affects factors related to the recovery process. Specifically,

high insight has been associated with negative outcomes when internalized stigma is also high and positive outcomes when stigma is lower (Lysaker et al., 2007; Ramadan & El Dod, 2010; Staring et al., 2009; Yanos et al., 2008). A similar pattern has been observed for experienced stigma (Norman et al., 2011). However, this evidence is based on correlates of the recovery process (e.g., increased anger, anxiety, depressive symptoms, and avoidant coping as well as decreased psychological well-being, QoL, self-esteem, etc.) or utilized as latent variables and proxy measures of recovery. To my knowledge, no study has examined how the relationship between insight and stigma may directly affect recovery using measures specifically designed to measure the recovery process itself. Further, existing studies have typically examined these relationships focusing on *internalized* stigma. To date, only a single previous study (see Norman et al., 2011) has examined the effects of *experienced* stigma, a known precursor and important factor that may occur in the absence of internalized stigma. However, this study emphasized the moderating effects of experienced stigma on the relationship between insight and psychological well-being, and not the recovery process specifically.

The primary aim of the current study was to investigate how experienced stigma affects the relationship between insight and psychological recovery among persons with SMI. Specifically, this study examined whether increased insight into the fact that one has SMI is associated with increased personal *growth*, the highest stage of the psychological recovery process. Further, this study addressed whether experiencing stigma (or lack thereof) via discrimination and fear of disclosing the fact that one has SMI moderates the

relationship between insight and growth (Figure 1). By utilizing the 'Growth' stage of recovery as our criterion, we were able to examine how the relationship between insight and stigma affects the ideal goal for persons in the recovery process.

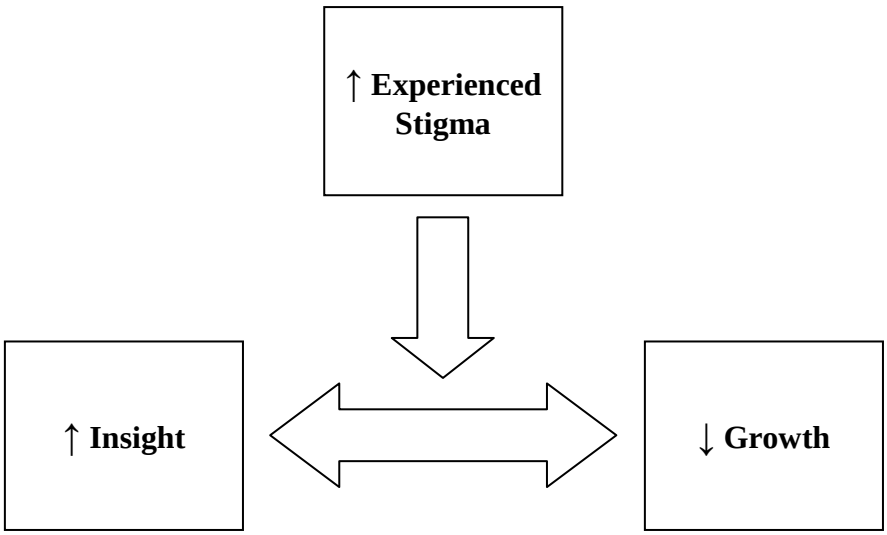

Figure 1. Experienced stigma moderates the relationship between high insight and the 'Growth' stage of psychological recovery.

All participants were evaluated within each stage of psychological recovery, but not all participants were currently in the growth stage. The current study also investigated this distinction by examining the aforementioned relationships between insight and stigma across all stages of psychological recovery. The exploratory aim of this study examined whether increased insight is associated with the people's *current stage* in the psychological recovery process? Further, does experienced stigma moderate this relationship between insight and people's current stage of recovery? Specifically, the exploratory aim examined

if higher insight is associated with a higher current stage of recovery among persons that experience lower stigma. Conversely, whether higher insight is associated with a lower stage of recovery among those that experience lower stigma (Figure 2)?

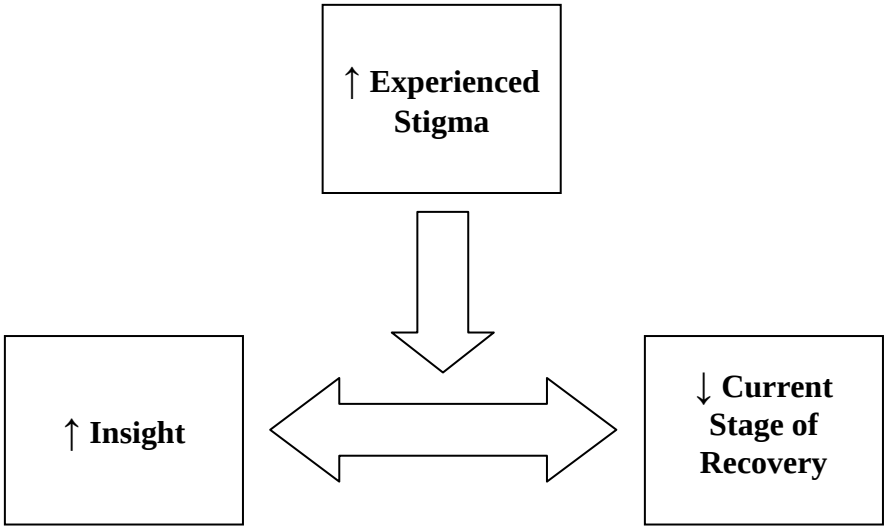

Figure 2. Experienced stigma moderates the relationship between high insight and people's current 'stage' of psychological recovery[1].

The current study differed from previous research because psychological recovery was conceptualized within the 5-stage model developed by Andresen and colleagues (2003, 2006; see Table 1). Further, this study utilized an instrument specifically designed to measure this 5-stage recovery process rather than relying on psychosocial correlates or proxy measures of recovery. In addition, this study expanded upon previous research by

[1] *Note.* The exploratory aim of this study differed from the primary aim because the criterion variable of interest was participants' current stage of recovery rather than their current psychological growth. See measures section for further clarification (i.e., participant scores utilized).

employing a scale designed to measure experienced stigma among persons with MI (King et al., 2007) rather than extrapolating from a sub-scale designed to measure internalized stigma (see Norman et al., 2011). This study contributes to our understanding of how environmental factors such as experienced stigma may affect or relate to cognitive factors (i.e., insight) that can affect the course of personalized recovery within this population.

Hypotheses

Primary Hypotheses

Hypothesis One: When overall level of insight is higher, participants would perceive themselves to (currently) be higher in the growth stage of recovery. *Hypothesis Two*: Individuals who experience greater stigma (both experienced stigma and fear of disclosure) would perceive themselves to be lower in the growth stage of recovery than if they were experiencing lower stigma. *Hypothesis Three*: Stigma will moderate the relationship between insight and the growth stage of recovery such that the main effect predicted in hypothesis 1 will be qualified by an interaction between insight and experienced stigma. Specifically, the positive relationship between insight and growth would remain true for individuals that experienced lower stigma. The reverse would be true of individuals that experienced greater stigma such that increased insight would be associated with lower perceived growth.

Exploratory Hypotheses

Not all persons with SMI are anticipated to be in the growth stage of psychological recovery. These exploratory hypotheses examined how insight, stigma, and their interaction affect what stage of recovery participants perceived themselves to be in. *Hypothesis Four*: When overall level of insight is higher, participants would perceive themselves to (currently) be at a higher stage of recovery overall. *Hypothesis Five*: Individuals that experience greater stigma would perceive themselves to be at a lower stage of recovery overall than if they experienced lower stigma. *Hypothesis Six*: Stigma would also moderate the exploratory relationship between insight and recovery such that the main effect predicted in hypothesis 4 would be qualified by an interaction between insight and experienced stigma. Specifically, the aforementioned positive relationship between insight and an individual's current stage of recovery would remain true for individuals that experienced lower stigma. Conversely, for individuals that experienced greater stigma, increased insight would be associated with a lower current stage of recovery.

CHAPTER 3

METHODOLOGY

Participants

Participants were recruited from an outpatient day program at an urban university-affiliated community behavioral health center. This multi-site behavioral health center is part of a larger medical center and is described as a "Life Skills Rehabilitation Center" offering comprehensive health and wellness support services including case management, medication management, peer support, physical fitness, structured skill-building groups and other rehabilitation services (Truman Medical Center, 2012). To be eligible for the current study, potential participants must have been 18-years old and previously diagnosed with SMI, including diagnoses of schizophrenia (SZ), schizoaffective (SZA), major depression (MDD), and bipolar (BP) disorders. Exclusionary criteria included known neurological disease, traumatic brain injury, developmental disability, major physical impairments, and substance abuse/dependence in the prior 30 days. These factors were chosen because they may negatively affect task performance and may confound with the psychological recovery process. For a comprehensive view of participant recruitment and eligibility requirements see Figure 3.

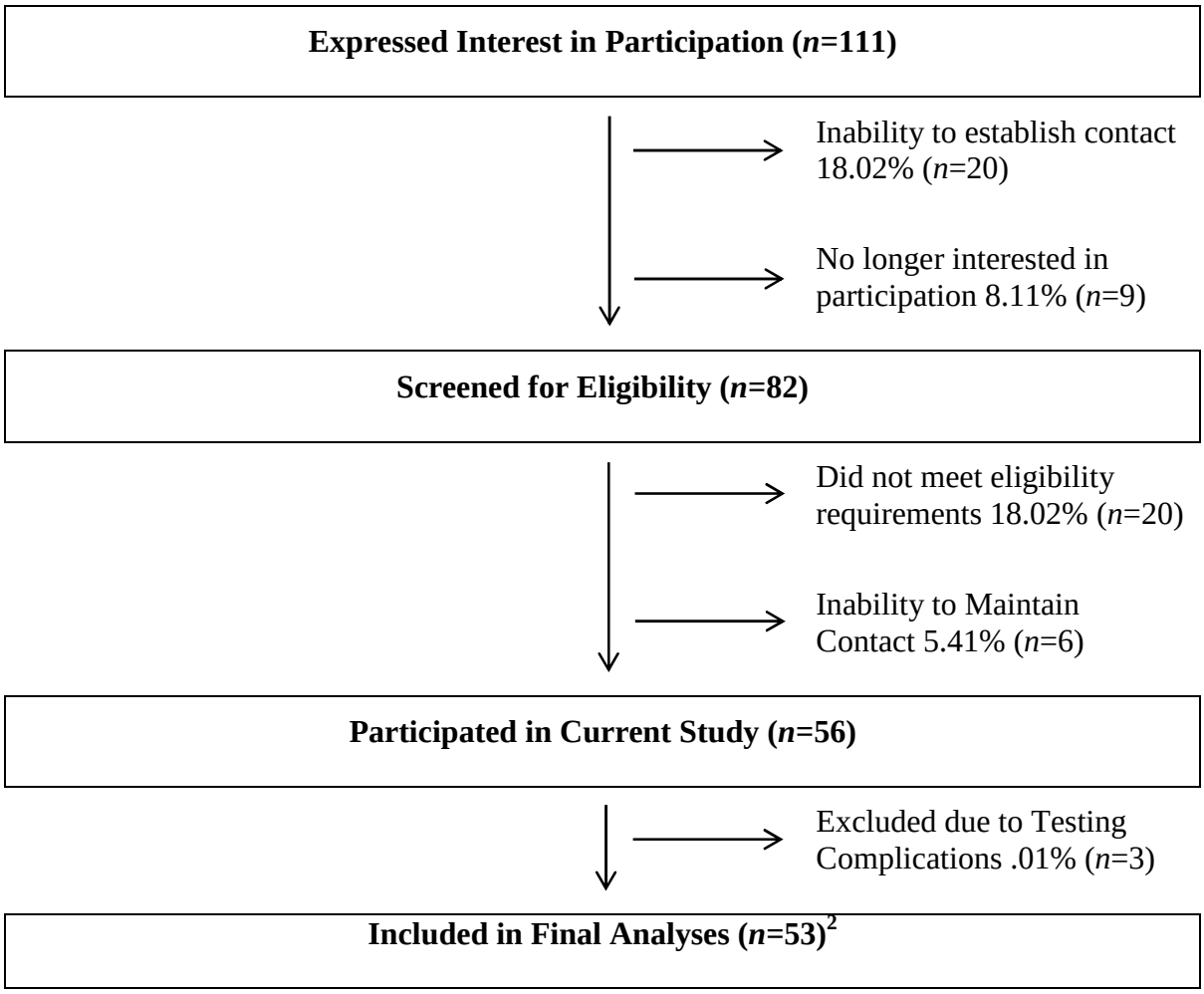

Figure 3. Overview of participant recruitment and participation for current study[3].

[2] Three participants were excluded from the final sample due to complications with testing. One participant was excluded due to a language barrier and heightened anxiety during interview questions, another participant was excluded due to low reading level and perceived low effort during interview questions, and the final participant was excluded for having self-reported seizure disorder not reported during initial screening. No participants were excluded because of attrition or as outliers. The final for the current sample included 53 participants.

[3] *Note.* Participant recruitment reporting standards adapted with modification from the CONSORT 2010 guidelines for reporting randomized controlled trials (Moher et al., 2012). Final response rate for sample was 47.75% (*n*=53)

Fifty-three persons with SMI (43.40% female) ranging from 23-60 years old (*m*=46.15, *sd*=9.31) participated in the current study. Participant diagnostic composition for the sample was 52.83% being diagnosed with SZ (*n*=28), 15.09% with SZA (*n*=8), 26.42% with MDD (*n*=14), and 5.66% with BP disorders (*n*=3). The Structured Clinical Interview for the DSM-IV (SCID-IV; First, Spitzer, Gibbon, & Williams, 2002) was utilized to confirm participant diagnoses. Racial and ethnic composition of the sample was as follows: 52.83% (*n*=28) of participants reported being African American/Black, 30.19% (*n*=16) were Caucasian/White, 3.77% (*n*=2) were American Indian or Alaskan Native, 1.89% (*n*=1) was Hispanic American, 5.66% (*n*=3) identified with being of multi-racial descent, and 5.66% (*n*=3) reported being of 'other' racial and ethnic background. All study procedures were approved by approval from the institutional review board at the University of Missouri-Kansas City and the affiliated mental health center. All participants were consented prior to administration of testing materials. For participants with legal guardians (3.57%; *n*=2), guardian consent was obtained as an eligibility requirement in addition to the participants consent. Demographic characteristics are reported in table 5.

Table 5. Participant demographic characteristics for SMI sample.

Participants	*n*=53
Age (*m*±*sd*)	46.15±9.31 years
Education *n*(%)	
• Did not attend school	1(1.89%)
• Some High School	10(18.87%)
• High School Graduate/GED	20(37.73%)
• Post-High School (Non-Collegiate)	1(1.89%)
• Some College	21(37.73%)
• College Graduate	1(1.89%)
Gender *n*(%)	
• Female	23(43.40%)
• Male	30(56.60%)
Living Situation *n*(%)	
• Emergency Shelter	1(1.89%)
• Homeless	1(1.89%)
• Independent Living	35(66.03%)
• Living with Relatives (Largely Independent)	2(3.77%)
• Long-term Care Facility	1(1.89%)
• Supervised Care Housing	13(24.53%)
Ethnicity *n*(%)	
• African American/Black	28(52.83%)
• American Indian or Alaskan Native	2(3.77%)
• Caucasian/White	16(30.19%)
• Hispanic American	1(1.89%)
• Multi-Racial	3(5.66%)
• Other Racial/Ethnic Group	3(5.66%)
SMI Diagnosis *n*(%)	
• Bipolar Disorder	3(5.66%)
• Major Depressive Disorder	14(26.42%)
• Schizoaffective Disorder	8(15.09%)
• Schizophrenia	28(52.83%)
Volunteer Status *n*(%)	
• Currently Volunteering	28(52.83%)
• Not Currently Volunteering	25(47.17%)

Note. The behavioral health program at TMC provides opportunities for consumers to volunteer their services to the program and to learn work-related skills.

Procedure

Participants were recruited via announcements and flyers distributed at consumer and case management meetings to inform potential participants and behavioral health staff about the study. Consumers turned in their completed flyers to case management staff and flyers were subsequently collected by the researchers. Following consenting procedures, participants completed a demographic profile as well as measures of diagnostic confirmation, insight, recovery, and experienced stigma. All testing sessions took place in private testing rooms at one of the behavioral health center sites. Testing took place over two sessions and lasted approximately 3 to 5 hours. The second testing session was scheduled in-person following completion of session one. While every attempt was made for participants to complete the second session within 1-3 days of session one, this was not always feasible. The actual time between testing sessions ranged from (same day) 0-23 days (*median*=2) of testing session one. All materials were administered in a semi-structured interview format. Upon study completion, participants were thanked for their time and received $30 in compensation.

Measures

The following measures were administered: The SCID-IV (First et al., 2002), the Stages of Recovery Instrument (STORI; Andresen et al., 2006), The Scale to Assess

Unawareness of Mental Disorder (SUMD; Amador et al., 1993), and the Stigma Scale (King et al., 2007). Each measure was administered in a semi-structured clinical interview format. The SCID-IV was administered for diagnostic confirmation and did not yield a scale score. The STORI and Stigma Scale yielded multiple sub-scale scores and the SUMD had a single scale score. These measures are described below.

The Structured Clinical Interview for the DSM-IV

The SCID-IV (First et al., 2002) is a semi-structured clinical interview used to determine DSM-IV Axis I diagnoses. Individual semi-structured interview questions assess presence of primary diagnostic symptomatology. The current study utilized the A-Module, which assesses lifetime (current and past) prevalence of mood disorder (i.e., depression and manic) symptoms and the B-module, which assesses lifetime prevalence of psychotic disorder (i.e., SZ/SZA) symptoms. The SCID is also designed to accommodate additional diagnostic information including staff reports as well as cognitive and behavioral observation (e.g., disorganization). If participant's symptomatology meets DSM-IV diagnostic criteria for one of the aforementioned diagnoses, the diagnosis is confirmed by the SCID-IV.

The Stages of Recovery Instrument

The STORI (Andresen et al., 2006) is a 50-item questionnaire designed to measure recovery from the perspective of mental health consumers. All items are measured on 6-pt. Likert type scales anchored by 0 (*not at all true now*) and 5 (*very true now*). The STORI has a 5-factor structure to measure each sequential stage of the psychological recovery process. These 10-item factors in conceptual order are 'Moratorium', 'Awareness', 'Preparation', 'Rebuilding', and 'Growth' (see Appendix A). These factors represent the individual's *current* stage of change with growth representing an ideal goal for persons with SMI in the recovery process. Only participant's summative scale scores for the Growth stage of recovery were utilized as the criterion variable to examine all three primary hypotheses.

Andresen and colleagues (2006) demonstrated that all five factors have 'good' to 'excellent' internal reliability (α=.88-.94; Chronbach & Shavelson, 2004). Weeks, Slade, and Hayward (2011) also found good-to-excellent internal (α=.81-.97) and excellent test-retest reliability (*r*=.90-.96) among STORI subscales. The STORI has also demonstrated strong correlations with the widely used Recovery Assessment Scale (RAS; *r*=-.640-.735) as well as measures of resilience, hope, and psychological well-being (*r*=.52-.62). This pattern of results indicates good concurrent validity (Andresen et al., 2006; Burgess, Pirkis, Coombs, & Rosen, 2011; Weeks et al., 2011). Evidence of divergent validity and the ordinal stage structure has been established in that sequential stages are less correlated to

one another the further apart they are conceptually (Andresen et al., 2006; Weeks et al., 2011). Further, this pattern of results was replicated with the RAS, resilience, hope, and well-being (e.g., correlations between stages and RAS scores positively increase with each sequential stage of recovery). Given the hierarchical (stage) structure of the STORI, all five summative stage scores will be utilized to examine recovery as a rank-ordered (ordinal) dependent variable to investigate the exploratory hypotheses. All Moratorium (stage 1) items will be reverse-scored so that higher scores indicate positive outcomes (Andresen et al., 2006), while the subsequent stage scores remaining in their original metric which reflect positive scores as positive outcomes. For these hypotheses, the participant's highest stage score represents their current stage of recovery. It should be noted that subsequent cluster analyses have demonstrated that STORI items may form only three clusters indicating that the STORI may not psychometrically represent all five stages of recovery (Andresen et al., 2006; Weeks et al., 2011). This possibility will be examined prior to primary analyses by examining the correlations between recovery stages for evidence of multicollinearity among stages ($r \geq .80$; Judd, McClelland, & Ryan, 2008).

Scale to Assess Unawareness of Mental Disorder

The Scale to Assess Unawareness of Mental Disorders (SUMD; Amador et al., 1993, 1994) is a 9-item scale designed to assess current and past awareness of SMI. Additionally, individual items measure the five factors of insight (i.e., awareness of having

SMI, social consequences of having SMI, the need for treatment, symptoms of the disorder, and symptom attributions; Amador, et al., 1994; Mintz et al., 2003). All 9-items can also be summed together for a single comprehensive measure of insight (i.e., awareness of disorder and symptomatology). Alternately, the first 3-items can be summed to assess 'Unawareness of Mental Disorder' with the preceding 6-items comprising a 'Unawareness of Symptoms' subscale (Arduini et al., 2003; Smith, Hull, Israel, & Wilson, 2000; Smith et al., 2004). Finally, the SUMD can be utilized to assess current or past insight. All items are rated on 3-pt. graded response scales ranging from 1 (*Aware*) to 3 (*Severely Unaware*) with a fourth option 0 (*Not Applicable*) if the item does not apply to the individual (see Appendix B). The SUMD can be administered as a semi-structured interview or completed from data collected from other semi-structured interviews. Both methods were used in the current study such that questions that cannot be answered from other semi-structured interviews were assessed. Specifically, participant endorsement of having a mental disorder (initially at phone screening) and symptomatology (e.g., SCID-IV) was assessed during semi-structured clinical interviews. Based upon this preliminary information, follow-up questions pertaining to individual SUMD items (see Appendix B) were administered to verify whether the participant was aware, somewhat aware, or unaware of having SMI (e.g., endorsing plausible diagnosis, attribution of symptomatology and associated consequences of SMI to diagnosis, and the effectiveness of medication).

Amador and colleagues (1993, 1994) demonstrated that the current awareness subscale has excellent internal reliability while the past insight subscale has questionable

reliability. The past awareness sub-scale has also been shown to have non-significant to small correlations with other measures of insight (Cuesta, Peralta, & Zarzuela, 2000). However, the current subscale (Aleman, Agrawal, Morgan, & David, 2006; Kemp & Lambert, 1995; Lincoln et al., 2007) has been shown to have excellent convergent validity with other widely used measures of insight. Additionally, the current and past awareness subscales were shown to be multicollinear in the validation process (r=.55-.67; Agrawal, Bhat, & Kuruvilla, 1994). SUMD items have good to excellent inter-rater (r=.77-.99) and moderate to good test-retest reliability (r=.36-.80; Amador et al., 1994). The cross-sectional design of the current study as well as the semi-structured interviews emphasizing participant's current state of illness allow for assessment of current rather than past insight. This strategy is also beneficial given the low internal reliability of the past awareness subscale and its demonstrated multicollinearity with the current awareness subscale. Additionally, the current study was interested in examining participants' awareness of illness and not awareness of their individual symptoms. Thus, the current study utilized the 3-item (current) 'Unawareness of Mental Disorder' subscale (Arduini et al., 2003; Smith et al., 2000, 2004). Participants' SUMD scores were reverse-scored to ensure that higher scores indicated greater insight.

The Stigma Scale

The Stigma Scale (King et al., 2007) is a 28-item measure designed to examine the *experienced* stigma of having a mental illness from the perspective of the identified individual. All items are measured on 5-pt. Likert-type scales ranging from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*). This measure is comprised of three factors including 'Discrimination', 'Disclosure', and 'Positive Aspects' (see Appendix C). The discrimination factor is a 13-item subscale designed to assess MI stigma via discrimination in the form of perceived hostility by others and lost opportunities due to prejudicial attitudes. The disclosure factor is a 10-item subscale designed to assess stigma via concerns about disclosing one's diagnosis or information regarding their illness. The positive aspects factor is a 5-item subscale designed to assess the positive aspects of having a mental disorder. In the initial validation process (see King et al., 2007) the discrimination (α=.87) and disclosure (α=.85) factors demonstrated good internal reliability (α=.80-.89; Chronbach & Shavelson, 2004). However, the Positive Aspects factor (α=.64) demonstrated 'questionable' reliability (α=.60-.69; Chronbach & Shavelson, 2004). It should be noted that responses to scale items are not dichotomous such that responses do not necessarily indicate that these individuals either experience or do not experience stigma. Rather, higher scale responses indicate greater experienced stigma for the Discrimination and Disclosure factors, while lower scores indicate greater stigma for the positive aspects factor.

The validation of the Stigma Scale suffered from three primary limitations. These include a sample size (*n*=193) lower than a recommended minimum ratio of 10 participants per item for reliable estimates of exploratory factor analysis (EFA; Furr & Bacharach, 2008; Osterlind, 2009), little ethnic diversity (77% Caucasian), and questionable internal reliability of the positive aspects factor. Fowler et al. (2010) re-examined the factor structure of the Stigma Scale in a larger (*n*=1,436), more ethnically-diverse (55% Caucasian) sample of mental health consumers in San Diego County. An initial EFA found that the internal reliability of the positive aspects factors remained questionable (α=.61) while the discrimination and disclosure factors maintained good internal reliability. Additionally, stigma as a construct excludes positive aspects by definition (Goffman, 1963; Haghighat, 2007). Hence, a second EFA excluding the 5-items of the positive aspects factor revealed that the remaining 23 items loaded onto 3 separate factors. This analysis yielded modified versions of the discrimination (8-items; (α=.89) and disclosure (10-items; (α=.90) factors while maintaining good and excellent (α≥.90; Chronbach & Shavelson, 2004) internal reliability respectively. Additionally, the EFA revealed a 5-item factor containing items regarding individuals not feeling embarrassed or bad about having MI, not experiencing any trouble from others for having MI, and willingness to disclose their diagnosis. Further, this factor emerged across gender, ethnicity, and MI diagnostic groups while maintaining 'acceptable' internal reliability (α=.70-.79; Chronbach & Shavelson, 2004). Colleagues and I termed this the 'No Stigma' factor because this factor may be representative of not experiencing and/or not being affected by stigma. Finally, model fit

indices for this final EFA suggested that this model was a good fit of the data. This modified version of the stigma scale was utilized in the current study. The No Stigma factor scores were reversed so that higher scores indicated greater stigma.

The discrimination and disclosure factors have shown discriminant validity (*r*=-.45-.64) with the Rosenberg Self-Esteem Scale (Rosenberg, 1965). Specifically, as experienced discrimination and fear of disclosing one's diagnosis increase, self-esteem decreases (King et al., 2007). It should be noted that further psychometric evaluation of the Stigma Scale is necessary (King et al., 2007). The stigma scale was chosen as it is one of the few comprehensive validated scales designed to measure experienced SMI stigma. Further, it was the only experienced stigma measure validated within SMI populations prior to IRB submission (other measures have since become available, see Brohan et al., In Press; with other pre-existing measures being validated within SMI populations, see Brohan, Slade, Clement, & Thornicroft, 2010). Further, its subscales have demonstrated good psychometric properties in a large community mental health sample (Fowler et al., 2010). The authors suggest using additive scores for each subscale. However, the current study utilized the subscale means to control for the differing number of items among subscales inflating scores for comparisons (Fowler et al., 2010; Osterlind, 2009). For the current study the discrimination and disclosure subscale means were be averaged as the 'Experienced Stigma' score with the no stigma scale providing a second (inverse) index of experienced stigma. Means, standard deviations, and internal reliability of all primary measures for the current study are reported in table 6.

Table 6. Reliability and factor scores for all primary measures.

Measure	Scale (Reliability)	Score±*sd*
STORI	Stage 1- Moratorium (α=.83)	17.25±10.02
	Stage 2- Awareness (α=.84)	29.92±9.36
	Stage 3- Preparation (α=.86)	33.19±9.29
	Stage 4- Rebuilding (α=.88)	37.31±8.34
	Stage 5- Growth (α=.91)	35.26±10.24
Stigma Scale	Experienced Stigma (α=.89)	2.04±.73
	No Stigma (α=.67)	1.94±.85
SUMD	Insight (α=.68)	8.02±1.32

Note. STORI and SUMD scores are additive while Stigma Scale scores are means. The expanded growth scale (additive of stages 4 and 5; see below) yielded 'excellent' internal reliability (α=.95). The combined 'experienced stigma' scale is the grand mean of discrimination and disclosure factors.

Statistical Analyses

Primary Hypotheses

The current study examined the influence of individual predictors and interactions simultaneously rather than hierarchically, an analytic strategy presented in a similar study by Lysaker and colleagues (2007). A single multiple regression analysis was utilized to examine the three primary hypotheses. Using the same analysis for examining all three hypotheses conserves Type I error rate without the need for post-hoc corrections (e.g., Bonferroni test) which may produce conservative estimates of the observed effects

(Kromrey & LaRocca, 1995; Olejnik, Li, Suppatathum, & Huberty, 1997). All predictors and covariates were centered at their mean for analysis to reduce multicollinearity among predictors and to allow for predictive interpretations to occur at average levels of other measured variables rather than an arbitrary zero-point (e.g., the influence of other predictors not being present; Jaccard & Turisi, 2003; Judd & Sadler, 2003). A power analysis indicated a 64.6% of chance detecting *medium* (*adj.* R^2 =.10-.29; Judd et al., 2009) and a 97.9% chance of *large* effect sizes (*adj.* $R^2 \geq .30$) using a multiple regression analysis with a sample of 53 participants.

Hypothesis One

The first hypothesis predicts that when overall insight is greater, participants will (currently) perceive themselves to be higher in the growth stage of recovery. In this regression analysis, the growth stage of recovery score (from the STORI) was entered as the criterion variable with insight (SUMD) being examined as the predictor while controlling for participants experienced and no stigma scores (Stigma Scale) as well as their interactions with insight. Inclusion of these predictors as covariates in the model helps ensure that predictive estimates of insight are unbiased (Hull, Tedlie, & Lehn, 1992; Yzerbyt, Muller, & Judd, 2004). Specifically, excluding additional hypothesized predictors (including interactions) from main effects analysis results in higher standard error rates associated with that analysis, producing more conservative estimates. This

occurs because the variance explained by these additional hypothesized predictors is measured as standard error when they are excluded from the model (Yzerbyt et al., 2004).

Hypothesis Two

The second hypothesis predicts that participants that experience greater stigma (both experienced discrimination and fear of disclosure) will perceive themselves to be lower in the growth stage recovery. Within the same regression analysis, it was examined whether greater experienced stigma predicts decreased growth than if participants experience lower stigma. Hence, experienced stigma was examined as the predictor of interest while controlling for no stigma, insight and its interactions with both stigma factors. As a predictor of secondary importance, the no stigma factor was examined as a predictor of psychological growth while controlling for experienced stigma, insight, and the previously specified interactions.

Hypothesis Three

The third hypothesis is that experienced stigma will moderate the relationship between insight and the growth stage of recovery. Specifically, the relationship between insight and growth (as presented in hypothesis 1) will remain true for participants that experience lower stigma. The reverse will be true for participants that experience greater

stigma such that increased insight will be associated with lower perceptions of psychological growth. The *interaction* between insight and experienced stigma was the predictor of interest in the regression analysis controlling for insight, experienced stigma as individual predictors, as well as the no stigma factor and its interaction with insight. As a measure of secondary importance, the *interaction* between no stigma and insight was examined as a predictor of psychological growth while controlling for experienced stigma, no stigma, and insight, and their previously specified interactions. The interaction terms were calculated by multiplying the centered insight and stigma variables allowing examination of whether the effects of insight on psychological recovery change at differing levels of experienced stigma (Judd, Kenny, & McClelland, 2001). This approach also reduces multicollinearity between interaction terms and their associated main effect components (Jaccard & Turisi, 2003; Robinson & Schumacher, 2009).

Exploratory Hypotheses

An ordinal repeated-measures regression analysis was utilized to examine the three exploratory hypotheses. The STORI yields a sub-scale score for each of the five sequential stages. This analysis helped control for participant scores in each incremental stage of recovery predicting their scores in other stages, which violates the independent errors assumption of the general linear model (Hedeker, 2003; Judd & Kenny, 1986; Sadler & Judd, 2001). This analysis was utilized to examine whether increased scores within each

stage of recovery stage are predicted by insight, stigma, and their interaction. All predictors and covariates were centered for analysis.

Hypothesis Four

The fourth hypothesis predicts that if overall insight is greater, participants will perceive themselves to be at higher stages of recovery. All five recovery scores (STORI) were entered as the outcome with insight (SUMD) being entered as the predictor while controlling for participants experienced and no stigma scores as well as their interactions with insight.

Hypothesis Five

The fifth hypothesis predicts that as participants experience greater stigma (both experienced discrimination and fear of disclosure), they will perceive themselves to be at lower stages of psychological recovery. Within the same analysis, it was examined whether greater experienced stigma predicts decreased recovery scores for sequential stages. Hence, experienced stigma was examined as the predictor of interest controlling for no stigma, insight, and its interactions with both stigma factors. Again, as a predictor of secondary importance, the no stigma factor was examined as a predictor of

psychological growth while controlling for experienced stigma, insight, and all of the previously specified interactions.

Hypothesis Six

The sixth hypothesis is that experienced stigma will moderate the relationship between insight and stages of psychological recovery. Specifically, the relationship between insight and recovery (as presented in hypothesis 4) will remain true for participants that experience lower stigma. The reverse will be true for participants that experience greater stigma such that higher insight will be associated with lower stages of recovery. The *interaction* between insight and stigma will be the predictor of interest while controlling for insight, experienced stigma as individual predictors, as well as the no stigma factor and its interaction with insight. As a measure of secondary importance, the *interaction* between no stigma and insight was examined as a predictor of changes between recovery stages while controlling for experienced stigma, no stigma, insight, and their specified interactions.

CHAPTER 4

RESULTS

Data Screening

Missing Data Analysis

Data screening procedures follow the recommendations of Tabachnick and Fiddell (2012). For the 53 participants that were included, 2 failed to answer one item, resulting in 2 items that were not answered total (>.001% of all possible items). Little's Missing Completely at Random Test (MCAR; Rubin & Little, 2002) was used to determine whether missing values for the STORI and Stigma Scale adhere to a predictable pattern of non-response among participants (no missing data was observed for the for the SUMD unawareness of mental disorder subscale). Little's MCAR was not significant for the STORI, $\chi^2(49)=48.813$, $p=.481$, or Stigma Scales, $\chi^2(27)=28.701$, $p=.376$. This allowed for the assumption that data were missing at random and not due to a confounding pattern (Baraldi & Enders, 2010; Howell, 2007). Missing values were imputed using maximum likelihood estimation (expectation maximization[4]) which estimates missing data from participant's scores on other items on the same scale (Bickel, 2007; Kline, 2010).

[4] Expectation maximization (EM) should only be performed when the MCAR assumption is met. If this assumption is not met, EM produces produces biased similar to other procedures (e.g., mean-substitutions, pairwise deletion, etc.; Baraldi & Enders 2010; Howell, 2007).

Outlier Analysis

Given the small sample size and power concerns for detecting medium effects, emphasis for exclusion was placed on whether an outlier introduced bias via inflating type I or II error rate (e.g., changes significance or direction of a prediction). *Z*-Scores were calculated for all variables to assess univariate outliers (≥3 *sd* from the mean) for each predictor and criterion variable. There was a single univariate outlier on the SUMD (z=3.138). However, this participant did not influence statistical significance of bivariate correlations or regression analyses, and was kept in the data for statistical power considerations. No other univariate outliers were reported. Next, outliers were examined within the context of the ordinary-least squares (OLS) regression equation. Statistical examination indicated no influential data points on the *dependent variable*[5] (Cook's d=.000-.002), *independent variables*[6] (*dfbeta*=-.513-.530), or the *relationship*[7] between the predictor and criterion variables (for each participant) did not influence the overall relationships between these variables (Leverage h=.005-.225). Finally, a Mahalanobis Distance Test (Mahalanobis, 1936) suggested that there were no multivariate outliers in the

[5] Cook's d≥1 indicates a potential outlier such that a significant change in the DV would be observed in the absence of an observation meeting this criteria (Cook, 1977; Cook & Weisberg, 1982).
[6] Standardized *dfbetas*≥2 indicate that the IV's prediction may be influenced by that specific data point (Belsley, Kuh, & Welsch, 1980; Howell, 2007).
[7] Leverage h≥.5 indicate outliers in the relationship between an IV and DV (Hoaglin & Welsch, 1978).

present sample[8], Mahalanobis *d*=.253-11.678. Hence, no participants were excluded as outliers from the regression model.

OLS Regression Assumptions

Assumptions of OLS regression procedures were explored. Several steps were taken to ensure that OLS regression assumptions were met (Tabachnick & Fiddell, 2012). Linearity[9] was assumed due to the symmetrical distribution around the horizontal slope observed in a scatterplot between predicted and observed values. The independence of errors[10] assumption was examined with the Durbin-Watson Test (Durbin & Watson, 1950, 1951) which yielded a value of 1.997 indicating an absence of autocorrelation among variables. The normality of OLS regression residuals assumption was examined via skewness statistics and normal probability (*Q*-*Q*) plots, both of which indicated a normal distribution of regression residuals. Homoscedasticity[11] was assumed due to the symmetrical distribution around the slope observed in a scatterplot between predicted and residual values. Variance Inflation Factor[12] (*VIF*; Fox, 1991) statistics suggest that the

[8] Mahalanobis *d* scores differ from univariate outlier statistics because it accounts for the variances and covariances produced when accounting for each of the participant's observed scores (all variables in the regression model; Kline, 2010). Mahalanobis $d \geq 17.45$ indicates a potential multivariate outlier for model specifying 4 predictors with a sample of 50 participants (Barnett & Lewis, 1978; Stevens, 1984).
[9] Indicates a lack of systematic errors in regression predictions. Linearity was further evidenced by the non-significant correlation between predicted and observed values, *r*=.000, *ns*.
[10] Durbin-Watson values ranging from 1.4-2.6 indicate an absence of autocorrelation with a sample of 50 participants (Jose, Nau, & Winkler, 2009).
[11] Indicates equal error variances across predicted values of the DV.
[12] $VIF \geq 4$indicates problematic multicollinearity (effect of predictor is four times larger than if it were uncorrelated with other predictors; Fox, 1997; Robinson & Schumaker, 2009).

correlations between the independent variables do not (significantly) artificially increases predicted estimates on the dependent variable, *VIF*=1.459-2.257. Finally, bivariate multicollinearity[13] was not assumed due to the bivariate correlations between predictors suggesting they measure separate constructs, *r*=-.582-.391.

Preliminary Analyses

Bivariate Correlations

Bivariate correlations were examined to assess multicollinearity and discriminant validity among STORI subscales (moratorium, awareness, preparation, and expanded growth). Similar to previous studies, sequential stages typically demonstrated weaker correlations with one another the further apart they are conceptually (Andresen et al., 2006; Weeks et al., 2011). Interestingly, the correlation between the rebuilding and growth stages of recovery demonstrated multicollinearity, r=.907, p<.001. Because multicollinearity indicates that they are measuring the same latent construct, these two subscales were summed to create a more comprehensive 'Expanded Growth' stage subscale. Increasing the number of items utilized to measure growth reduces the standard error of measurement and the internal reliability when compared to individual scales (α=.88-.91; see table 6), which in turn increases the statistical power of predicted estimates (Furr & Bacharach, 2008; Kline, 2010; Osterlind, 2009). Stage 1 (moratorium; reverse-

[13] Bivariate correlations ≥.80 indicate bivariate multicollinearity (Judd et al., 2008).

scored) was positively associated with expanded growth stage (r=.589, p<.001). Stage 2 (awareness) was positively associated with stages 3 (preparation; r=.770, p<.001) and the expanded growth stage(r=.392, p=.004). Stage 3 (preparation) was positively associated with the expanded growth scale (r=.628, p<.001). The observed correlations for the expanded growth scale indicate discriminant validity (with other STORI stages) with the original 10-item growth scale.

Next, bivariate relationships were examined between all independent (SUMD: insight; Stigma Scale: experienced stigma and no stigma-reversed) and dependent variables (STORI stages) to gain a better understanding of simple relationships between variables without the influence of other predictors. Insight was not associated with any of the stages measured by the STORI. However, insight was positively associated with participant's averaged experienced stigma score (r=.391, p=.004) and the (reversed) no stigma scale score (r=.383, p=.005). Together, this pattern of associations suggests that higher insight is associated with greater experienced stigma, but not self-reported psychological recovery.

Experienced stigma was only associated with the expanded growth scale (r=-.354, p=.01). The no stigma scale (reversed) was negatively associated with each stage of recovery including moratorium (reversed; r=-.513, p<.001), awareness (r=-.278, p=.044), preparation (r=-.338, p=.013), and the expanded growth scale (r=-.562, p<.001). This pattern of relationships largely suggests that greater experienced stigma is negatively associated with the growth (highest) stage of psychological recovery, but no other scales.

However, the reversed no stigma scale was positively associated with each stage of recovery. See table 7 for a comprehensive set of bivariate correlations.

Table 7. Bivariate correlations (two-tailed) between primary measures (*n*=53).

	STORI Stage 1	STORI Stage 2	STORI Stage 3	STORI Stage 4	STORI Stage 5	STORI Growth	SUMD Insight	Stigma Scale No Stigma	Stigma Scale Exp. Stigma
STORI Stage 1-Moratorium	1.000								
Sig.									
STORI Stage 2-Awareness	.006	1.000							
Sig.	.966								
STORI Stage 3-Preparation	.232	.770***	1.000						
Sig.	.094	.000							
STORI Stage 4-Rebuilding	.593***	.428**	.669***	1.000					
Sig.	.000	.002	.000						
STORI Stage 5-Growth	.561***	.349*	.566***	.907***	1.000				
Sig.	.000	.011	.000	.000					
STORI- Expanded Growth	.589***	.392**	.628***	.971***	.981***	1.000			
Sig.	.000	.004	.000	.000	.000				
SUMD Insight	.013	.017	-.086	-.123	-.195	-.172	1.000		
Sig.	.928	.903	.538	.384	.162	.222			
Stigma Scale-No Stigma	-.513***	-.278*	-.338*	-.525***	-.560***	-.562***	.383**	1.000	
Sig.	.000	.044	.013	.000	.000	.000	.005		
Stigma Scale-Exp. Stigma	-.175	-.117	-.232	-.287*	-.381**	-.354*	.391**	.646***	1.000
Sig.	.211	.404	.094	.039	.005	.010	.004	.000	

Note. For concerns of spacing STORI stages were presented as numerical stages in the horizontal columns and by stage names in vertical rows. STORI stage 1 (moratorium) reverse-scored so higher scores indicate positive outcomes. STORI stages 4 (rebuilding) and 5 (growth) were summed to create the expanded 'expanded growth' score. The no stigma factor of the Stigma Scale was reverse-score so that higher scores indicate greater stigma. The discrimination and disclosure factors of the Stigma Scale were averaged to calculate the 'experienced stigma' score. *** indicates correlation is significant at .001 level, ** indicates significance at .01 level, and * indicates significance at .05 level.

Data Analysis

Primary Hypotheses

Primary hypotheses were examined using a similar analytic strategy to Lysaker et al. (2007). A multiple regression analysis with the expanded growth stage of recovery scale (summative STORI stages 4 and 5) as the criterion with insight (SUMD), experienced stigma (grand mean of the Stigma Scale discrimination and disclosure factors) and the no stigma factor from the Stigma Scale, and their interactions between insight, experienced, and no stigma factors being entered simultaneously as predictors (or covariates). All predictors and covariates were centered for the analysis. The overall regression model with all predictors and interactions terms included was significant, $F(5, 46)=5.72$, $p<.001$, *adj.* $R^2=.316$. Taken together, after adjusting for the addition of all variables in the model, hypothesized predictors explained 31.6% of the variance in psychological growth. Results of individual hypothesized relationships are reported below. Summary of the regression analysis are reported in table 8.

Hypothesis One

The first hypothesis stated that when overall insight is greater, participants would currently perceive themselves to be higher in the growth stage of psychological recovery.

As mentioned above, the expanded growth stage of recovery (STORI) was entered as the dependent variable. Insight (SUMD) was examined as the predictor of interest while controlling for experienced stigma, no stigma (Stigma Scale), and their interactions with insight. Similar to their bivariate relationship, the regression analysis revealed that insight (β=.014) was not a significant predictor of psychological growth when all other predictors are at their average, $t(46)$=.081, *ns*. Hence, hypothesis one was not supported.

Hypothesis Two

The second hypothesis predicted that participants that experience greater stigma (experienced discrimination and fear of diagnostic disclosure) would perceive themselves to be lower in the growth stage of recovery. Within the same regression analysis, experienced stigma was examined as the predictor of interest while controlling for no stigma, insight and its interactions with both stigma factors. In contrast with its bivariate relationship which suggests that higher experienced stigma is associated with lower psychological growth, greater experienced stigma (β=-.071) did not predict lower psychological growth when controlling for other predictors at their average, $t(46)$=-.477, *ns*. This finding did not support hypothesis 2. However, consistent with bivariate relationships, the (reversed) no stigma factor (β=-.519) did predict a decrease in psychological growth when controlling for the other predictors, $t(46)$=-3.506, p=.001, *adj*. R^2=.211. Specifically, as participants (reversed) no stigma scores increase by 1-unit of

measure, their psychological growth decreases by .519 *sd* units when all other predictors were at their average. Hence, while hypothesis 2 was not supported via experienced stigma (i.e., the combination of experienced discrimination and fear of diagnostic disclosure), experienced stigma may still have detrimental effects on psychological growth when measured with a more general index of stigma (i.e., reversed-no stigma factor).

Hypothesis Three

Hypothesis three predicted that experienced stigma would moderate the relationship between insight and the growth stage of recovery. Specifically, the relationship between insight and growth (as presented in hypothesis 1) would remain true for individuals that experience lower stigma. The reverse would be true for participants that experienced lower stigma such that individuals that experience greater stigma would perceive report being lower in the growth stage of recovery. The *interaction* between insight and experienced stigma was the predictor of interest in the regression analysis controlling for insight, experienced stigma as individual predictors, as well as the no stigma factor and its interaction with insight. As mentioned above, hypothesis one suggesting that greater insight would predict higher psychological recovery was not supported. However, this interaction did approach significance (β=.280) as experienced stigma increased, $t(46)=1.999$, $p=.052$, *adj*. $R^2=.08$). To breakdown this trend, the relationships between insight and experienced stigma was calculated and examined at low

(-1 *sd*), medium (*m*), and high (+1 *sd*) levels of each variable (Jaccard & Turisi, 2003; Judd & Sadler, 2003). As hypothesized (albeit non-significant), the relationship between insight and growth remains true for individuals that experience lower stigma, $t(46)=-1.327$, *ns*. The relationship between insight and growth is also not affected for individuals that experience average levels of, $t(46)=.117$, *ns*. However, contrary to the hypothesis that higher insight would predict lower psychological growth when people experience greater stigma, higher insight actually predicts greater psychological growth when experienced stigma is higher when controlling for other predictors, $t(46)=2.656$, $p=.011$, *adj*. $R^2=.133$. While this interaction was not significant overall, it did produce a small-to-moderate effect size suggesting that it may have suffered from low statistical power. Unlike the insight x experienced stigma interaction, the interaction between insight and the no stigma factor did not approach statistical significance, $t(46)=1.525$, *ns*. The marginally significant interaction between insight and experienced stigma on psychological growth can be seen in figure 4.

Table 8. Multiple regression examining relationships between insight, experienced stigma, and the growth stage of psychological recovery.

Dependent Variable: Expanded Growth Scale (STORI)						
					95% Confidence Intervals	
Predictors	*B(SE)*	*β*	*t*	*p*	*Upper Bound*	*Lower Bound*
Full Model: Adj. R^2=.316, *p*<.001						
Constant	71.783 (2.481)		28.929**	>.001	66.788	76.778
Insight (SUMD)	.193 (2.379)	.014	.081	.936	-5.495	4.982
Experienced Stigma (Stigma Scale)	-1.572 (3.672)	-.071	-.477	.635	-9.144	5.639
No Stigma (Stigma Scale)	-11.070 (3.158)	-.519	-3.506**	.001	-17.427	-4.714
Insight x Experienced Stigma	6.991 (3.497)	.280	1.999+	.052	-.048	14.030
Insight x No Stigma	3.716 (2.437)	.253	1.525	.134	-8.620	1.189

Note. All predictors simultaneously entered into the model. + is significant at the .10 level (two-tailed),**p* is significant at the 0.05 level, ***p* is significant at the 0.01 level.

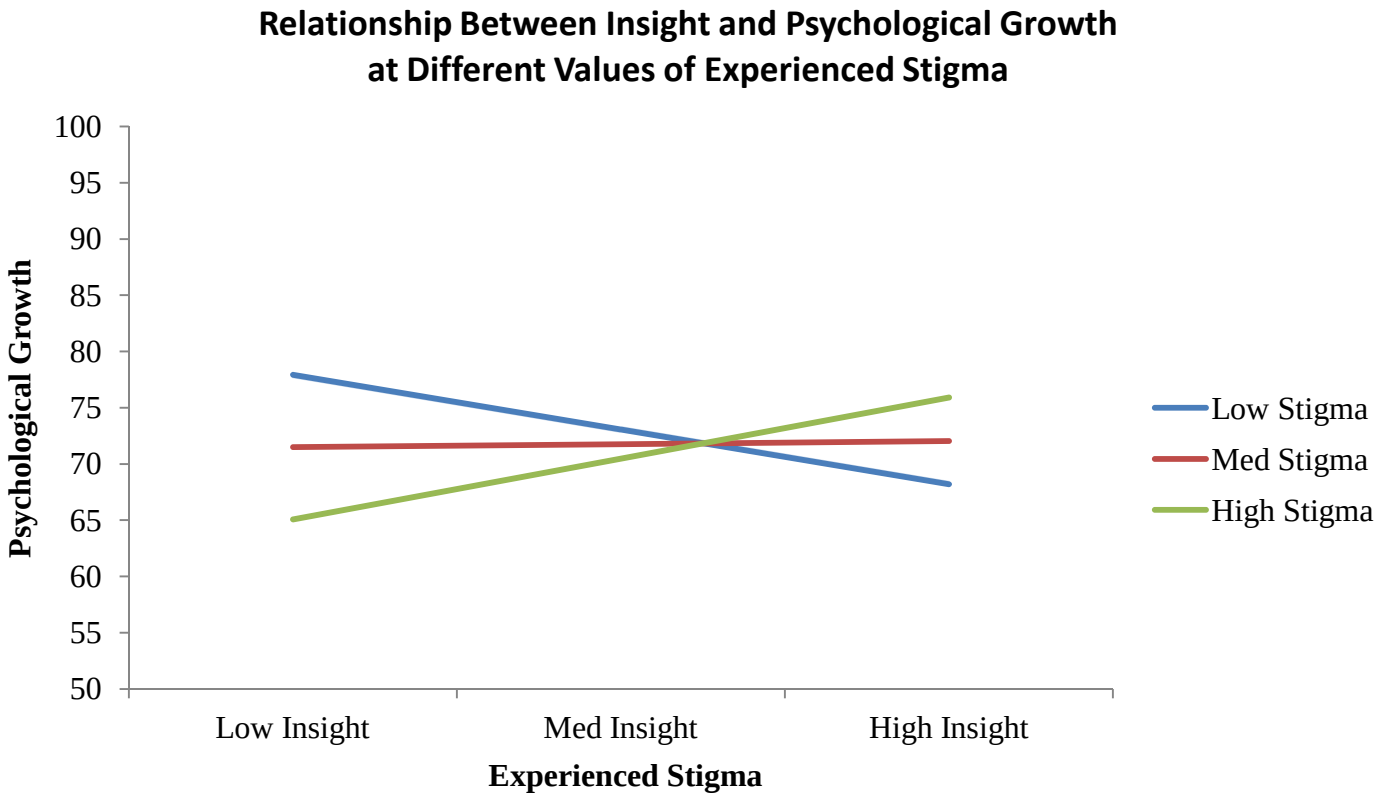

Figure 4. Hypothesized interaction between insight and experienced stigma on growth.

Note. This marginally significant interaction effect (p=.052) was calculated my multiplying predictors that were centered on their mean. Interaction effects were calculated at low (-1 *sd*), medium (*m*), and high (+1 *sd*) levels of insight and experienced stigma.

Exploratory Hypotheses

Exploratory hypotheses were examined under the assumption that psychological recovery can be measured via a rank-ordered stage structure (Andresen et al., 2003, 2006).

A single ordinal regression analysis was utilized to examine all three exploratory hypotheses. Participants' four STORI stage scores (including moratorium, awareness, preparation, and the expanded growth scale) were entered as the primary criterion variables. Insight, experienced stigma and no stigma as well as their interactions with insights were entered as predictors. Again, all predictors were centered for analysis.

Ordinal regression procedures follow the guidelines previously suggested by Argesti (2002) and Norusis (2008). First, results of a Parallel Lines Test (Armstrong & Sloan, 1989) indicated that proportional odds[14] (PO) assumption of ordinal regression analyses was not violated, $\chi^2(10)=6.531$, *ns*. Second, the hypothesized (omnibus) model containing all predictors demonstrated better model fit of the data than a fully unconditional (intercept only) model containing no individual predictors, $\chi^2(5)=14.561$, $p=.012$, *Nagelkerke Pseudo-*$R^2=.285$. Hence, the hypothesized model (with all predictors taken together) provided better predictions of changes in recovery than the fully unconditional model, explaining 28.5% of the variance in participant's movement (change) between recovery stages.

[14] Under the PO assumption, the hypothesized set of predictors will explain *equivocal* changes in odds ratios between each possible pair of recovery stages. Hence, only one set of predictors is necessary to explain the change in relationships between all possible pairs of recovery stages rather than a different set of predictors for each comparison. Violation of this assumption may lead to overestimated predictions between some stage comparisons with underestimation at other stages. Further, that multinomial regression (which does not assume rank-orders or PO) may be more appropriate for analysis (Hedeker, 2003; Powers & Yu, 2008).

Hypothesis Four

The fourth hypothesis stated that when overall insight is greater, participants will currently perceive themselves to be in higher stages of recovery. As mentioned above, four recovery scores (STORI; moratorium, awareness, preparation, expanded growth) were entered as the criterion with insight (SUMD) being examined as the predictor while controlling for experienced stigma, no stigma (Stigma Scale), and their interactions with insight. The ordinal regression analysis revealed that higher insight was not a significant predictor of higher stages of recovery, $\chi^2(1)=.635$, *ns*. Specifically, a 1-unit increase in insight is only associated with a non-significant .312 (to 1) decrease in log odds of being in a higher stage of recovery when all other predictors are at their average. Thus, hypothesis four was not supported.

Hypothesis Five

Hypothesis five stated that individuals that experience greater stigma will perceive themselves to be at a lower stage of psychological recovery overall than if they are experiencing lower stigma. Within the same ordinal regression analysis, experienced stigma was examined as the predictor of interest while controlling for no stigma, insight, and its interactions with both stigma factors. The analysis revealed that higher experienced stigma was not a significant predictor of lower stages of psychological recovery,

$\chi^2(1)=2.097$, *ns.* When experienced stigma increased by 1-unit of measure, only a .869 decrease in the odds of being in a lower stage of recovery was observed when other predictors were at their average. A similar pattern of results were observed for the no stigma factor, $\chi^2(1)=.625$, *ns.* These non-significant changes in the odds ratios did not support hypothesis five.

Hypothesis Six

Finally, hypothesis six stated that experienced stigma will moderate the relationship between insight and recovery such that the main effect predicted in hypothesis four would be qualified by an interaction between insight and experienced stigma. Specifically, the positive relationship between insight and participants' current stage of psychological recovery will remain true for individuals that experience lower stigma. Conversely, higher insight will be associated with lower stages of psychological recovery for people that experience greater stigma. The *interaction* between insight and experienced stigma was the predictor of interest in the ordinal regression analysis while controlling for insight, experienced stigma as individual predictors, as well as the no stigma factor and its interaction with insight. However, the analysis did not support this hypothesis, $\chi^2(1)=.911$, *ns.* As mentioned above, higher insight was not associated with a significant change in the odds of being in higher stages of recovery. Further, per each 1-unit increase in experienced stigma there was only an additional .577 decrease in the odds that insight was

associated with being in lower stages of recovery when all other predictors were at their average. Additionally, the no stigma x insight interaction was not significant, $\chi^2(1)=2.156$, *ns.* This pattern of results suggests that greater insight was not associated with lower stages of psychological recovery when experienced stigma was also high. A summary of the ordinal regression analysis is reported in table 9.

Table 9. Ordinal regression examining relationships between insight, experienced stigma, and the four observed stages of psychological recovery.

Predictors	*B(SE)*	χ^2	*p*	*95% Confidence Intervals* *Upper Bound*	*Lower Bound*
Full Model: Nagelkerke Pseudo-R^2=.285					
Moratorium	-3.281 (.666)	24.233**	<.001	-4.587	-1.974
Awareness	-2.527 (.551)	21.047**	<.001	-3.607	-1.448
Preparation	-1.399 (.428)	10.702*	.001	-2.238	-.561
Insight (SUMD)	-.312 (.392)	.635	.426	-1.079	.455
Experienced Stigma (Stigma Scale)	-.869 (.600)	2.097	.148	-2.046	.307
No Stigma (Stigma Scale)	-.401 (.507)	.625	.429	-1.395	.593
Insight x Experienced Stigma	-.577 (.605)	.911	.340	-1.762	.608
Insight x No Stigma	-.557 (.379)	2.156	.142	-1.301	.186

Note. Significant chi-squares for recovery stages indicate that stages are significantly different from the comparison stage (expanded growth). **p* is significant at the 0.01 level (two-tailed), ***p* is significant at the 0.001 level (two-tailed).

CHAPTER 5

DISCUSSION

The purpose of the current study was to investigate whether the paradoxical effects of insight on psychological recovery may be partially explained by the moderating effects of experienced stigma in an SMI population. Given the importance of insight and stigma in the recovery process, and current emphasis on increasing insight in a variety of evidence-based treatment paradigms (e.g., Tarrier, 2008), it is important to gain a better understanding of the paradoxical effects of insight within psychological recovery. Previous models examining the insight paradox have found that insight generally has positive effects on correlates of psychological recovery (e.g., QoL, hope, efficacy, etc.) when *internalized* stigma is low. However, when internalized stigma is higher insight has a negative impact on recovery. The current study differs from previous research by examining the psychological recovery process rather than correlates or proxy measures of recovery. Additionally, the current study examined the role of *experienced* rather than internalized stigma within the insight paradox.

Implications for Insight and Recovery

Hypotheses one and four stated that when insight is higher, participants would have higher scores in the growth stage of recovery and be in a higher stage of recovery overall,

respectively. Neither of these hypotheses was supported. These findings appear inconsistent with what is known about insight in a recovery context. Specifically, evidence suggests that insight has positive effects on psychosocial (e.g., QoL, self-efficacy) and negative effects on affective (e.g., depression, anxiety, SI) correlates of psychological recovery (Corrigan, Sokol, & Rüsch, 2013; Lincoln et al., 2007). Insight is also considered to be a *necessary* component in the recovery process (Frese et al., 2009; McEvoy, 2004; Staring et al., 2011). However, in the current sample, high levels of insight did not predict positive changes in self-reported recovery.

When considering the current evidence within the context of existing literature, perhaps insight in and of itself represents an important but ultimately insufficient construct for the recovery process. Perhaps insight becomes a more important predictor of recovery when moderated by additional factors (e.g., depression, hope, stigma, etc.; Corrigan et al., 2013). Another possibility may be that insight is more important at onset of the recovery process. Conversely, maybe when insight is high, it becomes less important to recovery. Future examinations of the clinical importance of insight in the recovery process may benefit from assessing these possibilities.

The current findings present important new evidence for interventions targeting insight in the recovery process. Placing emphasis on increasing insight remains a clinically significant topic. Specifically, interventions designed to improve insight may be subject to unpredictable costs and benefits at the individual-level. Thus, psychosocial correlates of increased insight may provide more fruitful targets for intervention than

insight itself or in combination with insight (Cavelti, Kvrgic, Beck, Rüsch, & Vauth, 2012). Evidence-based treatments for improving insight have even suggested that targeting insight on its own may result in limited gains at best (Amador & Schaich, 2007). However, getting people to engage in their own treatment and why it is important results in improved motivation and adherence which in turn results in improved insight (Amador & Schaich, 2007). This type of approach provides opportunities to set-up both a recovery foundation as well as identifying other recovery components that arise and may be fostered throughout the treatment and recovery processes. This is consistent with modern initiatives that clinical psychologists should receive training in rehabilitation and recovery treatment paradigms (Farkas & Anthony, 2006; Mueser, Silverstein, & Farkas, 2013). This also compliments arguments that insight should be developed as a "recovery competency" in inpatient settings before release to outpatient care (Chen, Krupa, Lysaght, & Piat, 2013). Preliminary research has already presented psychosocial (i.e., demoralization, meaning in life; Cavelti et al., 2012; Ehrlich-Ben Or et al., 2013) and cognitive deficiencies (i.e., metacognition; Lysaker et al., 2013) as potential targets for intervention in association with improving insight.

Implications for Experienced Stigma and Recovery

Hypotheses two, and four respectively, stated that when experienced stigma was higher participants scores would be lower in the growth stage of recovery and in lower

stages of recovery overall. While bivariate correlations indicated that experienced stigma is negatively associated with psychological growth, neither of these hypotheses were supported when controlling for the other predictors. Interestingly, the (reversed) no stigma factor was both negatively correlated with psychological recovery and predicted a decrease in psychological growth. This indicates that experienced stigma may predict lower self-reported recovery on a more general level than experienced discrimination and fear of diagnostic disclosure. However, it did not predict changes in people's stages of recovery. This pattern of results is mixed with what is known about both experienced and internalized forms of stigma.

Given the limited research on *experienced* stigma in SMI populations, implications may be generalized from the *internalized* stigma literature which suggests that increased stigma both directly and indirectly harms recovery (Cavelti et al., 2012; Corrigan, Larson, & Rüsch, 2009). A paucity of studies also suggests that experienced stigma (primarily discrimination) negatively affects correlates of recovery including psychological well-being (Norman et al., 2011) and subjective QoL (Gerlinger et al., 2013; Lundberg, Hansson, Wentz, & Bj□rkman, 2008). While these findings were supported by bivariate correlations, experienced stigma did not predict decreased psychological growth or changes between stages of recovery when controlling insight and its interactions with stigma[15]. However, a single study by Muñoz, Sanz, Santos, and Quiroga (2011) used

[15] Evidence that experienced stigma negatively impacts recovery was partially supported by the reversed no stigma factor (a more general index of experienced stigma). Specifically, both bivariate and predictive relationships suggest that no stigma scores are associated with a decrease in psychological growth, but not changes between recovery stages.

structural equation modeling (SEM) to specify a significant direct path from experienced discrimination to internalized stigma and a direct path from internalization to expectations of recovery. Interestingly, the path between experienced discrimination and recovery was not significant. This pattern of results is consistent current research suggesting that experienced stigma is not a direct predictor of recovery. Future research may benefit from examining whether experienced stigma is an important but insufficient barrier to the recovery process. Further, whether experienced stigma is part of a chain of events that result in internalized stigma which in-turn negatively affects the recovery process.

Measurement of experienced stigma in the empirical literature may play an important role in the inconsistency of these findings. Previous studies have primarily utilized the Internalized Stigma of Mental Illness Scale (ISMI; Boyd-Ritsher, Otilingam, & Grajales, 2003) and Self-Stigma of Mental Illness Scale (SSMIS; Corrigan et al., 2006) to measure experienced stigma. While the ISMI has a 'Perceived Discrimination' factor and the SSMIS includes items assessing consumer beliefs about public stigma of MI, both of these scales are designed to measure internalized stigma. Experienced stigma is roughly defined as stereotypes, prejudice, and discrimination experienced for being a member of a marginalized group (Goffman, 1963). Discrimination is behavioral actions towards such groups based on such stereotypes and prejudices (Biernat & Dovidio, 2000; Corrigan et al., 2009; Glick, Zion, & Nelson, 1988). Hence, one can anticipate or internalize the effects of discrimination, but not the behavioral act of discrimination itself. Munoz and colleagues (2011) provided the only other known study to have utilized an experienced rather than

internalized stigma scale to measure discrimination. Interestingly, this is also the only other study to have provided evidence consistent with the current finding that experienced stigma does not have a direct negative impact on psychological recovery. As discussed earlier, factors such as social, employment, housing, and treatment opportunities are important to the recovery process, and these factors have all been shown to be negatively affected by stigma. Perhaps the lost opportunities associated with experienced stigma mediate (or moderate) the relationship between experienced stigma and recovery. Future research should focus on examining both mediated and moderated relationships between experienced stigma, recovery, and lost opportunities due to experienced stigma.

As mentioned above, the no stigma factor was predictive of lower psychological recovery. An examination of this factor in comparison with items on the 'stigma resistance' (SR) factor of the ISMI may suggest convergent face validity between these scales. SR is a phenomena defined by fighting or rejecting the stigma associated with MI (Boyd-Ritsher et al., 2003; Thoits, 2011). This could also explain why higher scores on the reversed no stigma factor (greater stigma) predicted lower psychological recovery. Gaining a better understanding of whether the no stigma factor is measuring SR for the experienced stigma construct by examining convergent relationships between the Stigma Scale and the ISMI may provide useful information about the utility of the Stigma Scale. Future research examining SMI populations may consider measuring SR (for experience and internalization) as an indicator of recovery whenever stigma is an explanatory factor.

Implications for the Insight Paradox and Recovery

Hypotheses three and six stated that experienced stigma would moderate the relationship between insight and the growth stage of recovery as well as participants' current stage of recovery. Specifically, higher insight would predict increased psychological growth, and participants being in higher stages of recovery, when experienced stigma was lower. Conversely, high insight would predict decreased psychological growth and lower stages of recovery when stigma was higher. Interestingly, for hypothesis three we found a statistical trend suggesting the opposite pattern of effects such that greater insight predicted decreased psychological growth when experienced stigma was lower and increased growth when stigma was higher. While this interaction was not statistically significant (p=.052), the variance explained by the interaction term constituted a small-to-medium effect size. Hypothesis six was not supported. This paradoxical pattern is reverse from what we know about the moderating effects of internalized stigma on the insight and recovery relationship. While there is no causal indication of why this pattern of effects occurred, a small but informative body of research examining these relationships may provide some indication.

Experienced and internalized stigmas are considered related but unique constructs, with experience as a precursor to internalization (Crocker & Major, 1989; Corrigan et al., 2009). Lv, Wong, and Wolf (2012) found that experienced stigma was correlated with components of internalized stigma including stereotype endorsement (another necessary

component for internalization). Chronister, Chou, and Liao (2013) demonstrated that higher diagnostic secrecy and social withdrawal (i.e., illness coping), as well as lower social and emotional support, mediate the relationship between experienced and internalized stigma. Higher experienced stigma was associated with higher secrecy and social withdrawal which in turn led to greater internalized stigma. Higher experienced stigma was also associated with lower social and emotional support which in turn led to greater internalized stigma as well as a worse recovery process. Pruß, Wiedl, and Waldorf (2012) found that experienced stigma (albeit measured by the SSMIS) may be a motivating factor for people to not acknowledge their own illness and its associated consequences. Finally, increased proneness to shame also mediates the relationship between insight and internalized stigma (Hasson-Ohayon et al., 2012). This finding is consistent with public stigma research suggesting that people without MI believe that MI is shameful and associate thoughts of themselves having MI with shame (Rüsch, Todd, Bodenhausen, Olschewski, & Corrigan, 2010; Rüsch et al., 2011). Relationships between experienced and internalized stigma are consistent with social reaction theory (Becker, 1963) suggesting that awareness of negative stereotypes, attributions, and treatment of people with MI may have a negative impact post-MI onset.

Despite lack of established directionality in the insight/stigma relationship (Pruß et al., 2012), insight has been suggested to be a necessary precursor for internalized stigma (Corrigan et al., 2006; Link & Phelan, 2001). Evidence from the empirical literature accompanied with the current research suggests that insight and experienced stigma may

be part of more complex structural relationships that affect the recovery process. Perhaps the combination of both high insight and experienced stigma may not be as detrimental to recovery when stigma is not internalized. Additionally, that high insight and experienced stigma may go down a positive pathway when potential mediators (e.g., lower social and emotional support; higher, shame, illness secrecy, and avoidance) are not present, but a negative pathway when they are. Future research examining direct and indirect pathways between how experienced stigma and insight may affect recovery is paramount.

Limitations

One of the primary limitations to this study was lack of statistical power due to a small sample size. Findings may be subject to increased type II error rate for detecting small-to-medium effects (e.g., suppression of the Insight x Stigma interaction effect). The smaller sample size also does not allow for testing of additional correlates of recovery (e.g., social support, avoidance) as predictors, moderators, or covariates in the same model. Attempted replications of these findings could benefit from larger sample sizes that allow for additional factors to be modeled.

Cross-sectional correlational methodology does not allow for generalized causal inferences. Cross-sectional methodologies also operate under the assumption that changes in the IV's that affect the DV have already occurred. This assumption is difficult to establish without experimental manipulation. Evidence suggests that psychological

recovery, insight, and stigma are not a static phenomenon, but in a variable state of flux. Thus, changes in insight and stigma across time may affect recovery in ways that may not be captured as accurately with cross-sectional designs. Future examinations of relationships among insight, stigma, and recovery may be better studied with longitudinal methodologies.

The current sample was drawn from a structured outpatient behavioral health center devoted to promoting the principles of psychological recovery. Given that this sample had relatively high insight and were in higher stages in psychological recovery, the present sample may not be representative of other SMI samples that may be involved in less comprehensive treatment environments, not stabilized on medications, have smaller social circles, or not in treatment. Lack of support for the effects of insight on psychological recovery may have also been masked by limited variability in insight within the sample. This problem may have been exacerbated by a potential restriction of range in the SUMD measurement scales. This presents a potential threat to the generalizability of our findings.

Future Directions

Findings from the current study dovetail with national and international initiatives to improve recovery and overall QoL among persons with SMI. These include focusing America's mental health system towards recovery-oriented provisions and promoting anti-stigma campaigns that improve public understanding and treatment of persons with MI

(Andresen et al., 2011; Davidson, et al., 2007). Previous research has established that changes in both stigma and recovery can occur in a matter of months (Rüsch et al., 2010; Sibitz, Provaznikova, Lipp, Lakeman, & Amering, 2013). Evidence also suggests that interventions promoting social inclusion may reduce stigma and improve recovery in similar time frames (Lucksted et al., 2011; Yanos et al., 2012). Hence, current findings compliment several emerging bodies of research designed to meet such initiatives.

Studies have begun to focus on the effects of social relationships, inclusion, and sense of community on reducing stigma and improving recovery among persons with SMI. People with SMI describe community as receiving help for and minimizing consequences of illness, avoiding stigma, and providing opportunities for involvement (Bromley et al., 2013). Perhaps more importantly, these participants reported experiencing community in integrated mental health programs that allow opportunities for positive engagement and support with their peers. The support provided by these comprehensive "clubhouse" outpatient programs may improve sense of mattering, which predicts improvements in recovery and health-related QoL, and reduced perceived and internalized stigma (Conrad-Garrisi & Pernice-Duca, 2013; Sibitz et al., 2013). Finally, Segal and colleagues (2010) found that the benefits of clubhouse programs were more beneficial when consumers are given more power and responsibility in program decision-making.

Similar to sense of community, social support is considered to be important to the recovery process and negatively associated with experienced and internalized stigma (Chronister et al., 2013; Sibitz et al., 2006). Higher internalized stigma in SMI populations

has also been linked to greater relationship anxiety, maladaptive relationship monitoring, as well as lower relationship esteem, assertiveness, and satisfaction (Sarisoy et al., 2013; Segalovich, Doron, Behrbalk, Kurs, & Romem, 2013). Path analyses have demonstrated that persons with SMI have poor social networks which lead to greater internalized stigma, leading to increased depression severity, and finally lower subjective QoL (Sibitz et al., 2011). Lundberg et al (2008) found that the negative relationship between discrimination and QoL may be better explained by increased social rejection.

Finally, recent research has shown that people with SMI may develop higher stigma resistance when self-esteem, empowerment, QoL, and their social support networks are also high. For such individuals SR is also associated with lower internalized stigma and depression, and is considered important to the recovery process (Sibitz et al., 2011). These findings are consistent with research suggesting that people need to agree with the stigma they experience in order to internalize it (Corrigan & Calabrese, 2005; Mak & Wu, 2006; Williams, 2008). SR may also help explain why stigma can have positive effects on persons with SMI including advocating for recovery, equality, and giving individual's a greater sense of purpose in life (Corrigan & Watson, 2002; King et al, 2007).

Given these patterns of relationships between sense of community, social support, SR and how they may be achieved by clubhouse rehabilitation and recovery programs, the potential importance of these programs for reducing stigma and augmenting the recovery process cannot be understated. Particularly clubhouse programs are becoming increasingly common, if not the dominant form of implementing recovery-oriented services (Miller,

Brown, Pilon, Scheffler, & Davis, 2010). However, there remains a lack of research examining the effectiveness of such programs (Corrigan, Kosyluk, & Rüsch, 2013). This leaves opportunities for future research on recovery and SR in SMI populations, including consumer-based services promoting psychological recovery principles.

Appendix A

The Stages of Recovery Instrument

STORI

The following questionnaire asks about how you feel about your life and yourself since the illness. Some of the questions are about times when you don't feel so good. Others ask about times when you feel quite good about life. If you find some of the questions upsetting, and you need to talk to someone – please take a break and talk to a friend or support person.

The questions are in groups of five.
Read all five questions in a group, and then answer those five questions.
Circle the number from 0 to 5 to show how much each statement is true of you now.
Then move on to the next group.

When you choose your answer, think about **how you feel now**, not how you have felt some time in the past. For example:

Q.38 says "I am beginning to learn about mental illness and how I can help myself."
Q.39 says "I now feel fairly confident about managing the illness."

If you are now fairly confident about managing the illness, you would give a higher score to Q.39 than you would to Q.38, which says you are just *beginning* to learn.

The questions are about how you feel about your life *on the whole* these days. Try not to let things that might be affecting your mood just at the moment affect your answers.

Stage 1: _____

Stage 2: _____

Stage 3: _____

Stage 4: _____

Stage 5: _____

Recovery Stage(s): _____

Read all five questions in group 1, then answer those five questions.
Circle the number from 0 to 5 to show how much each statement is true of you *now*.
Then move on to group 2, and so on.

When you choose your answer, think about ***how you feel now***, not how you have felt in the past.

	Group 1	*Not at all true now*					*Completely true now*
1	I don't think people with a mental illness can get better.	0	1	2	3	4	5
2	I've ***only recently*** found out that people with a mental illness can get better.	0	1	2	3	4	5
3	I am ***starting*** to learn how I can help myself get better	0	1	2	3	4	5
4	I am working hard at staying well, and it will be worth it in the long run.	0	1	2	3	4	5
5	I have a sense of "inner peace" about life with the illness now.	0	1	2	3	4	5

	Group 2	*Not at all true now*					*Completely true now*
6	I feel my life has been ruined by this illness.	0	1	2	3	4	5
7	I'm ***just starting*** to realize my life doesn't have to be awful forever.	0	1	2	3	4	5
8	I have ***recently*** started to learn from people who are living well in spite of serious illness.	0	1	2	3	4	5
9	I'm starting to feel ***fairly*** confident about getting my life back on track.	0	1	2	3	4	5
10	My life is really good now and the future looks bright.	0	1	2	3	4	5

	Group 3	*Not at all true now*					*Completely true now*
11	I feel my like I'm nothing but a sick person now.	0	1	2	3	4	5
12	Because others believe in me, I've ***just started*** to think maybe I can get better.	0	1	2	3	4	5
13	I am ***just beginning*** to realize that illness doesn't change who I am as a person.	0	1	2	3	4	5
14	I am ***now beginning*** to accept the illness as part of the *whole person* that is me.	0	1	2	3	4	5
15	I am happy with who I am as a person.	0	1	2	3	4	5

Group 4	*Not at all true now*					*Completely true now*
16 I feel as though I don't know who I am anymore.	0	1	2	3	4	5
17 I've have ***recently begun*** to recognize a part of me that is not affected by the illness.	0	1	2	3	4	5
18 I am ***just starting*** to realize that I *can* still be a valuable person.	0	1	2	3	4	5
19 I am learning new things about myself as I work towards recovery.	0	1	2	3	4	5
20 I think that working to overcome the illness has made me a better person.	0	1	2	3	4	5

Group 5	*Not at all true now*					*Completely true now*
21 I'll never be the person I thought I would be.	0	1	2	3	4	5
22 I've ***just begun*** to accept the illness as part of my life I'll have to learn to live with.	0	1	2	3	4	5
23 I am ***starting*** to figure out what I am good at and what my weaknesses are.	0	1	2	3	4	5
24 I am starting to feel that I am making a valuable contribution to life.	0	1	2	3	4	5
25 I am accomplishing worthwhile and satisfying thing in my life.	0	1	2	3	4	5

Group 6	*Not at all true now*					*Completely true now*
26 I am angry that this had to happen to *me*.	0	1	2	3	4	5
27 I'm ***just starting*** to wonder if some good could come out of this.	0	1	2	3	4	5
28 I am ***starting*** to think about what my special qualities are.	0	1	2	3	4	5
29 In having to deal with illness, I am learning a lot about life.	0	1	2	3	4	5
30 In overcoming the illness I have gained new values in life.	0	1	2	3	4	5

Group 7	*Not at all true now*					*Completely true now*
31 My life seems completely pointless now.	0	1	2	3	4	5
32 I am ***just starting*** to think maybe I *can* do something with my life.	0	1	2	3	4	5
33 I am ***trying*** to think of ways I might be able to contribute in life.	0	1	2	3	4	5
34 These days I am working on some things in life that are personally important to me.	0	1	2	3	4	5
35 I am working on important projects that give me a sense of purpose in life.	0	1	2	3	4	5

Group 8	*Not at all true now*					*Completely true now*
36 I can't do anything about my situation.	0	1	2	3	4	5
37 I'm ***starting*** to think I could do something to help myself.	0	1	2	3	4	5
38 I am ***starting*** to feel more confident about learning to live with illness.	0	1	2	3	4	5
39 Sometimes there are setbacks, but I come back and keep trying.	0	1	2	3	4	5
40 I look forward to facing new challenges in life.	0	1	2	3	4	5

Group 9	*Not at all true now*					*Completely true now*
41 Others know better than I do what's good for me.	0	1	2	3	4	5
42 I want to ***start*** to learning how to look after myself properly.	0	1	2	3	4	5
43 I am ***beginning*** to learn about mental illness and how I can help myself.	0	1	2	3	4	5
44 I now feel ***reasonably*** confident about managing the illness.	0	1	2	3	4	5
45 I can manage the illness well now.	0	1	2	3	4	5

	Group 10	*Not at all true now*					*Completely true now*
46	I don't seem to have to have any control over my life now.	0	1	2	3	4	5
47	I want to ***start*** learning how to cope with the illness.	0	1	2	3	4	5
48	I am ***just starting*** to work towards getting my life back on track.	0	1	2	3	4	5
49	I am ***beginning*** to feel responsible for my own life.	0	1	2	3	4	5
50	I am in control of my own life.	0	1	2	3	4	5

For correspondence regarding this measure, please contact Retta Andresen, Illawarra Institute for Mental Health, School of Psychology, University of Wollongong, NSW, Australia, 2522. Email: retta@uow.edu.au
Reference: Andresen R, Caputi P and Oades L (2006). The Stages of Recovery Instrument: Development of a measure of recovery from serious mental illness. *Australian and New Zealand Journal of Psychiatry* 2006; 40:972-980

Appendix B

THE UNAWARENESS SCALE: (SUMD)

ID: _____ DATE: _____ EXAMINER: _____

Please rate the highest level of awareness during the current exacerbation by indicating whether the situation is unknown, not applicable, subject is aware, somewhat aware or severely unaware in the following statements.

	Unknown	**Not Applicable**	**Aware**	**Somewhat Aware/ Unaware**	**Severely Unaware**
1.) **Awareness of mental disorder:** In the most general terms, does the subject believe he or she has a mental disorder?	Unk	0	1	2	3
2.) **Awareness of the consequences of mental disorder:** What is the subject's belief regarding the reason(s) he or she has been unemployed, evicted or hospitalized, etc.?	Unk	0	1	2	3
3.) **Awareness of the effects of medication:** Does the subject believe that medications have diminished the severity of his or her symptoms (if applicable)?	unk	0	1	2	3
4.) **Awareness of hallucinatory experiences:** Does the subject believe that he or she experiences hallucinations as such? Rate his or her ability to interpret this experience as primarily hallucinatory. **BPRSE 9: _____**	unk	0	1	2	3
5.) **Awareness of delusion:** Does the subject believe that he or she experiences delusions as such, that is, as internally produced erroneous beliefs? Rate his or her awareness of the implausibility of the belief if applicable. **BPRSE 7: _____**	unk	0	1	2	3

6.) **Awareness of thought disorder:** Does the subject believe that his or her communications are disorganized? **BPRSE 11: _____**	unk	0	1	2	3
7.) **Awareness of flat or blunt affect:** Rate the subject's awareness of his or her affect as communicated by his or her expressions, voice, gestures, etc. Do not rate his or her evaluation of his or her mood. **BPRSE 14: _____**	unk	0	1	2	3
8.) **Awareness of anhedonia:** Is the subject aware that his or her behavior reflects an apparent decrease in experiencing pleasure while participating in activities normally associated with such feelings?	unk	0	1	2	3
9.) **Awareness of asociality:** Is the subject aware that he or she shows no interest in social relationships?	unk	0	1	2	3

Total Score: _____

Notes:

Appendix C

THE STIGMA SCALE

Now I am going to ask you some questions about experiences you may have had since being diagnosed with schizophrenia. These may have been personal interactions, experiences, or feelings that you may have had. Please answer these questions to the best of your ability. The information you provide in this survey is completely anonymous.

	Strongly Disagree	**Disagree**	**Neither Agree nor Disagree**	**Agree**	**Strongly Agree**
1.) I have been discriminated against in education because of my mental health problems.	0	1	2	3	4
2.) Sometimes I feel like I am being talked down to because of my mental health problems.	0	1	2	3	4
3.) Having had mental health problems has made me a more understanding person.	0	1	2	3	4
4.) I do not feel bad about having had mental health problems.	0	1	2	3	4
5.) I worry about telling people I receive psychological treatment.	0	1	2	3	4
6.) Some people with mental health problems are dangerous.	0	1	2	3	4
7.) People have been understanding of my mental health problems.	0	1	2	3	4
8.) I have been discriminated against by police because of my my mental health problems.	0	1	2	3	4
9.) I have been discriminated against by employers because of my mental health problems.	0	1	2	3	4
10.) My mental health problems have made me more accepting of other people.	0	1	2	3	4
11.) Very often I feel alone because of my mental health problems.	0	1	2	3	4

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
12.) I am scared of how other people will react if they find out about my mental health problems.	0	1	2	3	4
13.) I would have had better chances in life if I had not had mental health problems.	0	1	2	3	4
14.) I do not mind people in my neighborhood knowing I have had mental health problems.	0	1	2	3	4
15.) I would say I have had mental health problems if I was applying for a job.	0	1	2	3	4
16.) I worry about telling people that I take medicines/tablets for my mental health problems.	0	1	2	3	4
17.) People's reactions to my mental health problems make me keep myself to myself.	0	1	2	3	4
18.) I am angry with the way people have reacted to my mental health problems.	0	1	2	3	4
19.) I have not had any trouble from people because of my mental health problems.	0	1	2	3	4
20.) I have been discriminated against by mental health professionals because of my mental health problems.	0	1	2	3	4
21.) People have avoided me because of my mental health problems.	0	1	2	3	4
22.) People have insulted me because of my mental health problems.	0	1	2	3	4
23.) Having had mental health problems has made me a stronger person.	0	1	2	3	4
24.) I do not feel embarrassed because of my mental health problems.	0	1	2	3	4
25.) I avoid telling people about my mental health problems.	0	1	2	3	4
26.) Having had mental health problems makes me feel that life is unfair.	0	1	2	3	4

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
27.) I feel the need to hide my mental health problems from my friends.	0	1	2	3	4
28.) I find it hard telling people I have mental health problems.	0	1	2	3	4

Discrimination Score: _____

Disclosure Score: _____

No Stigma Score: _____

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VITA

Christopher Anthony Fowler was born on March 19, 1984 in La Mesa, California. He was educated in the public school system in El Cajon, California, and he graduated from Valhalla High School in 2002. Chris began attending San Diego State University (SDSU) in the Fall of 2006. He was on the Dean's list from Fall 2007-Spring 2009. Chris was the recipient of the Minority Biomedical Research Support-Initiative for Maximizing Student Development fellowship from the National Institute of General Medical Sciences from 2007-2010. He presented research at several regional, national and international academic research conferences and received the Outstanding Oral Presentation for Social and Behavioral Sciences from at the Annual Biomedical Research Conference for Minority Students in 2008. During this time, Chris founded and served as director of the SDSU Research Assistant Application Program which helped more than 160 students gain research assistantships with faculty mentors. In 2010 Chris graduated earned a Bachelor of Arts degree from SDSU graduating with distinction with a major in Psychology.

In 2010, Chris was accepted to the Clinical Health Psychology program at the University of Missouri- Kansas City (UMKC), beginning the program in August, 2010. At UMKC, Chris has been involved in research labs investigating stigma, recovery, functional outcomes, neurocognition, and obesity among persons with serious mental illness. Several of the projects he has developed and assisted in have been presented at national and international research conferences. He is a two-time recipient of the Minority Doctoral Fellowship from the UMKC School of Graduate Studies to fund his research efforts and

travel to present at numerous research conferences. In 2011, he received the outstanding student research award from the Schizophrenia and Other Serious Mental Disorders Special Interest Group of the Association for Behavioral and Cognitive Therapies. In 2013 he began serving as a statistician and measurement specialist on an educational grant examining relationship violence intervention among adolescent females from the State Farm Youth Advisory Board. Chris is a member of the Association for Behavioral and Cognitive Therapy, the Association of Psychological Science, the American Psychological Association, and the Society for the Teaching of Psychology among other national and international research organizations.