

USING THE WORLD HEALTH ORGANIZATION INTERNATIONAL CLASSIFICATION  
OF FUNCTIONING, DISABILITY AND HEALTH (ICF) MODEL IN PREDICTION OF  
SENSE OF COMMUNITY FOR PERSONS WITH PSYCHIATRIC DISABILITIES

By

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## **ABSTRACT**

### **USING THE WORLD HEALTH ORGANIZATION INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY AND HEALTH (ICF) MODEL IN PREDICTION OF SENSE OF COMMUNITY FOR PERSONS WITH PSYCHIATRIC DISABILITIES**

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Promoting sense of community (SOC) is beneficial in facilitating persons with psychiatric disabilities to achieve community integration and recovery. However, SOC is still largely understudied in the field of rehabilitation counseling. It is shown that SOC is a multidimensional construct involving interactive process, which is the product of the person, the environment, and the interactions among them. Therefore, a holistic and interactive model is necessary in order to understand the biopsychosocial predictors of SOC from a comprehensive perspective. This study used the World Health Organization's International Classification Functioning Disability and Health (ICF) model as a conceptual framework to examine the complex relationships among health conditions and functioning, activity, personal and environmental factors, in affecting SOC outcomes. By applying the ICF model, the purpose of this study was to evaluate the proposed model of SOC for persons with psychiatric disabilities. Hierarchical regression analysis was used to understand the overall model of SOC, as well as the unique contribution of each ICF construct and its interaction effects among the ICF constructs. Results of the study suggest that demographic variables (i.e., diagnosis, treatment related support, and SSA beneficiary status), functioning variables (i.e., symptom severity and cognitive functioning), activity variable (i.e., social functioning), personal variables (i.e., resilience and self-efficacy), and environmental variables (stigma and social support) account for over 57% of the variance in SOC in this study. This study provides a comprehensive understanding of SOC

and contributes new information by presenting the theoretical guidance and research evidence of proposing and evaluating the effectiveness of the ICF-based model of SOC for psychiatric populations. Future research direction is guided to expand the current model of SOC by exploring more influential disability-related as well as psychosocial factors of SOC. This study also inform rehabilitation professionals on how to provide effective and efficient rehabilitation services for promoting the community experiences of persons with psychiatric disabilities, such as treatment adherence, anxiety management, self-efficacy promotion, stigma reduction, and social support provision.

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This dissertation is dedicated in memory of my beloved grandfather, Dongfang Xu, who opened up the world of knowledge to me.

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## **CHAPTER ONE**

### **INTRODUCTION**

This chapter provided a description of the research problem, an overview of the World Health Organization (WHO) International Classification of Functioning, Disability, and Health (ICF) as the theoretical framework, and a discussion of the study purpose and significance.

One in seventeen, or approximately 13.6 million Americans, in a given year experiences a serious mental illness (NAMI, 2013) that is severe enough to cause psychiatric disability by its interfering with most areas of the functioning in this person's daily activities, such as performing roles in working, living, and learning (MacDonald-Wilson & Nemec, 2005). Persons with psychiatric disabilities face more risks of having chronic medical conditions and higher suicide rates, which is the tenth leading cause of death in the US; and living a shorter life expectancy (about 25 years less) than other persons without psychiatric disabilities. Each year, \$193.2 billion is paid for psychiatric disabilities in the US (NAMI, 2013). Based on the high prevalence and the negative impact of psychiatric disabilities, effective services are critically needed to improve the affected life experiences of psychiatric populations.

A national survey conducted in 2002 indicated that since the movement to deinstitutionalization, approximate 2.5 million individuals with mental illness have been discharged from inpatient institutions to community-based care (DeFrances & Hall, 2002). Regarding the large number of persons with psychiatric disabilities seeking community experience, one of the goals that serves the missions and outcomes of psychiatric rehabilitation services is to support those persons to be integrated into the activities and real world experiences of all facets of community life (Corrigan, 2003; Heinemann, 2010). Many studies have been conducted to understand the community integration of people with psychiatric disabilities during

the past several decades (e.g., Wong & Solomon, 2002). Wong and Solomon (2002) conceptualize community integration into multidimensional aspects: (1) *physical community integration*, which refers to a person's involvement in activities outside of his/her home; (2) *social community integration*, which relates to the person's social network and interactions with individuals in the community settings; and (3) *psychological community integration*, which captures the individual's experience of being part of the community he/she identifies with. Since this landmark conceptualization of community integration, many studies have been focusing on physical community integration, such as employment (e.g., Blitz, & Mechanic, 2006; Cook, 2006; Henry, & Lucca, 2004; Shankar, 2008); and increasing attention has been paid to social community integration (e.g., Goldberg, Rollins, & Lehman, 2003; Ware, Hopper, Tugenberg, Dickey, & Fisher, 2007, 2008). However, in the field of rehabilitation, even though many researchers consider psychological community integration as a core component of community integration for people with psychiatric disabilities and should be further understood (e.g., Aubry & Myner, 1996; Kennedy, 1989; Prince & Gerber, 2005; Townley & Kloos, 2009; Wong & Solomon, 2002), still there is very limited research systematically focuses on psychological community integration—also refers to as *sense of community* (SOC). Concerning the increasing recognition of the importance of studying individuals' real life experiences through the rehabilitative process (Dunn & Elliott, 2008), more in-depth exploration of the SOC for persons with psychiatric disabilities is indeed necessary.

### **Statement of the Problem**

Sense of community (SOC) is one of the most important constructs in psychology; it has been receiving a lot of attention, particularly in the field of community psychology (Townley & Kloos, 2009). In 1974, Sarason provided the first theoretical basis for SOC, which emphasized

the significance of studying the psychological aspects of community by investigating individuals' subjective experiences as part of being in a community setting, and by understanding the strength of attachment and bonding that individuals can build with their community members (Chavis & Pretty, 1999; Townley & Kloos, 2011). Recognized as an “overarching value” (Sarason, 1986), SOC has been linked to perceptions of connectedness and belonging (Townley & Kloos, 2011), psychological well-being (Pretty, Andrews, & Collett, 1996; Prezza, Arrici, Roberti, & Tedeschi, 2001), and better participation and involvement in the community (Chavis & Wandersman, 1990; Hughey, Speer, & Peterson, 1999). The lack of SOC can lead to negative influences on individuals' experiences in their contemporary life, such as having feelings of isolation and loneliness (Pretty et al., 1996), and can also cause other psychological distresses (Sarason, 1974).

For persons with psychiatric disabilities, existing literatures have proposed the need of better understanding this construct (e.g., Aubry & Myner, 1996; Cummins & Lau, 2003; Wong & Solomon, 2002). For example, promoting SOC is especially beneficial for psychiatric populations concerning long-term societal stigma, discrimination, misconceptions, and attitudinal barriers that they experience (Chan, McMahon, Cheing, Rosenthal, & Bezyak, 2005; Cook & Jonikas, 2002; Corrigan, 2003; Cummins & Lau, 2003; Prince & Prince, 2002). By promoting SOC, persons with psychiatric disabilities can have a reduced feeling of stigmatization and marginalization and an increased sense of safety, agency, and belongingness; as well as becoming active participants in real world experiences and activities (Nelson & Peddle, 2005; Townley & Kloos, 2009). In addition, previous studies (e.g., Aubry & Myner, 1996; Cummins, & Lau, 2003; Wong & Solomon, 2002, Yanon, Felton, Tsemberis, & Frye, 2007) have suggested that improving one's SOC is helpful in facilitating other aspects of community integration (i.e., physical and social community integration). In other words, a higher SOC is



associated with better involvement in community activities, engagement in social interactions with other community members, and overall more competent functioning in participation (Townley & Kloos, 2009).

In addition to the benefits of studying SOC discussed above, previous literatures have noted the significant relationship between SOC and subjective well-being of individuals with serious mental illness (Prince & Gerber, 2005; Prince & Prince, 2002) and life satisfaction in general populations (Prezza et al., 2001), which are the subjective aspects of quality of life. Over the years, promoting both objective and subjective aspects of the quality of life has been recognized as the fundamental goal of rehabilitation (Crewe, 1980), and as an important criterion for determining rehabilitation interventions and outcomes (Wright, 1980). However, there are still very limited studies conducted to explore how SOC could be related to life satisfaction, particularly for individuals with psychiatric disabilities. Regarding this, a better understanding of the relationship between SOC and life satisfaction is crucial.

Concerning the significance of SOC among persons with psychiatric disabilities, uncovering ways of facilitating it has become very important. While the current literature supports the benefits of SOC, few studies have systematically explored how to improve this construct in the field of rehabilitation counseling. Thus, a thorough understanding of the significant predictors of SOC for psychiatric populations is critical.

### **Sense of Community as a Multidimensional and Interactive Construct**

McMillian and Chavis (1986)'s conceptualization of SOC has gained the most credits in the existing literature. Based on their theoretical definition, SOC consists of four elements: (1) membership, which refers to a sense of belonging in the community; (2) influence, which means the community and the individual can influence each other; (3) integration and fulfillment of

needs, which refers to being a member of groups in which their needs are met; and (4) shared emotional connections, which means shared experiences and emotions with others in the community (McMillan & Chavis, 1986; Sarason, 1974). Based on this conceptualization, SOC has been considered as a multidimensional and interactive construct, which is the process that involves the person, the environment and the interactions between them (Chavis & Pretty, 1999; Chavis & Wandersman, 1990; & Hughey et al., 1999).

Importantly, the multidimensional nature of SOC can be highly applicable in supporting people with other disabilities, due to the long standing emphasis on person-environment interactions (P x E) in the field of rehabilitation counseling (Chan, Tarvydas, Blalock, Strauser, & Atkins, 2009; Wright, 1983). In this case, looking at the personal and environmental factors of SOC and their interaction effects can identify new knowledge about the essential characteristics that persons with psychiatric disabilities need to acquire and further develop, and the effective support that persons' environments need to provide, in order for those individuals to have good quality community experience.

When reviewing the existing literature in the mental health field, SOC has been proposed as related to disability-related factors (e.g., symptoms severity; Corrigan, 2003); personal factors (e.g., self-esteem; Prince & Gerber, 2005); and environmental factors (e.g., stigma; Prince & Prince, 2002), among people with psychiatric disabilities. Among those studies, very few have targeted multidimensional aspects or used a holistic model to understand this construct. For best understanding the community life of persons with psychiatric disabilities, a comprehensive conceptualization and empirically based study of the dynamics among potential factors of sense of community from diverse aspects is crucial.

### **Diverse Impact of Psychiatric Disabilities**

Psychiatric disabilities have been considered as persistent and severe illnesses, which can often lead to negative influences on many aspects of an individual's daily life, such as decreases in cognitive functioning (Richter, 1999), limitations in interpersonal, problem solving and coping skills (Ackerman & McReynolds, 2005), and encountering negative and stigmatized attitudes (Bromley et al., 2013). One of the core aims of psychiatric rehabilitation is to provide adequate support for persons with psychiatric disabilities to develop adequate skills and facilitate participation in their chosen environment (MacDonald-Wilson & Nemec, 2005). However, simply reducing symptoms without taking into account the personal experiences and environmental influences has been mentioned as insufficient (Sperry, 2008). Accordingly, the biopsychosocial model has been applied to replace the medical model in understanding the experiences of persons with disabilities by focusing on the multidimensional (i.e., biomedical, psychological, and social) factors that can have impact on a person with psychiatric disabilities, as well as the interactions between the person and the environment (Sperry, 2008; Wright, 1983).

For the impact of disability-related factors, there are heterogeneous influences on different persons. Severe symptoms may not be necessarily correlated with a lower level of SOC, as a result, it is important for us to find out why for some persons with psychiatric disabilities, even though their symptoms are more severe, their level of SOC has not been impacted as negatively when compared with those with less severe symptoms. In addition, there are still inconsistent research findings about whether or not disability-related factors such as symptoms, functioning, and diagnoses are significant factors to SOC (e.g., Aubry, Tefft, & Currie, 1995; Gulcur, Tsemberis, Stefancic, & Greenwood, 2007; Long & Perkins, 2003; Prince & Gerber, 2005). In this sense, it is still unclear to what extent, those disability-related factors could impact SOC.

The impact of psychosocial factors of SOC can also be complex due to the diverse psychosocial problems that persons with psychiatric disabilities face. While some psychosocial factors of SOC, such as coping, social support, stigma, and self-esteem have been explored, there is still a lack of understanding of the interaction effects among those disability-related factors and psychosocial factors. More than that, what further complicate the diverse psychosocial factors of SOC are the wide varieties of community settings that persons can get experience from. According to Brodsky and Marx (2001), a community can be understood from both geographical and relational aspects. To be specific, the actual experiences of persons with psychiatric disabilities can be obtained in their neighborhood or any towns and cities they live in as well as in education settings, workplace and church and many other communities they identify with. As a result, it becomes even more beneficial to understand psychosocial factors of SOC in order to promote their community experiences.

In summary, promoting SOC is extremely beneficial, when considering the broad coverage of those life activities that may be negatively impacted by having psychiatric disabilities. Concerning the multidimensional nature of SOC and the diverse, complex influence that psychiatric disabilities may have on SOC, a holistic conceptual framework is necessary for exploring significant predictors of SOC and the interactive processes that the person with psychiatric disabilities and the environment is involved in.

### **Assumptions and Conceptual Framework**

Since 2001, the World Health Organization (WHO) endorsed the International Classification of Functioning, Disability and Health (ICF) model to systematically address the complex issues persons with chronic illnesses and disabilities are facing. The ICF model has been receiving worldwide acceptance among rehabilitation professionals and researchers, and it

has been acknowledged as an “encyclopedia” (WHO, 2005) that guides rehabilitation research in conceptualizing the multidimensional needs of persons with chronic illnesses and disabilities (Chan et al., 2009).

The ICF model is a holistic, interactive model that comprehensively emphasizes the interactions among individuals, disabilities-related or health-related conditions, and environment (MacDonald-Wilson & Nemec, 2005). As a biopsychosocial model, the ICF model views the actual functioning and the impact of disabilities on people as interactions among health conditions, personal and environmental factors (Chan et al., 2009). To be more specific, the model comprehensively captures the interactive relationships among five constructs: (1) *Body function and structure* refer to the mental and physical body systems; (2) *Activity* refers to the daily activities initiated at the individual level; (3) *Participation* refers to the activities individuals engage in at the community level; (4) *Personal factors* and (5) *environmental factors* refer to the internal and external influences of “activities” and “participation.” Personal factors may include age, gender, race, and education; whereas environmental factors may consist of stigma, social support, resources, culture, and social norms (WHO, 2003).

Besides, the ICF model addresses persons’ functioning and capacities rather than limitations, by extending beyond impairments and dysfunction and by drawing on the whole picture in describing persons’ involvements and participation experiences in the life activities and community settings they are involved in, such as working, housing, leisure activities, and education (MacDonald-Wilson & Nemec, 2005). In this case, researchers have been calling for more systematic studies to better understand the ICF constructs and their interaction effects on some important issues throughout individuals’ rehabilitative experiences, such as community

integration, quality of life, independence and subjective well-being of persons with chronic illness and disability (Chan et al., 2009).

Applying the ICF model can be highly applicable in studying SOC among persons with psychiatric disabilities. First, the ICF model can be helpful in conceptualizing one's SOC as a multidimensional and individually constructed concept, based on its broad and comprehensive focuses on positive experiences of the situations that the person is involved in (Peterson, 2005), such as on individuals' life activities, community participation, employment, and independent living across cultures, rather than narrowly considering one single aspect of human experience (Chan et al., 2009). Also, it provides meaningful insights and helps us better understand how those individuals function "in a particular role or environment, such as in work, school, home or community," rather than just the impairments and disruptions caused by psychiatric conditions alone (MacDonald-Wilson & Nemec, 2005, p. 160). This provides a good foundation for exploring the facilitators and barriers of SOC from a holistic standpoint, by taking into account the challenging nature and impacts of psychiatric disabilities.

In addition, the ICF model at the same time focuses on the interactions among those disability-related, personal, and environmental factors (Fleming, Fairweather, & Leahy, 2013, p. 19). In this sense, this model is highly relevant to the philosophy of psychiatric rehabilitation, since both the model and the philosophy emphasize the social practices of persons with disabilities and how contextual/environmental factors can influence it (MacDonald-Wilson & Nemec, 2005, p. 160). By applying the ICF model, researchers can gain a better understanding about the complex impact that psychiatric disabilities can bring into the rehabilitation process. In other words, based on the interactions among different ICF constructs, it is reasonable to predict that if individuals with disabilities are provided with sufficient support and accommodations

from personal and environmental levels, they will have a satisfying quality of life, even with the severe impact of their psychiatric conditions.

In particular in this study, the ICF model can serve as a conceptual framework, and it can provide a common language in guiding the steps of conceptualizing rehabilitation services for facilitating SOC among persons with psychiatric disabilities. First, understanding the dynamics of the ICF constructs and their overall interaction effects on SOC can help provide a holistic service model of SOC for persons with psychiatric disabilities. Furthermore, as indicated in the adapted ICF model (Chan, Gelman, Ditchman, Kim, & Chiu, 2011), it could provide more information for future study to explore the impact of the potential factors of the ICF constructs on quality of life for persons with psychiatric disabilities (see Figure 1.1). Next, the validations of the effective factors in this conceptual service model can help with the development of intervention services with different foci and targeted levels, for example, personal-level interventions, such as increasing cognitive functioning and resilience for persons with psychiatric disabilities; as well as environmental-level interventions, such as reducing perceived stigma and providing adequate social support for them.

In summary, as illustrated in Figure 1.1, adopting the ICF model as the conceptual framework of this study can present an opportunity to gain a broader view of SOC among the heterogeneous impacting factors by taking a holistic standpoint as well as better understanding quality of life in relation to SOC for future studies.

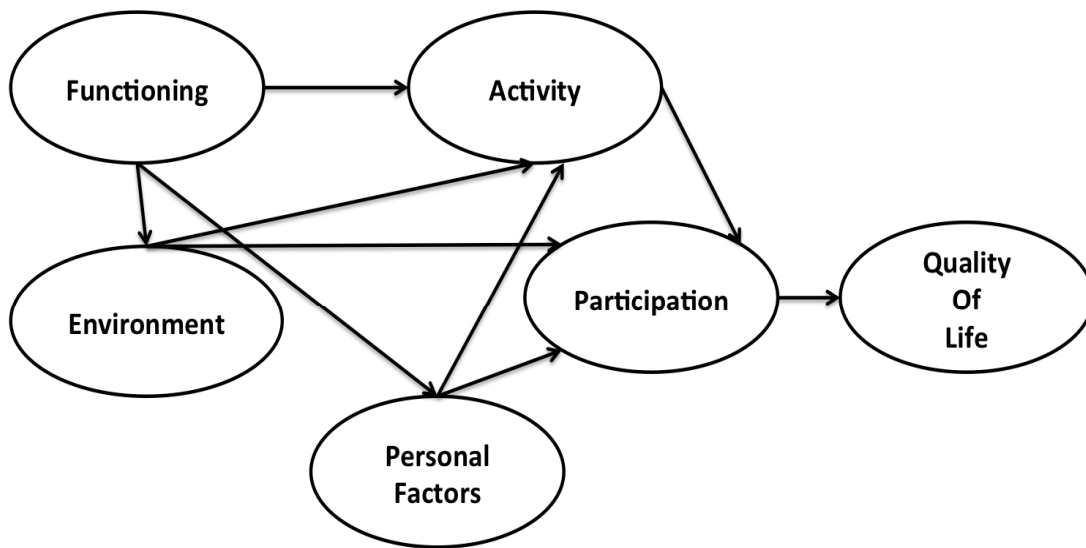


Figure 1.1 *The Framework of the World Health Organization ICF Model Adapted From Chan et al. (2011).*

### **Statement of the Purpose**

Sense of community (SOC) is important, but still largely understudied among persons with psychiatric disabilities (Townley & Kloos, 2011). Regarding the complex and dynamic nature of disability-related, personal and environmental factors, this study aimed to provide a thorough understanding of the impact of those factors on SOC by taking a holistic, biopsychosocial approach. The primary purpose of this study was to evaluate a model of SOC for persons with psychiatric disabilities by applying the ICF model as a theoretical framework. The fundamental assumption of this research is grounded in the significance and benefits of understanding SOC as a dynamic process with multidimensional aspects, namely, the functioning of persons with psychiatric disabilities, personal factors, environmental factors, and the interactions among them.



Specifically, this study examined the associations between the conceptualized ICF constructs and the participation construct as outcome, namely, how the *Functioning*, *Activity*, *Personal factors*, and *Environmental factors* can be associated with SOC for persons with psychiatric disabilities. To achieve these purposes, correlational analysis and hierarchical regression analysis were used to evaluate the associations as mentioned. This study also showed a whole picture of SOC through presenting a list of useful psychosocial factors in understanding the complex issues facing persons with psychiatric disabilities as they seek and achieve a high level of SOC. As a result, this study provided new knowledge in guiding psychiatric rehabilitation research about SOC, as well as in pointing out future directions in rehabilitation service so that effective and efficient interventions can be developed to promote SOC for persons with psychiatric disabilities. Three specific research questions were as follows:

**Research Question 1:** How does each unique variable of *Functioning* (i.e., symptom severity and cognitive functioning), *Activity* (i.e., social functioning), *Personal factors* (i.e., resilience and self-efficacy), and *Environmental factors* (i.e., social support and stigma) correlate with sense of community (SOC)? For this research question, it was hypothesized that each unique variable in the ICF model is significantly correlated with SOC.

**Research Question 2:** Does the ICF model (i.e., functioning, activities, personal factors and environmental factors) predict the SOC of persons with psychiatric disabilities? For this research question, it was hypothesized that the ICF model accounts for a significant amount of the variance in SOC.

**Research Question 3:** How does each of the ICF constructs of *Functioning* (i.e., symptom severity and cognitive functioning), *Activity* (i.e., social functioning), *Personal factors* (i.e., resilience and self-efficacy), and *Environmental factors* (i.e., social support and stigma)

interact and contribute to SOC for persons with psychiatric disabilities? For this research question, it was hypothesized that each unique variable significantly contribute to SOC for persons with psychiatric disabilities.

### **Significance of the Study**

This study filled the current literature gap by comprehensively understanding SOC from a rehabilitation-counseling standpoint. This study took a holistic approach by using the ICF model as the conceptual framework for exploring factors of SOC, and taking disability-related, personal, and environmental factors into account. As shown in the current rehabilitation literatures, this is the first study to use the ICF model in understanding SOC for psychiatric populations. By evaluating the proposed model of SOC, this study could have an overall significant influence on rehabilitation counseling services provision, and it would shed light on future research directions for persons with psychiatric disabilities.

Specifically, by uncovering the role of demographic and disability-related factors, the study results showed rehabilitation professionals to what extent, psychiatric rehabilitation services should focus on interventions such as symptoms reduction, cognitive functioning promotions, and resource provisions in addressing issues such as physical and substance abuse related treatment, psychiatric symptom management, and SSA beneficiary. For rehabilitation researchers, they can be better informed by shifting their research focus in order to address the inconsistent findings and understudied disability-related factors of SOC.

In addition, studying the psychosocial factors has been acknowledged as essential in current rehabilitation research, and a better understanding of those factors has been consistent with the philosophy of rehabilitation counseling (e.g., Chan et al., 2009). The findings of this study potentially provided rehabilitation professionals with a better idea of which personal

characteristics are more important to be developed and promoted, and which environmental features should be better improved, in order to facilitate SOC development more effectively. For rehabilitation researchers, considering the large amount of potential psychosocial factors in the current literature, this proposed study could better help them to narrow down and organize research focus and target on key factors for future studies, which can also better inform rehabilitation services and interventions.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

This chapter first provided a general introduction to the current literatures related to the background of this study, such as the definitions and diverse impact of psychiatric disabilities, and the current service directions in psychiatric rehabilitation. Also, an overview of sense of community (e.g., definition, conceptualization, benefits) and the factors affecting the sense of community were discussed. In addition, potentially diverse predictors of sense of community among persons with psychiatric disabilities were discussed. Most importantly, a comprehensive definition and review of the International Classification of Functioning, Disability, and Health (ICF) model as the conceptual framework of this study was presented. After that, the literature supporting the proposed predictors of each ICF component was discussed. Finally, the potential implications of the study were addressed.

#### **Psychiatric Disability and Psychiatric Rehabilitation**

##### **Definition of Psychiatric Disability**

According to the Center for Psychiatric Rehabilitation (2010), psychiatric disabilities occur “when mental illness significantly interferes with the performance of major life activities, such as learning, working and communicating, among others.” Previous literature has noted that when defining psychiatric disabilities, terms such as “persistent” and “severe” mental illness have been most often cited as contributing to disability (MacDonald-Wilson & Nemec, 2005).

Among the broad definitions of severe mental illness (SMI), the National Institute of Mental Health (NIMH) concluded a consensus definition by including three criteria when defining SMI. First, SMI can be described based on the diagnostic criterion, which refers to “non-organic psychosis and personality disorder.” Second, the duration criterion describes a

person with SMI as having a long-term history of hospitalization or receiving intensive outpatient treatment. Third, the disability criterion describes the impairment in work and leisure activities, and the dysfunctions in basic needs and self-care (Parabiaghi, Bonetto, Ruggeri, Lasalvia, & Leese, 2006, p. 457). Similar to that, the Substance Abuse and Mental Health Service Administration (SAMHSA, 2013) defined SMI as “persons aged 18 or older who currently or at any time in the past year have had a diagnosable mental, behavioral, or emotional disorder of sufficient duration to meet diagnostic criteria specified within DSM-IV that has resulted in serious functional impairments, which substantially interferes with or limits one or more major life activities.” Researchers such as Corrigan and colleagues (2007, p.3) have noted that persons with psychiatric disabilities are those individuals who “are not, because of mental illness, able to attain typical, age-appropriate goals for extended periods of time.”

Psychiatric disability has also been understood by specifically focusing on its potential impact on different individuals. For example, one study using conceptual analysis defined psychiatric disabilities as failing to perform: (1) “activities according to social norms,” such as not performing activities of daily living; (2) “activities related to personal goals,” such as lack of enough social contact with friends and experiencing social isolation; and (3) “activities to self-organize on the whole person level,” such as experiencing difficulties in self-compensation for the limitations caused by having psychiatric disabilities (Rudnick, 2014, pp. 109-110).

**Diagnoses.** In the United States, professionals in the mental health field have used diagnostic labels to classify different psychiatric conditions. The Diagnostic and Statistical Manual of Mental Disorders (DSM) has been used to provide diagnoses for persons with psychiatric disabilities (MacDonald-Wilson & Nemec, 2005). Currently, DSM is in its fifth edition (DSM-V, 2013), but its previous edition (DSM-IV-TR, 2000) is still being in use. SMI

has been referred to as chronic mental illness, which includes a group of mental illness diagnoses such as “schizophrenia, bipolar disorder, severe forms of depression, panic disorder, and obsessive-compulsive disorder (OCD)” (Iyer, Rothmann, Vogler, Spaulding, 2005, p. 43). NAMI (2006) also provided a similar group of mental illness when defining psychiatric disabilities, namely bipolar disorder, schizophrenia, schizoaffective disorder, severe major depressive disorders, anxiety disorder, substance abuse related disorders, and post traumatic stress disorder (PTSD). In this study, psychiatric disabilities and SMI are used interchangeably, which include bipolar disorder, major depressive disorder, schizophrenia, schizoaffective disorder, psychotic disorder, anxiety disorder and substance abuse-related disorders.

**Psychiatric symptoms.** While diagnosis is essential for providing services for persons with psychiatric disabilities, addressing psychiatric symptoms would be more important. It is because individuals with either the same or different diagnosis can experience diverse psychiatric symptoms, which can further impact the actual functioning of persons in their life activities (MacDonald-Wilson, 2005). Some common psychiatric symptoms that persons with psychiatric disabilities may experience include: hallucinations, which are the inaccurate perceptions that someone else cannot experience; delusions, which are the inaccurate beliefs that persons hold that may not be consistent with the reality and that persons who experience delusions are likely to find difficult to distinguish between their false beliefs and what is real; depression, which can lead to constant feelings of sadness, lost interest in daily activities, difficulty in concentration, sleeping, and performing in basic functions such as working and going to school; and mania, which refers to abnormally elevated moods that are expansive and irritable, and that are characterized in persons with mania sudden changes from feeling pleasant to being irritable (Wang, 2011).

## **Prevalence**

According to SAMHSA (2013), there were 4.1% or approximately 9.6 million persons aged 18 years or older who had mental illness that were severe enough to cause disabilities; resulted in significant functional impairments and limitations in everyday life. It has been estimated that more than 40 million people have psychiatric disabilities in US (Ackerman & McReynolds, 2005). In addition, the statistics from NAMI (2013) specifically show that schizophrenia can affect 2.4 million Americans, and major depression affects 5-8% of adults each year, which is saying that around 25 million Americans have depression within the current year alone. Anxiety disorder affects 18.1%, or 42 million people. More specifically, one in 30 adults in US during their lifetime has been diagnosed with PTSD alone (10% of women and 5% of men) due to the experience of natural disasters or military services, or trauma at some point in their lives. Moreover, there are approximately 26% of homeless persons live with SMI, and around 20% of state and local jail prisoners have a “recent history” of mental health conditions.

Based on the statistics from 2012 (SAMHSA, 2013), the percentage of persons with SMI was different by gender, age, education and family income. Specifically, when compared with men (3.2%), women (4.9%) were more likely to have SMI. The percentage of persons with SMI can also vary by age groups. For example, people aged 26 to 49 had the highest percentage (5.2%) of having SMI, followed by those aged 18 to 25 (4.1%), and then followed by those older than 50 (3.0%). Besides, persons with higher levels of education, such as a college degree (3.1%), were less likely than persons with high school education (4.8%) to experience SMI. The percentage of having SMI is also related to family income. For those who live below the federal poverty level (7.2%), they are more likely than to develop SMI compared to those who are at 100% to 199% (5.2%) and at 200% or more of the federal poverty level (3.0%), respectively.

## **Impact of Psychiatric Disability**

Psychiatric disability is noted as the second leading burden next to cardiovascular diseases in the United States in market economics (Iyer et al., 2005). It has been estimated, based on data from 2002, that each year the total cost of psychiatric disabilities can be in excess of \$300 billion (NAMI, 2013). However, the social and economic losses were still being underestimated based on the 1996 Global Burden of Disease Study (Murray & Lopez, 1996). Researchers noted that the total global burden of psychiatric and neurological conditions will keep on increasing from 10.5% to almost 15% in 2020, which is “a bigger proportionate increase than that for cardiovascular disease.” In addition, psychiatric disabilities have been linked with misperceptions, such as “dangerousness” and “violence,” by the public, since persons with psychiatric disabilities are often reported to be involved in minor offenses, such as substance abuse and traffic violations. According to criminal justice statistics, persons with psychiatric disabilities are 150% more often to be jailed than being admitted to receive psychiatric treatment, and they are 800% more likely to be hospitalized (Tschopp & Frain, 2009).

In addition to the cost and impact on society, psychiatric disabilities can lead to increased rates of suicide, which is the tenth leading cause of death in the United States. More than 90% of persons who have committed suicide had diagnosable mental disorders (NAMI, 2013). Substance abuse is also noted as the second co-occurring psychiatric disorder among 50% of persons with psychiatric disabilities, and it has been considered to be one important risk factor in increasing the rates of suicide (SAMHSA, 2013).

**Co-morbidity.** Persons with psychiatric disabilities are also more likely to have co-morbid health conditions, such as hypertension, asthma, diabetes, heart disease, and stroke, than other disability groups. The negative impact of anti-psychotic medications can further cause



weight gain, obesity, and Type II diabetes (Hyde, 2012). Approximately 50%-90% of persons with psychiatric disabilities have at least one medical condition. Those people are 1.5 to 5 times more likely to have diabetes, hypertension, dyslipidemia, smoking, and obesity than general population (Viron & Stern, 2010). It has been well documented that excess mortality due to medical conditions has been highly associated with persons with psychiatric disabilities (Lawrence & Kisely, 2010). Due to those medical conditions, persons living with psychiatric conditions die on average 25 years earlier than general population (Manderscheid, Druss, & Freeman, 2007).

**Healthcare.** Given the above-mentioned situations, healthcare services become essential among this population. However, according to the US Department of Health and Human Services, less than one third of persons with psychiatric disabilities receive mental health services each year (1999). This particular population experience abundant challenges to accessing medical care. Besides, the lack of system integration (medical and mental healthcare systems) can further prevent high quality service delivery after accessing medical care, which can cause poor health outcomes for persons with psychiatric disabilities. For example, patients with schizophrenia patients have low rates of receiving surgical treatment, and patients with comorbid diabetes and psychiatric disabilities tend to receive lower standard diabetes treatment (Lawrence & Kisely, 2010). In these cases, individuals tend to receive disparities in health care, which has been outlined as: (1) “overuse” of healthcare, which refers to “providing care in which the risk outweighs the benefit”; (2) “underuse” of healthcare, which refers to “failing to provide care in situations where the benefit outweighs the risk”; and (3) “misuse” of healthcare, which can result in “avoidable complications of appropriate care” (Viron & Stern, 2010).

**Housing.** Persons with psychiatric disabilities are more likely to live in poor housing conditions and in general poor social circumstances (Viron & Stern, 2010), which are most likely due to their deficits in performing essential daily living tasks and maintaining adequate social functions, particularly for persons with schizophrenia and bipolar disorder (National Coalition for the Homeless, 2009). According to SAMHSA (2013), 20% to 25% of persons with psychiatric disabilities are homeless. Psychiatric disability has been mentioned as the third largest cause of homelessness among 25 cities in US in a 2008 survey. More than that, psychiatric populations who are homeless also tend to suffer from substance abuse and other physical problems; and those problems can further impact their chances of education and employment. Previous studies have also argued that despite being provided with housing opportunities, these persons still experience difficulties in sustaining residential stability, and they often become off street again. As a result, effective rehabilitation services, such as supported housing and mental health treatment, work-related training, and psychosocial skills interventions, are critically needed (National Coalition for the Homeless, 2009).

**Education.** Education level has been identified as one of the most important factors in achieving employment (Beiser, Erickson, Fleming, & Iacono, 1993), and it has been closely associated with the “immunity to economic trend” (US Department of Labor, 2010). For persons with psychiatric disabilities, they are more likely to have lower levels of education which can be a critical factor of low employment rates (Collins, & Mowbray, 2005). For example, around “4.29 million persons with psychiatric disabilities would have graduated from college if they has not experienced an early-onset psychiatric disabilities” (2005, p. 304). Poor education is associated with higher mortality rates. In general public, there are 477.6 deaths per 100,000 persons with an education level higher than high school; however, there are 650.4 deaths among

those with an education level lower than high school. Persons with psychiatric disabilities are less likely to complete high school than those without the condition (Viron & Stern, 2010).

**Employment.** Due to the disruptions of the onset of psychiatric disabilities, those people face barriers in completing a high level of education, which can result in limitations in employment. For example, 85% of persons with psychiatric disabilities are unemployed (Ackerman & McReynolds, 2005), and the unemployment rate is three to five times higher than the general population (Viron & Stern, 2010). In fact, one-third of working age adults who are receiving SSI, and 27% receiving SSDI are persons with psychiatric disabilities. Among the disability groups that use State-Federal Vocational Rehabilitation (VR) services, psychiatric disability is the primary disability group which accounts for 20% of the VR services provided to persons with disabilities. Psychiatric disabilities are noted as the “second most frequent category of disorders served by state-federal vocational rehabilitation programs in every state” (MacDonald-Wilson, Rogers, & Anthony, 2001, p. 217).

**Implication.** Persons with psychiatric disabilities are facing complicated challenges in everyday life such as daily living activities, participation in community (e.g., housing, education, and employment), treatment and service related issues, and overall self-sufficiency. More importantly, this population often have deficits in social functioning, which can result in limitations in interpersonal situations, such as limited social networks and social contacts with other people (Ackerman & McReynolds, 2005), and the cognitive deficits can lead to obstacles in performing daily activities, such as lack of decision making skills and poor treatment adherence (Tschopp & Frain, 2009).

## **Psychiatric Rehabilitation**

Since the 1980s, the impact of psychiatric disabilities has been viewed as “not only causes mental impairments or symptoms but also causes the person significant functional limitations, disabilities, and handicaps” (Anthony, 1993, p. 525).

**Mission.** The mission of psychiatric rehabilitation is to support persons with psychiatric disabilities to “increase their functioning, so that they are successful and satisfied in the environments of their choice with the least amount of professional intervention” (Anthony, Cohen, & Farkas, 1990, p.2). In other words, it is important to provide individuals with psychiatric disabilities the opportunities to develop social skills and improve overall functioning so as to help them experience the everyday community and social life as others who do not have the condition (Bond, 1995).

**Goals.** There are specific goals of psychiatric rehabilitation that serve to define its missions, namely inclusion, opportunity, independence, empowerment, quality of life, and recovery.

**Inclusion.** The goal of “inclusion” emphasizes the community life experiences that persons with psychiatric disabilities are aiming to achieve. Historically, persons with psychiatric disabilities have been institutionalized and segregated from their family, friends, and social life. With the movement of deinstitutionalization since 1960s, those people want to have real life experiences in working, housing, and interpersonal and recreational activities (Corrigan, 2003; DeFrances & Hall, 2002). The major objectives of deinstitutionalization are community integration, which aims to facilitate persons’ normalization and to help with the development of natural support networks (Aubry, Tefft, & Currie, 1995). Community integration emphasizes equal rights and the same opportunities of inclusion for persons with psychiatric disabilities in

terms of living, working, studying, and participating in typical community settings (Wong & Solomon, 2002). As a result, maximizing the level of community integration to facilitate the full inclusion of persons with psychiatric disabilities can be beneficial.

***Opportunity.*** To achieve inclusion, persons with psychiatric disabilities need to have “equal opportunities” to participate and socialize in community life activities. Concerning this, misconceptions and stigma toward psychiatric disabilities should be eliminated in order to provide all individuals with rightful opportunities in the array of life activities and experiences (Corrigan, 2003).

***Independence.*** The goal of “independence” focuses on developing independent value and self-determination during the process of seeking one’s own community experience, rather than requiring reliance on other people and on rehabilitation services. As a means of independence, “empowerment” aims to provide persons with psychiatric disabilities the opportunities and freedom to make self-determination and life choices (Corrigan, 2003). It has been defined as the “transfer of power and control over the values, decisions, choices, and directions of human services from external entities (i.e., service providers) to the consumers of services, resulting in increased motivation to participate and succeed and a greater dignity for the consumer” (Kosciulek, 1999, p. 201). By supporting persons with psychiatric disabilities to regain “control over their life decisions,” empowerment can also be facilitative for those persons to achieve other goals of psychiatric rehabilitation, such as “recovery” and “quality of life.”

***Recovery.*** “Recovery” is noted as an essential goal of psychiatric rehabilitation. It emphasizes the possibilities and potentials of persons with psychiatric disabilities in controlling their symptoms, overcoming limitations, participating in community activities, attaining goals in their lives and creating new meaning and life purposes; at the same time accepting the

boundaries and catastrophic effects that psychiatric disabilities may place on their lives (Anthony, 1993; Corrigan, 2003). Recovery is more than reducing psychiatric symptoms; persons with psychiatric disabilities also have wants and needs in being included in community experiences (Anthony, 1993). Accordingly, even though symptom reduction is fundamental, developing psychosocial skills (e.g., interpersonal skills) can be more beneficial to help those individuals to achieve their community needs and social wants (Corrigan, 2003). Previous studies have noted that the study of community integration is always associated with studying the outcomes of recovery, due to two major reasons. First, community integration has been conceptualized as a concrete outcome variable to measure the concept of recovery, such as measuring employment outcomes, social connections, and psychological sense of community (e.g., Abdallah, Cohen, Sanchez-Almira, Reyes, & Ramirez, 2009; Yasui & Berven, 2009). Second, community integration is noted to be able to assist people with psychiatric disabilities who are going through the process of recovery (Abdallah et al., 2009).

***Quality of life.*** “Quality of life” is the “sense of life satisfaction across a variety of basic and higher level needs” (Tschopp & Frain, 2009, p.382). For people with psychiatric disabilities, there has been an increasing emphasis on the quality of life for this population in the mental health literature (Ware, Tungenberg, Dickey, & Fisher, 2008). Given the common objective of mental health treatment to improve people’s “well-being and overall satisfaction with current aspects of their life,” quality of life becomes a well recognized outcome variable, and it has gained popularity (Accordino, Rosenthal, & Freund, 2000, p. 354). Some rehabilitation research has indicated that by providing services with the aim of promoting quality of life among consumers with psychiatric disabilities, higher levels of “independence, satisfaction, production and community integration” were reported (Lustig & Crowder, 2000, p. 22). The current

literature still consistently reveals the association between psychiatric disabilities and decrements in quality of life (e.g., Kuehner, 2002), which has been identified as an important research topic to be better clarified for the psychiatric population.

**Rehabilitation strategies.** In order to meet the mission and goals of psychiatric rehabilitation, several strategies are noted and discussed here as examples.

**Cognitive rehabilitation.** Cognitive rehabilitation aims to help persons with psychiatric disabilities improve their cognitive deficits (e.g., problems with attention, memory, decision-making, and expression) in order to reduce barriers to performing important daily tasks. Due to the negative influence of cognitive deficits on social and vocational functioning, effective cognitive rehabilitation interventions become extremely significant. Studies emphasize the benefits of improving memory, cognitive performance, symptoms, cognitive flexibilities, and coping with cognitive demands (Twamley, Jeste, & Bellack, 2003). Some specific approaches, such as “monetary reinforcers and rule learning,” have been found to be helpful in augmenting persons’ ability to manipulate concepts flexibilities and “attention-focusing procedure,” which can improve persons’ acquisition and generalization of skills by repeating attentional prompts through the process of learning new skills (Corrigan, 2003).

**Instrumental and social support.** Instrumental and social support includes services such as “establishing linkages with community programs,” networking with community programs, and unconditional emotional assistance (Corrigan, 2003). They are indeed essential strategies that rehabilitation service providers can offer to persons with psychiatric disabilities to help them solve obstacles to living independently in community settings. Researchers have noted that to maximize the benefits of supportive services for persons with psychiatric disabilities, rehabilitation professionals who can “utilize supportive interventions that facilitate

empowerment may aid in building a stronger working alliance and in promoting a greater degree of treatment engagement and maintenance” (Tschopp & Frain, 2009, p. 384).

**Skills training.** Skills training is another rehabilitation strategy that can help persons with psychiatric disabilities to increase their social and coping capabilities in order to perform in important daily and social activities (Tschopp & Frain, 2009). When persons with psychiatric disabilities develop fundamental social and coping skills, they can better adapt to real life situations, and they can deal with the requirements and demands of social activities. According to Corrigan and colleagues (2005), skills training can reduce the rate of hospitalization and psychiatric symptom severity, increase self-esteem, and facilitate the process of recovery. By enhancing coping and social skills, they can better reach their social goals, such as working, performing daily activities, meeting the demands from various societal roles, and eventually promoting overall quality of life (Corrigan, Rao, & Lam, 1999).

**Implications.** The mission and goals of psychiatric rehabilitation have suggested the close association and intense focus on facilitating persons with psychiatric disabilities to achieve social inclusion and community experiences in the real world life. It has been clearly shown that one important purpose of those rehabilitation strategies is to enhance the multidimensional functioning of persons with psychiatric disabilities, which can further result in their positive community seeking experiences. As a result, a focus on studying the community integration experiences of persons with psychiatric disabilities is beneficial.

### **Theories of Sense of Community**

Sense of community (SOC) was first studied in the field of community psychology. Seymour Sarason was among the first persons who proposed the critical need for focusing on the psychological SOC in his ground breaking book in 1974, *The Psychological Sense of Community*:



*Prospect for a Community Psychology.* According to Sarason (1974), psychological SOC is the key missing study area that must be understood in responding to the negative influence of “individualism,” which he believed can cause “alienation, selfishness and despair” (Dalton, Elias, & Wandersman, 2001). As the pioneer of the psychological SOC, Sarason proposed the value of studying individuals along with their relationships to the larger collectives within which individuals participate (2001). He articulated the definition of psychological SOC as “the perception of similarity to others, an acknowledged interdependence with others, a willingness to maintain this interdependence by giving to or doing for others what one expects from them, and the feeling that one is part of a larger dependable and stable structure” (Boyd & Nowell, 2014, p. 108). He believed that missing of psychological SOC can be the “single most disintegrating aspect of contemporary life” (Townley & Kloos, 2011), which can lead to a “destructive force” in human experience (Dalton et al., 2001).

### **Sense of Community and Community Integration**

Since the landmark study of Wong and Solomon (2002), community integration has shifted from solely focusing on physical participation to a multidimensional conceptualization that consists of physical, social, and psychological aspects of integration. Physical integration means people’s participation in social activities; social integration refers to people’s social contacts, interactions, and size of social networks with people without disabilities; and psychological integration, a newly added aspect, also refers to SOC (Wong & Solomon, 2002). In this sense, SOC is one aspect of the concept of community integration. While understanding SOC is important because of its impact on quality of life and subjective sense of well-being among psychiatric populations (e.g., Aubry & Myner, 1996; Kennedy, 1989; Prince & Gerber, 2005), and as the core aspect of achieving full community integration (Aubry & Myner, 1996;

Townley & Kloos, 2009; Wong & Solomon, 2002), there is still dearth of literature about it.

### **Conceptualization**

The most overarching theoretical framework of SOC was not unveiled until 1986. SOC is defined as “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together” (McMillan & Chavis, 1986). McMillan and Chavis also proposed a four-component theoretical framework for understanding the multidimensional nature of SOC:

1) *Membership* refers to a sense of belonging, emotional safety, and identification of being in a group. It is a sense of personal relatedness. Membership defines boundaries of “who is in and who is out,” by using factors such as common symbols and personal investments in the community. By having membership, members can have a better sense of emotional support, which can further benefit the functioning of the community itself.

2) *Influence* refers to a sense of mattering. The members in the community can have an influence on the community level, and the community can also have control over its members. This is a process that can lead to both positive and negative outcomes. Positively speaking, since members can have influence on the community, members’ contributions to the community can be valued, and they can feel that they have a say in the community. When many members combine their contributions together, such as skills, knowledge, and resources, members can have a bigger influence that benefits more in the whole community. However, it is also likely that only some members dominate the community. In addition, it is also possible that when the influence from the community level is too strong, high conformity among members can result.

3) *Integration and fulfillment of needs* refers to members’ needs being met by being the members in the community, which is highly relevant to the membership component. After

achieving membership, and receiving support from the community, members can have a reinforced value of membership in the community.

4) *Shared emotional connection* refers to the commitment and belief that members have shared and will share history, common places, time together, and similar experiences. This component addresses shared experiences, social contacts, and interactions between each member.

According to McMillan and Chavis (1986), the definitions and theory of SOC can be applied to all types of communities, and the components described above can be used together to measure the overall SOC. They further argued that SOC theory can be used to compare among different communities. In this case, what *community* refers to needs to be clarified.

### **Definition of Community**

Providing a specific definition of “community” is not a simple task, due to the large numbers of definitions of “community” discussed in the social science literature. For example, Hillery listed 94 definitions of community (Fisher, Sonn, & Bishop, 2002). According to McMillan and Chavis (1986), two general forms of community have been addressed: (1) the “territorial” and “geographical” notion of community, which refers to a specific location such as a neighborhood, town, or city; and (2) the “relational” form of community, which is based on common values, interests, and characteristics and without reference to a specific location.

Persons can be the members of multiple communities and can develop a SOC simultaneously in both geographical and relational communities. For example, one person can live in a geographically distinct community setting (e.g., one neighborhood) and at the same time, he/she is a church member or volunteer as a social worker in a shelter, which provides him/her the relational form of community (Brodsky & Marx, 2001). In this sense, for persons with psychiatric disabilities, “community” no longer only refers to the institutions they receive

services in; more than that “community” can mean the diverse settings in which they play all their personal and social roles (McMillan & Chavis, 1986).

### **Sense of Community as a Multidimensional Construct**

Previous studies of SOC argued whether it should be studied at the community level or the individual level. Some researchers, such as Hill (1996) and Hedge and Kelly (1992), have mentioned the benefits of examining SOC at the community level. For example, Hill specifically noted that the SOC has been more related to factors beyond the individual level, and should best be understood at the community level (1996). Other studies (e.g., Royal & Rossi, 1996), however, have completely focused on the variables from the individual level of SOC. Many more studies noted that the outcome of SOC is related to variables at both the individual and the community levels (e.g., Chavis & Nerbrough, 1986; Chavis & Wandersoman, 1990). In other words, SOC can be understood as the relationships between persons and the social contexts, or the environmental settings. Previous studies also suggested that studying the SOC should focus on personal and environmental variables as well (Brodsky, O’Campo, & Aronson, 1999). Viewing SOC as a multidimensional construct can help researchers learn which aspects of communities can better foster a stronger SOC.

In SOC Literature, personal variables include: “safety-related concerns” or “fear of crime” (Perkins & Taylor, 1996), active involvement in problem-solving (McMillan & Chavis, 1986), age, length of residency, income, education, race, gender (Hill, 1996), self-efficacy (Altman, Feighery, Robinson, Haydel, Strausberg, Lorig, & Killen, 1980), and locus of control (Langram, 1997). For environmental factors, they include: crime rate (Brodsky et al., 1999), population size, and density (Sagy, Stern, & Krakover, 1996).

## **Benefits of Studying Sense of Community**

SOC is an important process in which “the members interact, draw identity, social support, and make their own contributions to the common good” (Bess, Fisher, Sonn, & Bishop, 2002, p. 6). SOC can serve as a mechanism to develop a better community environment. Specifically, by developing a stronger SOC, community members can have a greater sense of influence on the community, which can further contribute to the development of the members as well as of the community (Chavis & Wandersman, 1990). SOC is related to subjective well-being among many studies (e.g., Davidson & Cotter, 1991, Pretty, Andrewes, & Collett, 1994; Pretty, Conroy, Dugay, Fowler & Williams, 1996; Prezza & Costantini, 1998). For example, based on a study of 300,000 inhabitants living in three areas, SOC is found to be related to subjective well-being. In addition, SOC is also associated with psychological well-being (Pretty et al., 1996), life satisfaction (Prezza et al., 2001), participation in community (Chavis & Wandersman, 1990), community involvement (Hughey et al., 1999), safety (Ziersch, Baum, MacDougall, & Putland, 2005), loneliness, happiness and coping (Pretty et al., 1996), perceptions of belonging and community connectedness (Sonn & Fisher, 1996), and length of residence, neighboring, and informed social control (Perkins et al., 1990). According to the studies conducted by social epidemiologists, results show the strong association of SOC with health, well-being, and mental health outcomes for persons from diverse populations (Townley & Kloos, 2011). Specifically for persons with psychiatric disabilities, the SOC is linked with community participation and functioning, and it can further facilitate the recovery process.

## **Factors Affecting Sense of Community for Persons with Psychiatric Disability**

Studies show that SOC is associated with multidimensional predictors among persons with psychiatric disabilities. However, little research has been conducted, particularly in the field

of rehabilitation. Based on the existing studies that directly explored predictors of SOC for psychiatric populations, several predictors are noted to be significant.

Specifically, environmental factors such as neighboring is shown to be associated with SOC. For example, based on a study of 402 residents with SMI, environmental predictors such as neighborhood tolerance for mental illness, neighborhood relations, neighborhood safety, neighborhood satisfaction, and types of housing emerged as significant predictors of SOC (Townley & Kloos, 2011). Consistent with the literature in general population, neighboring factors have played a critical role in building SOC. Another study of 630 residents that examined similar neighboring factors also showed that positive neighboring experiences (e.g., positive neighborhood relations and frequent neighborhood contacts) is particularly important to SOC (Prezza et al., 2001). Besides, predictors such as stigma and discrimination have been reported as inversely related to SOC (Prince & Prince, 2002). According to those findings, it can easily be concluded that if the social environment can be more tolerant to persons with psychiatric disabilities, and if more social interaction opportunities can be offered with less stigmatized attitudes toward mental illness, a greater SOC can be achieved.

In addition to environmental predictors, personal predictors for persons with psychiatric disabilities are reported. Cummins and Lau (2003) and Ellaway et al. (2001) noted that mental illness symptoms are inversely related to SOC. However, other studies (e.g., Townley & Kloos, 2011) did not find a significant relationship between them. Instead, persons' functioning is proposed to be more significant to SOC. In this sense, psychiatric symptoms should be further explored. Due to the broad dimensions of social functioning that can influence a person's every day life, the functioning of persons with psychiatric disabilities, particularly the relationship between social functioning and SOC worths deeper exploration (Yanos et al., 2007). Concerning

the limited number of studies about predictors of SOC for persons with psychiatric disabilities, more studies of this area are critically needed.

### **Implication**

Literature about SOC indicates the multidimensional nature of this important construct. SOC is an interactive process that captures personal characteristics and their interactions with the community. Previous studies show the diverse personal and environmental predictors associated with SOC for psychiatric populations, which in turn demonstrate the needs of comprehensive understanding of SOC. However, none of those studies examine SOC from a holistic perspective, or look at both personal and environmental factors and their interaction effect together. In this sense, adopting a holistic and interactive model as a conceptual framework to better understand and explore predictors of SOC for persons with psychiatric disabilities will be beneficial.

### **Overview of the ICF Model**

Developed by WHO in 2001, the ICF model has been well recognized as the “generally accepted” classification system to describe functioning in rehabilitation (Peterson & Kosciulek, 2005). Unlike other diagnostic systems, the ICF model provide descriptions of the “ situations” that persons are under, within “an array of health or health-related domains,” as well as within “the context of personal and environmental factors” (Peterson, 2005). By providing classifications of the medical, psychosocial, and social aspects of health and functioning, the ICF model can be particularly useful in the field of rehabilitation counseling (Peterson & Rosenthal, 2005). It can be served as an important research tool to measure rehabilitation outcomes and to understand quality of life (WHO, 2001, P.5)

The ICF model presents a new understanding of health as the “dynamic interaction between an individual’s functioning and disability within a given context” (Peterson & Rosenthal,

2005). Accordingly, ICF can serve as a useful conceptual framework to understand disability, as well as functioning and health, by using a culturally sensitive language that has received worldwide acceptance among international rehabilitation health researchers and professionals (Peterson, 2005). The ICF model is sensitive enough to be applied across cultures, age groups, and gender, which make the ICF model applicable to diverse populations (Chan et al., 2009). According to WHO (2001), the ICF model can be used to “provide a unified and standard language and framework for the description of health and health-related states” (WHO, 2001, P.3). Researchers view the ICF model as a “universal, culturally sensitive, integrative and interactive” model that can cover “the entire lifespan of human development” (Peterson & Rosenthal, 2005).

The ICF model was revised from the International Classification of Impairments, Disabilities and Handicaps (ICIDH). It shifted the emphasis, from solely focusing on disabilities and impairments to a new focus on “functioning as a component of health,” by adding the *environmental factors* and *participation* components (Peterson & Kosciulek, 2005). The ICF model is a biopsychosocial model because it integrates the medical and social models in order to understand health and functioning from a biological, personal, and social perspective, by taking a holistic approach. Conceptualized by George Engel in 1977, the biopsychosocial model focuses on the influence of all aspects (i.e., biomeidcal, personal, and environmental) that can impact an individual’s health and illness. It provides an “integrative, comprehensive and systematic” view to understand an individual in relation to his/her environment (Sperry, 2008), as well as the interaction between a person and overall society (Imrie, 2004). Besides, the ICF model is also an interactive model that understands disability as an interaction among “impairment, functioning, and environment,” in terms of both the psychosocial and environmental aspects (Peterson, 2005).



## Theoretical Framework of the ICF Model

The ICF includes two main parts: (1) *functioning and disability*, and (2) *contextual factors*. Within each part, there are two subcomponents. For the first part, *functioning and disability*, it consists of two parallel classifications: *body functions and body structures* and *activities and participation*. For the second part, *contextual factors*, it also consists of two components. The first classification is *environmental factor*, or factors in the physical, social, or attitudinal world, ranging from the immediate to the more general environment. Environmental factors are qualified as either facilitating or hindering functioning. For the second component, *personal factors*, it has not been classified in the ICF as other components have been, which is due to the complicated nature of social and cultural variations around the world (Peterson & Rosenthal, 2005). However, considering the unique impact of highly diverse personal characteristics in complex social circumstances (e.g., age, gender, race, religion, culture, coping style, and resilience) can be beneficial for understanding better the unique experiences and needs of persons who are seeking rehabilitation services (Chan et al., 2009; Peterson, 2005).

### Definition of the ICF Components

**Functioning, impairment, and disability.** *Functioning* can cover all body functions, activities, and participation in society; it refers to areas of well-being of functioning, and it is a major focus in ICF. *Impairment* focuses on the manifestations of the dysfunctions in the body's structures or functions. Impairment is different from the underlying pathology itself; it is not about the presence of a disorder or disease, but instead “represents a deviation from certain generally accepted population standards” of functioning (WHO, 2001, p. 12). The etiology of functioning is not the focus in ICF, but it is the province of the ICD-10 (Peterson, 2005). Determination of impairment can be made by “those qualified to judge physical and mental

functioning according to these standards” (p. 12). *Disability* is defined as any impairments, activity limitations, and participation restrictions in the environment, or to “the outcome or result of a complex relationship between an individual’s health condition and personal factors, and of the external factors that represent the circumstances in which the individual lives” (WHO, 2001, p. 17). Both *functioning* and *disability* are conceptualized within the dynamic interaction between health conditions and contextual factors. In contrast to *functioning*, *disability* addresses the negative aspects of the dynamics between health conditions and contextual factors.

**Body functions and structure.** The first component under *functioning and disability* is *body functions and structure*. There are two classifications included in the *body functions and structure* component: first, *body functions*, which means the physiological and psychological functions of body systems; and second, *body structures*, the anatomical parts of the body, such as the eye, ear, voice, respiratory systems and skin. Even though the two classifications are classified separately, they are parallel with each other, based on the same body system taxonomy. For example, hearing functions are associated with the *body structures of ear and related structures*. In this way, it is easy to compare the physiological systems with the anatomical structures (Peterson, 2005). The four criteria of impairment are consistent with *body functions and structures*, which are based on the severity of (a) loss or lack, (b) reduction, (c) addition or excess, and (d) deviation. Various qualifier codes are used between the *body functions* and the *body structures* components in order to further define the severity level.

**Activities and participation.** The second component under *functioning and disability* is *activities and participation*, which covers a wide range of different aspects of functioning, from both individual and societal perspectives. *Activity* refers to the execution of a task or action by an individual, such as sitting, copying, calculating, and driving. Participation is defined as

involvement in a life situation. The domains in this component can be used to describe either or both concepts. Both *activity limitations* and *participation restrictions* “are assessed against a generally accepted population standard” (WHO, 2001, p. 15) for persons without a similar health condition. Specifically, *activity limitations* can refer to the limitations persons have in executing a task or action, determined by comparing them, with the execution levels of persons without disabilities. *Participation restrictions* mean the restrictions persons may experience participating in social and life activities, which is determined by comparing them with the social participation of persons without disabilities.

**Environmental factors.** *Environmental factors* refer to those facilitative or hindering factors that can influence *body functions and structures* at the *functioning and disability* level. *Environmental factors* are organized into three levels which focus on “the physical, social, and attitudinal environment in which people live and conduct their lives” (WHO, 2001, p. 171). First is the individual level (e.g., support network), which refers to the influence from the immediate physical environmental, such as from home, work, and school. At this level, persons can be most directly influenced by their friends, peers, family members, and co-workers. Second is the services level (e.g., vocational rehabilitation services), and the third refers to the cultural/legal systems level (e.g., world views and laws). For the services level and the cultural/legal systems level, they are more generally environmental from a societal perspective, which can include formal and informal social structures and service delivery systems (Peterson & Rosenthal, 2005). Studies assessing environmental factors can provide understandings about the facilitative or risk factors of health conditions that exist in the societal environment for persons with disabilities, which can inform efficient services delivery (Peterson, 2005).

**Personal factors.** *Personal factors* refer to those personal characteristics that can impact health and functioning, such as gender, race, age, fitness, religion, lifestyle, habits, upbringing, coping styles, social background, education, profession, past and current experience, the overall behavior patterns and characteristics of individual psychological assets. As mentioned, *personal factors* are considered as part of contextual factors but are not coded in the ICF. The major reason is due to personal factors not being considered as part of health conditions or health state. However, such factors are considered within the overall ICF model since they may affect the outcome of a given intervention. Studying *personal factors* is becoming more significant in the field of rehabilitation, because the field's long-term focus is on each individual's experience of having disability and the uniqueness each person can bring to their experiences. In addition, the demographic changes of the United States have led to the high diversity of clients with disabilities who seek rehabilitation counseling services; as a result, more studies of those complex, heterogeneous personal factors are meaningful for understanding the potentially significant personal factors as well as the interactions among personal factors, disabilities, and functioning (Chan et al., 2009).

### **Using the ICF Model as a Conceptual Model of Sense of Community**

According to the mission of psychiatric rehabilitation (Anthony, 1993), reducing the impact of psychiatric symptoms is noted as the fundamental goal of supporting persons with psychiatric disabilities to achieve recovery as well as full participation in their community (Corrigan, Mueser, Bond, Drake, & Solomon, 1999). Studies about psychiatric disabilities also note that psychiatric diagnoses and symptoms can have diverse impacts on different persons (e.g., significant influence or no influence) but are not the single predictors of positive rehabilitation outcomes. Simply focusing on the impact of disability-related factors cannot be sufficient

enough to predict employment outcomes, social integration, and full participation. The level of functioning, personal characteristics as well as the influence from the environment can be more significant in predicting well-being outcomes for persons with disabilities (Peterson, 2005). For studying the SOC of persons with psychiatric disabilities, due to its multidimensional nature, an integrative and interactive conceptual model is critically needed.

The ICF model is a biopsychosocial model that comprehensively captures the effects of disability, functioning, and health from both the personal and societal perspectives. It is an important research tool and conceptual model in measuring rehabilitation outcomes (Peterson & Rosenthal, 2005). Researchers of mental health studies have always noted the unclear relationship between the various predictors impacting the rehabilitation process and positive rehabilitation outcomes, which put rehabilitation intervention studies under a “black box” situation. Specially, researchers pointed out the difficulties in understanding and assessing the complicated and diverse sources of components contributing successful rehabilitation interventions, as well as the lack of specificity and focus regarding both the impact of disabilities at the individual level and the provision of efficient programmatic interventions at the environmental level (Ackerson, 2000). Concerning this, for the current study, using the ICF model can provide a complete picture of SOC by considering the impact of psychiatric disabilities, persons’ functioning, the influences from personal and environmental contexts and the interaction effect among those constructs. It does not only present the outcomes of SOC, but also provides new information about the contribution of each ICF construct within the model. It has been recommended by previous studies that exploring the relationships among the ICF components and their interactions can positively affect the full inclusion, health, quality of life

and subjective well-being, those positive rehabilitation outcomes for persons with disabilities while they seek community experiences (Chan et al., 2009).

Thus, this study used the ICF framework to formulate a model in predicting the outcome of SOC. Each major ICF construct was conceptualized by using specific predictors of SOC (see Figure 2.1) based on the literature. The following section provides a discussion of how the predictors of *functioning*, *activity*, *personal factors*, and *environmental factors* can affect the SOC outcomes of persons with psychiatric disabilities.

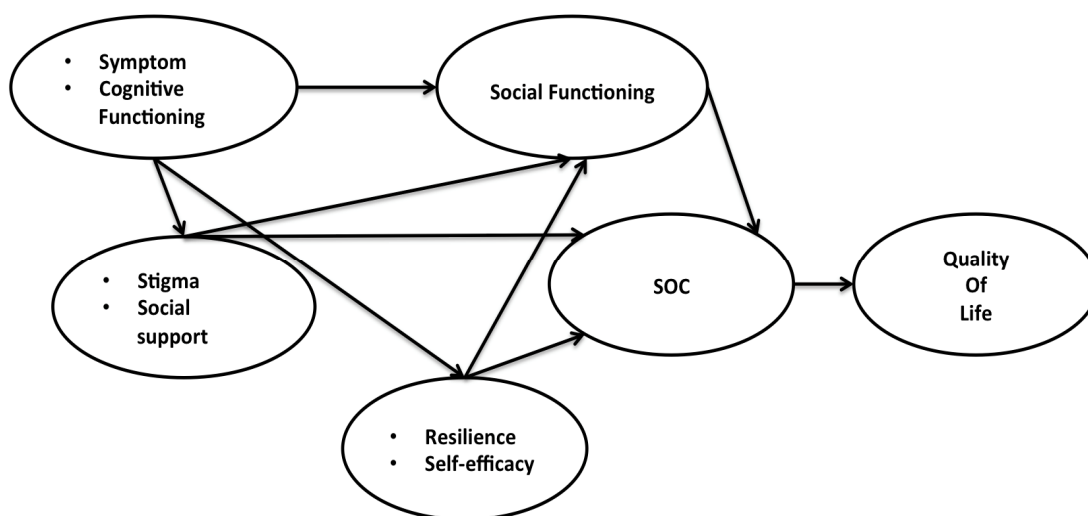


Figure 2.1 *The ICF Model as Conceptualized for the Current Study*

### Demographic Predictors of Sense of Community

Demographics have been implicated in affecting the level of SOC among persons with psychiatric disabilities (Yanos, Stefanic, & Tsemberis, 2011). Demographic factors that may be predictive of SOC include age onset, psychiatric diagnosis, housing, employment status, support/treatment received, and Social Security Administration (SSA) beneficiary status.

**Age onset.** Studies about the role of age onset of mental illness on SOC are still unclear which is mentioned having negative impact on persons who are seeking education and

employment (Collins & Mowbray, 2005). Age is also studied in relation to SOC, resulting in some inconsistent findings (e.g., Hill, 1996; Prezza et al., 2001). For persons with psychiatric disabilities, a study compared the SOC between persons with and without schizophrenia showed that older adults with schizophrenia had a lower SOC (Yanos et al., 2011).

**Psychiatric diagnosis.** Psychiatric diagnosis is not consistently found to be a significant predictor in studies about SOC (e.g., Townley & Kloos, 2011), since psychiatric diagnoses may not be as important as symptoms and actual functioning. Other researchers mentioned the serious challenges persons with psychiatric disabilities tend to face in experiencing community life (e.g., Baumann, 2007; Wong & Solomon, 2010). Persons with psychiatric diagnoses are often reported having lower interest in functioning in social activities, and they are more likely to experience discomfort in community life (e.g., Corin, 1990; Rossi, Arduini, & Stratta, 2000). Among studies of psychiatric diagnosis and vocational outcomes, there are still conflicting findings about diagnosis and its association with employment (McDonald-Wilson et al., 2001).

**Housing.** There are also conflicting results on the association between types of housing and SOC. Some studies (e.g., Townley & Kloos, 2009; Cummins & Lau, 2003) show that persons with psychiatric disabilities can have a greater SOC if they live in congregated housing sites, where they live exclusively with others with similar conditions. This is likely due to the shared experience of having psychiatric disabilities, which further increases the sense of belonging and connections among those persons. However, other researchers believe that congregate housing will isolate those persons from interactions with persons without disabilities as well as the broader and “normalized” community experience (Aubry & Myner, 1996; Walker & Seasons, 2002; Wong & Solomon, 2002).

**Employment status.** Employment is viewed as essential in psychiatric rehabilitation. For persons with psychiatric disabilities, employment has been recognized as a “daily structure, a reason to get out of bed in the morning, an identity, and an extended social network” (Tschopp & Frain, 2009, p. 378). Employment not only provides a source of income, but also provides opportunities for individuals to experience community life by interacting with coworkers and involving in workplace activities. Employment status can also be representative of a person’s overall functioning in the areas of social, cognitive, and emotional activities (MacDonald-Wilson, Rogers, & Massaro, 2003).

**Support/treatment received.** Since the passing of the Community Center Act in 1963, communities and states have been encouraged to offer comprehensive treatment and support for persons with psychiatric disabilities, such as medical treatment, counseling, and employment services (Petrila & Levin, 1996). Based on the mission of psychiatric rehabilitation, symptom management and functioning promotion are two critical issues that need to be focused on. As a result, accessible and effective support and treatment aiming to target those needs have been recognized as “imperative” in facilitating community integration and in the overall recovery of persons with psychiatric disabilities (Ware et al., 2007). However, it is shown that 40% of persons with psychiatric disabilities whose needs have not been met yet. In addition, the stigma issue still prevents the support and treatment received by the population (Tschopp & Frain, 2009). For instance, some people may not be willing to receive the mental health treatment due to the fear of being discriminated against.

**SSA beneficiary status.** SSA beneficiary status has been used as a proxy of household income in the current study. Persons who are low-income have been considered to be more likely to have a lower level of SOC (Brodsky et al., 1999). Those people may be more often living in



unprotected and unorganized neighborhoods, and they have less resources and social activities. Besides, it has been estimated that 85% of persons with psychiatric disabilities are unemployed (Ackerman & McReynolds, 2005). Due to the high rate of unemployment, they are more likely to be in an economically disadvantaged situation. However, other studies also argue that in those resource-poor communities, people can still develop a positive SOC if they are supportive and protective of each other.

### **Functioning Predictors of Sense of Community**

**Symptom severity.** Psychiatric symptoms (e.g., hallucination, delusion, depression, and mania) can cause negative impacts on a person's multiple aspects of life, such as reduced self-esteem, self-efficacy (Corrigan, Watson, & Leah, 2006), vocational skills and performance (Anthony, Rogers, Cohen, & Davis, 1995), independence, and social acceptance; they can also be strong predictors of overall life satisfaction (Corrigan, 2003; Yanos, Rosenfield, & Horwitz, 2001) and quality of life (Eack, Newhill, Anderson, & Rotondi, 2007). Previous studies have suggested that people with more severe psychiatric symptoms are more likely to have problematic behavioral presentations, which can be a barrier to achieve community acceptance (Wong, Metzendorf, & Min, 2006) and to have an overall positive community experience (e.g., Aubry et al., 1995). Based on the research findings among a sample of 345 community residents, people with higher symptom severity, such as having more "conspicuous symptoms," experienced more difficulties in having close social interactions and were more likely to encounter stigmatized social attitudes and become socially marginalized, which negatively impacted their community experiences (Aubry et al., 1995; Ertugrul & Ulug, 2003). The severe symptoms experienced by people with psychiatric disabilities can also lead them to having negative self-perceptions, and internalized self-stigma, which may cause damaging impacts on a

person's overall emotional state (Lysaker, Davis, Warman, Strasburger, & Beattie, 2006).

**Cognitive functioning.** It has been recognized that increasing the areas of functioning that are more seriously affected by psychiatric disabilities (i.e., social functioning, emotional functioning, and cognitive functioning) is the key to promoting persons with psychiatric disabilities' health conditions as well as community integration (e.g., Anthony, 1993; McReynolds & Garske, 2002; & Peterson, 2005). It is noted that persons with psychiatric disabilities are more likely to have impaired cognitive functioning in the areas, such as "attention, concentration, psychomotor speed, memory, executive functions, and social cognition," which can negatively impact individuals' psychosocial adjustment in work, school, interpersonal relationships, and independent living, as well as the ability to benefit from rehabilitation services (McGurk, Eack, Kurtz, & Mueser, 2012). Other meta-analysis literatures have also found strong associations among memory, executive functioning and work capacity, social participation, and independent living (MacDonald-Wilson et al., 2003). The current study specifically focused on cognitive functioning due to the increasing research attention about it, while also studying the general functioning of persons with psychiatric disabilities (MacDonald-Wilson et al., 2003).

**Implication.** Psychiatric symptoms and cognitive functioning deficits can have a lot of negative impact on persons with psychiatric disabilities. When promoting SOC, symptom severity reduction as well as cognitive functioning training should be emphasized. Hence, cognitive rehabilitation strategies have been recommended, such as coping with cognitive demands, improving memory, and cognitive flexibility (Tschopp & Frain, 2009).

#### **Activity Predictor of Sense of Community**

**Social functioning.** Social functioning is defined as "the level at which an individual functions in his or her social context, such function ranging from self-preservation and basic

living skills to the relationship with others in society” (Song & Singer, 2001, p. 37). Social functioning covers essential dimensions of daily life, such as “work, hobbies, shopping, cooking, cleaning” and other independent living activities and social interactions (Yanos, Feltom, Tsemberis, & Frye, 2007, p. 704). However, persons with psychiatric disabilities often experience social skills deficits, which have been mentioned as negatively affecting social community integration. Importantly, lower social integration can potentially impact the SOC and subjective well-being when persons with psychiatric disabilities have lower social functioning, such as lack of abilities to make social contacts and have interactions with people in the community (Aubry & Myner, 1996).

**Implication.** SOC is an interactive process between the individual and the community this person identifies with. Social functioning can be viewed as a tool that facilitates the connections between the person and the environment, which is beneficial for promoting the good community experiences of persons with psychiatric disabilities.

### **Personal Predictors of Sense of Community**

**Self-efficacy.** Self-efficacy refers to self-appraisals of how well they can “execute courses of action required to deal with prospective situation,” by utilizing their cognitive, social and behavioral sub-skills in different circumstances (Bandura, 1982, p. 122). Self-efficacy beliefs are the judgments regarding the persons’ perceptions of their capacities, rather than their actual capacities. Perceptions of self-efficacy is associated with the actions they want to take, efforts they are willing to make, and their reactions to things such as stress and decision making (1982). Researchers note that the constructions of self-efficacy beliefs in one specific circumstance can be facilitative to reflect those beliefs in other related situations (Giunta et al., 2010). In specific, when persons with psychiatric disabilities perceive their capabilities as able to

control psychiatric symptoms, they are more likely to take active efforts and to adopt positive coping behaviors, such as attending treatments and taking medications (Sirey, Bruce, Alexopoulos, Perlick, Friedman, & Meyers, 2001). More importantly, these self-efficacy beliefs can be constructed in other life domains, such as building interpersonal relationships, emotional understandings, and making attachments in social circumstances (Giunta et al., 2010). It has been noted that with the decreased self-efficacy, persons with psychiatric disabilities are less likely to take opportunities or control in making self-determinations and life choices in social situations, which would further result in distressing emotions such as depression and anxiety (Vauth, Kleim, Wirtz & Corrigan, 2007). Self-efficacy has been consistently noted as a positive and motivational psychosocial predictors of how well persons perform endeavors through actively engaging in coping behaviors and skills development, so as to meet the demands for achieving desired goals (e.g., Amir, Roziner, Knoll, Neufeld, 1999; Bandura, 2001).

Regarding the importance of promoting self-efficacy, it is reasonable to believe that when persons with psychiatric disabilities view themselves positively as competent in social interactions and in making connections, they are more likely to experience a better SOC. In addition, empathetic ability has been recognized as important in the development of things such as “affective bonds, understanding, and caring actions between people” (Giunta et al., 2010), which are important components of SOC. A persons’ self-efficacy beliefs in their empathic abilities become beneficial, since their perceptions about their abilities in sensitively experiencing and appropriately responding to other people’s feelings and needs are crucial to building connections in social situations (Caprara & Steca, 2005). Taken together, self-efficacy in the current study was measured in terms of social self-efficacy and empathic self-efficacy.

**Resilience.** Resilience can be defined in many ways, such as the “ability to bounce back or recover from stress, to adapt to stressful circumstances, not to become ill despite significant adversity, and to function above the norm in spite of stress or adversity” (Smith, Dalen, Wiggins, Tooley, Christopher, & Bernard, 2008). Other researchers identify it as “the ability to flourish in the face of adversity”; as “an internal motivational force that drives each individual to seek wisdom, self-actualization, altruism, and inner spiritual peace” (White, Driver, & Warren, 2008); and as “a dynamic process wherein individuals display positive adaption despite experiences of significant adversity or trauma” (Campbell-Sills, Cohan, & Stein, 2006). The current study operationalized resilience more as “returning to the previous level of functioning,” such as “bouncing back or recovery” (Carver, 1998).

Resilience has received increasing attention due to its relations to people’s reactions to life challenges, health conditions, well-being, and, more importantly, to overall quality of life across one’s life course (Windle, Bennett, & Noyes, 2011). Studies identify resilience and its negative association with depression, anxiety, and stress (Wagnild & Jeanette, 2009). Being consistent with the idea from positive psychology, resilience addresses those positive personal characteristics, such as strength, competence, optimism, flexibility, effective coping, and adaptations in making psychosocial adjustments to life’s changing or adverse situations (Campbell et al., 2006; Wagnild & Jeanette, 2009). Due to the emphasis on strength-based approaches in the field of rehabilitation, resilience gains more attention and is believed to facilitate persons with disabilities to achieve their goals in life (White et al., 2008). In particular, resilience is known as the “immunity” factor for persons with psychiatric disabilities in responding to stressful and challenging events (Davydov, Stewart, Ritchie, & Chaudieu, 2010). Promoting resilience would help persons to develop active, effective and adaptive problem solving skills reacting to negative

situations and making self-regulation to accept the adverse situation (Tusaie & Dyer, 2004; Yehuda, Flory, Southwick, & Charney, 2006). Persons with better resilience can be more likely to have positive community experience, when compared with others who allow those negative emotions to become a permanently emotional state.

**Implication.** Studying self-efficacy and resilience can provide new information about the highly diverse individual experiences of SOC among persons with psychiatric disabilities. Those factors can also help with understanding why psychiatric disabilities can have such a diverse impact on persons with different symptom severity. It further helps us to explain why an individual with more severe psychiatric symptoms can still experience a greater level of SOC.

### **Environmental Predictors of Sense of Community**

**Social support.** Social support refers to material and psychological resources that are provided to another person in order to help him/her cope with adverse situations (Cohen, 2004). Three types of social support are typically identified and categorized: (a) emotional support, such as feeling being loved, having someone to talk to, and having a sense of belonging; (b) instrumental support, such as material goods, resources, and services; and (c) informational support, such as guidance and feedback (Cohen, Memelstein, Kamarck, & Hoberman, 1985). Previous studies suggest that social support can be an effective buffer or mediator of life stress, which is associated with psychological well-being (Turner, 1981, p. 357). Social support is also relevant to community involvement (Gulcur et al., 2007), functioning and community living experiences, and reduced stigmatizing experiences. It is also positively associated with subjective well-being among people with psychiatric disabilities (Yanos et al., 2001). Social support can satisfy individuals' emotional needs and provide a sense of worth and assurance (Caron, Tempier, Mercier, & Leouffre, 1998). Among studies of people with chronic illness and

disabilities, social support is acknowledged with great significance, and it is mentioned as a strong factor in predicting adjustments to disabilities (Nelson, Lord, & Ochocka, 2001). Social support is also examined as critical factor for SOC of persons with psychiatric disabilities (Herman, Onaga, Pernice-Duca, Oh, & Ferguson, 2005).

**Stigma.** Chronic mental illness is identified as eighth among sixteen stigmatized conditions across sixteen countries (Ertugrul & Ulug, 2003). Stigma is associated with lack of social support and social interaction (e.g., Prince & Prince, 2002), negative effects on self-esteem (e.g., Corrigan, 2003), and lowered self-efficacy (e.g., Corrigan et al., 2006) and social functioning (Lysaker et al., 2006). Also, stigma can negatively impact individuals' overall social experiences. For example, many people may have reduced opportunities of working, and some may experience social isolation (e.g., Herman et al., 2005; Link, Mirotznik, & Cullen, 1991; Link & Phelan, 2001). According to Prince and Prince (2002), stigma is strongly related to SOC, and it is negatively associated with individuals' sense of belonging in the community in specific, especially when people lack adequate social support and have lower levels of psychosocial functioning (Gulcur et al., 2007).

**Implication.** Persons with psychiatric disabilities are more likely to experience stigmatized attitudes from society, which may further influence their willingness to have social contact and involvement in social activities. Particularly for those with more severe psychiatric symptoms and lower functioning, they are facing more challenges in building social support networks and receiving supporting resources. Given this, more education and outreach workshops should be provided to the public in order to clarify those misconceptions and stigmatized attitudes toward psychiatric disabilities. Meanwhile, sufficient social support that addresses each person's unique needs should be provided. Facilitating persons to build their own

social support network is indeed important.

### **Summary and Overall Implication**

Consistent with the mission and goal of psychiatric rehabilitation, facilitating persons with psychiatric disabilities to achieve a greater SOC has been addressed as beneficial (Wong & Solomon, 2002). SOC has been associated with factors from multidimensional perspectives but there is still a lack of comprehensive understanding of the significant facilitators and barriers of SOC for persons with psychiatric disabilities. Literature suggests the potential role of psychiatric symptom severity, cognitive functioning, social functioning, self-efficacy, resilience, social support, and stigma in predicting SOC. Understanding the contribution of each of these factors and their interaction effects can inform psychiatric rehabilitation programs of the essential service delivery in order to provide effective interventions for persons who are seeking community experience. In addition, the proposed model of SOC in this study provided future research with a skeleton to be based on, so that more in-depth understanding about SOC can be obtained in rehabilitation counseling.



## **CHAPTER THREE**

### **METHOD**

This chapter provides information about the research design, sampling method, selection criteria, study procedures, psychometric properties of selected instruments, and statistical analysis techniques.

#### **Research Design**

A quantitative descriptive design utilizing correlational analysis and multiple regression analyses were used to evaluate the ICF model as the theoretical framework in predicting sense of community (SOC) for persons with psychiatric disabilities. Specifically, hierarchical regression analysis was used to understand the unique contribution of each ICF construct (i.e., functioning, activity, personal and environmental factors) on SOC, as well as the interaction effects for persons with psychiatric disabilities.

#### **Procedures**

The study investigator completed the required Human Subjects Protection Training for the Michigan State University (MSU) Institutional Review Board (IRB) and obtained study approval from the IRB (see Appendix A). Following the IRB approval, the investigator identified and contacted mental health agencies providing services for persons with psychiatric disabilities. A brief introduction of the study background information and participating procedures were sent to those agencies in order to request for research collaboration. Upon agreement, invitation letter and flyer (See Appendices B and C) were distributed or sent electronically to the mailing lists or posted on website/newsletter of those identified agencies in Michigan and other states to recruit members as research participants. To promote the study, the investigator attended some regular meetings organized by affiliates of the NAMI and CMH. Participants of this study were recruited

from the Community Mental Health (CMH) agency, affiliates of the National Alliance of Mental Illness (NAMI), Peckham Inc. in Lansing, Resource Center for Persons with Disabilities (RCPD) at MSU, and Clubhouses in the state of Pennsylvania and Ohio.

Interested participants can choose to complete the survey either online (<http://www.qualtric.com/>) or in a paper format. All participants were asked to read and endorse the informed consent form (See Appendix D) before they proceed to complete the subsequent questionnaires, which included a demographic form (See Appendices F) and a set of psychosocial questionnaires (See Appendices G-O). In the informed consent form, the study's nature, rights of participants, and potential benefits and risks were introduced. The investigator's contact information, such as email and mailing address, were provided, in case they had any questions about participating in the research study. In addition, participants were given the contact information of the investigator's research advisor and the MSU IRB. All the personal and response information obtained from participants were kept confidential. Upon completion of the survey, each participant was asked to provide contact information in order to receive a \$10 gift card as compensation. For participants who preferred to use the online survey platform, the response page was designed as separated from the page where they provided their valid mailing and email addresses for receiving the electronic gift card. All the electronic data was stored in a computer secured through password identification. For those who used the paper format, they received physical gift card through mail and their mailing addresses were permanently deleted after the gift card was sent out. All the data collected from the paper format were stored in a locked file cabinet in the Office of Rehabilitation and Disability Studies. Each copy of the questionnaire was identified only by an assigned number to protect confidentiality. The only person had the access to the collected data were the research personnel associated with this

project. Participation in the study was completely voluntary. The average completion time for the survey was approximately 40-45 minutes.

## **Sample**

### **Participants**

The target participants in this study were persons with psychiatric disabilities. Mental health agencies (e.g., *Clubhouses*) known to provide different types of rehabilitation services for persons with psychiatric disabilities were examined. A purposive sample of 165 individuals with psychiatric disabilities attempted the online and hard copy survey. Of those surveys, 45 (27.3%) participants provided incomplete or invalid data. The final study sample included 120 (72.7%) participants.

Ten (8.3%) participants completed the hard copy survey and 110 (91.7%) participants used online survey. Eighty participants (66.7%) were from Michigan, and 40 (33.3%) were from other states including 14 from California, 2 from Illinois, 3 from New York, 16 from Ohio, and 5 from Pennsylvania. Fifty-two participants were recruited from diverse settings where they receive services, such as university disability service center and 68 participants were from other mental health agencies in different states, such as affiliates of the National Alliance of Mental Illness (NAMI) and *clubhouses*. This sample of participants covers a wide spectrum of severity levels of psychiatric conditions, including both severe mental illness (e.g., psychotic, schizophrenia) and less severe diagnoses (e.g., anxiety disorders) of psychiatric disabilities.

### **Inclusion Criteria**

To be eligible to participate in this study, participants need to be: (a) aged 18 or above; (b) diagnosed with a chronic and severe mental illness; and (c) have a 6<sup>th</sup> grade or above reading level. Participants who were currently hospitalized were excluded from this study.

## Sample Characteristics

Descriptive data for the participants are presented in Table 3.1. Participants ranged in age from 18 to 65 years ( $M = 33.38$ ,  $SD = 14.38$ ). The breakdown by gender was 81 (67.5%) females and 39 (32.5%) males. The majority of the participants described themselves as Caucasians (81.7%), 11.7% described themselves as African American, 6.7% described themselves as Hispanic/Latino, Asian American and as other/combined. A majority of the participants were either single (65.8%) or married (18.3%), 15.9% were others combined such as, divorced, separated, cohabiting and widowed. For employment status, 39.2% of the participants were employed, 14.2% were unemployed, 43.3% were students, and 3.3% were retired or volunteers. Among 67 participants provided the monthly earnings, the average earning per month was \$1931.98 ( $SD = 3154.69$   $Median = 960$ ) in U.S. dollars, and the average number of hours worked per week was 25.73 hours ( $SD = 12.03$   $Median = 25$ ). The educational breakdown of the participants was as follows: 5.0% either had completed middle school or had some high school education (have no diploma), 15.8% completed high school, 55.8% had some college education (have no degree) or associated degree, 18.3% completed college, and 5.0% had graduate degree (master or doctoral degree). About 41.7% of the participants received public insurance (Medicare: 11.7%, Medicaid: 15.9%, Medicare and Medicaid: 14.1%), 57.5% had private insurance either through their own employers (14.7%) or through their family's employers (42.8%), and 0.8% had no insurance. For SSA beneficiary, 26.7% of the participants received SSI and/or SSDI, however, 73.3% of the participants either did not have cash benefits or did not know whether or not they received cash benefits.

## **Disability-Related Characteristics**

Participants' mean age at first time diagnosed with mental illness was 20.78 years ( $SD = 8.40$ ). Participants' primary diagnoses were psychotic/schizophrenia (12.5%), including psychotic disorders, schizophrenia and schizoaffective disorders; mood disorders (42.5%), including bipolar disorder and major depressive disorder, and anxiety disorders (45.0%). For the number of psychiatric medications, 25.9% were not taking any psychiatric medication, 41.7% of the participants were currently taking one to two types of psychiatric medication, 28.4% were taking three to four types, and 4.2% were taking five or more. 88.3% (106) of the participants received counseling related support, such as individual counseling, group counseling, and family counseling. A majority of the participants (97.5%) received service related support, such as support groups, psychological assessment, and employment services, while half of the participants (54.2%) received treatment related support, such as received inpatient psychiatric treatment before, had substance abuse treatment, and received physical treatment.

Table 3.1  
Participant Demographic and Disability Characteristic ( $N = 120$ )

Demographic Covariates	N (%)	Mean ( <i>SD</i> )
Age		33.38 (14.38)
Gender		
Men	39 (32.5%)	
Women	81 (67.5%)	
Race		
Caucasian American	98 (81.7%)	
African American	14 (11.7%)	
Hispanic/Asian/others	8 (6.7%)	
Marital status		
Single	79 (65.8%)	
Married	22 (18.3%)	
Others combined	19 (15.9%)	
Employment status		
Employed	47 (39.2%)	
Unemployed	17 (14.2%)	
Students	52 (43.3%)	
Retired/Volunteers	4 (3.3%)	
Average earnings per month		1931.98 (3154.69)
Average working hours per week		25.73 (12.03)

Table 3.1 (cont'd)

<b>Demographic Covariates</b>	<b>N (%)</b>	<b>Mean (SD)</b>
Education		
<high school	6 (5.0%)	
High school graduate	19 (15.8%)	
Some college/associated degree	67 (55.8%)	
Bachelor's degree	22 (18.3%)	
Master's degree or above	6 (5.0%)	
Cash benefits: SSI/SSDI		
SSI and/or SSDI	32 (26.7%)	
No/do not know	88 (73.3%)	
Health benefits:		
Medicare and/or Medicaid	50 (41.7%)	
Private Insurance	69 (57.5%)	
No insurance	1 (0.8%)	
<b>Disability characteristics</b>	<b>N (%)</b>	<b>Mean (SD)</b>
Age at onset		20.78 (8.40)
Psychiatric diagnosis		
Psychotic Schizophrenia	15 (12.5%)	
Mood disorders	51 (42.5%)	
Anxiety disorders	54 (45.0%)	
Numbers of medication		
Not taking any	31 (25.9%)	
1-2 type	50 (41.7%)	
3-4 types	34 (28.4%)	
5 or more types	5 (4.2%)	
Support/treatment received		
Counseling related	106 (88.3%)	
Service related	117 (97.5%)	
Treatment related	65 (54.2%)	

## **Instrumentation**

The dependent variable (DV) studied in this research project is sense of community (SOC). The independent variable (IV) is comprised of the four components in the ICF model: (1) *Functioning* (i.e., symptom severity and cognitive functioning); (2) *Activities* (i.e., social functioning); (3) *Personal factors* (i.e., resilience and self-efficacy); and (4) *Environmental factors* (i.e., stigma and social support).

### **Demographic Questionnaire**

In the demographic questionnaire (See Appendix F), general socio-demographic and psychiatric disability-related questions were developed in order to facilitate the understanding and generalization of the research findings. The general demographic items include: age, gender, race/ethnicity, education level, marital status, housing situation, and employment status. Other items, including age onset, psychiatric diagnoses, numbers of psychiatric medications currently taking, SSA beneficiary status, information about receiving health insurance, and support/treatment received.

Besides the developed demographic form, a series of instruments with well-documented reliability and validity were selected in order to measure the predicting variables of the four constructs (i.e., functioning, activity, personal factors, and environmental factors), and the outcome variable (i.e., SOC) represented in the ICF model. They are listed as follows:



Table 3.2  
Descriptive Statistics for Study Measures ( $N=120$ )

ICF Constructs	# of Items	Instruments	Resp. Range	Mean ( <i>SD</i> )	Cronbach's $\alpha$
Predictor Variables					
Functioning	Psychiatric symptom severity (9 items)	Symptom Checklist Short Version-9 (SCL-K-9)	1-5	25.06(8.02)	.859
	Cognitive functioning (21 items)	Subjective Scale to Investigate Cognition in Schizophrenia (SSTICS)	1-5	51.77(16.25)	.922
Activity	Social functioning (10 items)	Social Functioning Scale (SFS)	0-3	33.69(9.42)	.513
Personal Factor	Resilience (6 items)	Brief Resilience Scale (BRS)	1-5	2.71(0.79)	.780
	Self-efficacy (11 items)	Perceived Empathic Self-Efficacy Scale (PESE)	1-5	38.88(8.69)	.877
		Perceived Social Self-Efficacy Scale (PSSE)			
Environmental Factor	Perceived stigma (12 items)	Perceived Devaluation-Discrimination Measure (PDDM)	1-5	47.28(10.55)	.858
	Social support (15 items)	Personal Resource Questionnaire-2000 (PRQ-2000)	1-7	80.55(16.88)	.931
Participation	Sense of community (11 items)	Brief Sense of Community Index-Disability (BSCI-D)	1-5	36.86(6.97)	.780

## Instrumentation for Predictor Variables

**Functioning.** The *functioning* construct was conceptualized by factors of psychiatric symptom severity and cognitive functioning of persons with psychiatric disabilities. The *Symptom Checklist Short Version-9* (SCL-K-9; Klaghofer & Brahler, 2001) was used to measure psychiatric symptom severity; and the *Subjective Scale to Investigate Cognition in Schizophrenia* (SSTICS; Stip, Caron, Renaud, Pampoulova, & Lecomte, 2003) was the measure of cognitive functioning.

**Symptom severity.** The Symptom Checklist Short Version-9 (SCL-K-9), developed by Klaghofer and Brahler (2001), is a nine-item abbreviated version developed based on the *Symptom Check-List 90-Revised* (SCL-90-R). It is one of the most popular self-assessment questionnaires applied for screening interviews and symptom measurement in mental health studies, and it is a well-accepted measure of mental illness symptoms (Prinz et al., 2013). An item from each of the nine subscales of SCL-90-R was selected to form the nine-item SCL-K-9 (i.e., item 24, 28, 31, 34, 43, 57, 58, 75, 77) (Prinz et al., 2013). The nine subscales include: somatization (SOM), obsessive-compulsive (O-C), interpersonal sensitivity (INT), depression (DEP), anxiety (ANX), hostility (HOS), phobic anxiety (PHOB), paranoid ideation (PAR), and psychoticism (PSY). In this case, SCL-K-9 becomes the unidimensional measure of general symptom severity, and it can be used to assess a diverse range of psychiatric symptoms in both outpatient and inpatient settings for heterogeneous samples (Prinz et al., 2013). Individuals was asked to rate the degree to which they feel distressed/bothered by each statement (e.g., How much were you distressed by temper outbursts that you could not control?) on a 5-point Likert-type scale (1=not at all; 2=a little bit; 3=moderately; 4=quite a bit; and 5=extremely). Higher scores are indicative of higher severity of psychiatric symptoms.

Previous study has showed a strong correlation ( $r = .93$ ) between SCL-K-9 and SCL-90-R's Global Severity Index (GSI) which is considered as a single overall indicator of the severity of psychiatric symptoms (Muller, Postert, Beyer, Furniss, & Achtergarde, 2010) and is most often used as the symptoms/distress index in mental health studies (Bonicatto, Dew, Soria, & Seghezze, 1997). In addition, the psychometric properties of SCL-K-9 are noted with reported internal consistency reliability coefficient (i.e., Cronbach's alpha) as  $\alpha = .80$  based on a sample of 100 females with mental illness. The validity was assessed by its having a high correlation with SCL-90-R ( $r = .90$ ) (Muller et al., 2010). In another study of 2727 patients with affective disorders, SCL-K-9 has been reported with Cronbach's alpha of .84 and the correlation between SCL-K-9 and SCL-90-R was found to be  $r = .69, p < .01$  (Prinz et al., 2013). The internal consistency estimate was found the sample in the present study with a Cronbach's alpha of .859.

***Cognitive functioning.*** Cognitive functioning was measured by using the Subjective Scale to Investigate Cognition in Schizophrenia (SSTICS; Stip et al., 2003), which is a 21-item self-reported questionnaire designed to measure subjective complaints about the cognitive dysfunctions (i.e., memory, attention, executive functions, and praxia) that can impair persons with schizophrenia and other mental illnesses in daily life. Individuals were asked to rate their level of agreement of each item on a 5-point Likert-type scale (0=Never; 1=Rarely; 2=Sometimes; 3=Often; 4=Very Often). Higher scores are indicative to higher cognitive dysfunctions. Sample items for each cognitive area include: "Do you have difficulty memorizing things, such as a grocery list or a list of names?" (Memory); "Are you absent-minded or up in the clouds? For example, you lose your train of thoughts in a conversation because you are distracted or you have a hard time focusing on what you are reading?" (Attention); "Do you have difficulty planning out your activities as easily as you used to? For example, charting an itinerary for

getting someplace, making a budget for the month, preparing meals, or making time for laundry.” (Executive functioning); and “Do you have difficulty finding your words, forming sentences, understanding the meaning of words, pronouncing words, or naming objects?” (Praxia). In the current study, some words in item 10 have been changed to make it more applicable to this study context. Specifically, “Prime Minister of Canada” has been replaced by “President.”

The Cronbach’s alpha has been reported as .86, based on a study of 114 French-speaking participants in Montreal with schizophrenia, schizophreniform disorder or schizoaffective disorder. The test-retest reliability was assessed as  $r = .82$  among 78 participants, over an average of 11 days. For validity, the SSTICS total score was reported to be positively correlated ( $r = .23$ ) with the negative symptoms in the Positive and Negative Syndrome Scale (PANSS) and negatively correlated ( $r = -.18$ ) with insight (Stip et al., 2003). The internal consistency estimate was found the sample in the present study with a Cronbach’s alpha of .922.

**Activity.** *Activity* was conceptualized by the factor of social functioning, which is measured by the *Social Functioning Scale* (SFS; Birchwood, Smith, Cochrane, Wetton, & Copestake, 1990).

**Social functioning.** The *Social Functioning Scale* (SFS) was developed by Birchwood and colleagues (1990) to address the psychosocial functioning areas that are important to the community experience outcomes for persons with schizophrenia. It is a 79-item instrument that covers seven highly correlated domains of persons’ social functioning: social engagement/withdrawal (e.g., time spent by himself/herself and social avoidance); interpersonal behavior (e.g., communication with others and number of friends); pro-social activities (e.g., engaging in social activities); recreation (e.g., engaging in common hobbies and interests); independence-competence (e.g., abilities of having independent living skills); independence-

performance (e.g., using independent living skills); and employment/occupation (e.g., engagement in productive employment).

In the current study, only ten items from both the social engagement/withdrawal dimension and the interpersonal behavior dimension were selected to indicate the social functioning level, since these two dimensions are more relevant to SOC as indicated by the literatures (e.g., Yanos et al., 2001). Individuals were asked questions regarding abilities and performance in *social engagement/withdrawal*, such as “What time do you get up each day?” and “How often will you start a conversation at home?” and in *interpersonal behaviors*, such as “Have you had any arguments with friends, relatives or neighbors recently?” and “How easy or difficult do you find talking to people at the moment?” The total scores are the summation of all items, with higher scores indicating higher social functioning.

The psychometric properties have been tested based on a sample of 334 participants with schizophrenia. The Cronbach’s alpha was reported as .71. The reliability of the social engagement/withdrawal and the interpersonal behavior subscales are .72 and .71, respectively. For validity, a sample of 334 persons with schizophrenia was compared with 100 persons without schizophrenia in terms of employment and social interaction and were shown with high degree of discriminative validity (Birchwood et al., 1990). The internal consistency estimate was found the sample in the present study with a Cronbach’s alpha of .513.

**Personal factors.** The personal factors represented in the ICF model were conceptualized by using the variables of resilience and self-efficacy. The *Brief Resilience Scale* (BRS; Smith et al., 2008) was used to measure resilience. The *Perceived Empathic Self-Efficacy Scale* (PESE; Bandura, Caparara, Barbaranelli, Gerbino, & Pastorelli, 2003), and the *Perceived Social Self-*

*Efficacy Scale* (PSSE; Di Giunta, Eisenberg, Kupfer, Steca, Tramontano, & Caprara, 2010) was used as measures of self-efficacy.

**Resilience.** The Brief Resilience Scale (BRS), developed by Smith and colleagues (2008), was used for examining persons' ability to bounce back or recover from stress. It is a six-item measure with three items having reverse coding. Individuals are asked to rate their level of agreement on each statement (e.g., "I have a hard time making it through stressful events.") on a 5-point Likert type scale (1=strongly disagree; 2=disagree; 3=neutral; 4=agree; and 5=strongly agree). The total score was computed, with higher scores indicating a higher level of resilience.

The Cronbach's alpha was reported ranging from  $\alpha=.84-.91$ . The test-retest reliability was reported ranging from  $r = .62-.69$ . The validity was assessed by testing its correlations with factors in other measures, such as optimism factor in personality measure ( $r = .45-.69$ ), and social support factor in social relationship measure ( $r = .27-.40$ ) (Smith et al., 2008). The internal consistency estimate was found the sample in the present study with a Cronbach's alpha of .780.

**Self-efficacy.** The Perceived Empathic Self-Efficacy Scale (PESE) was used to assess person's self-efficacy in their empathetic capabilities of experiencing and responding to other people's emotions and needs (Di Giunta et al., 2010). The original PESE is a 12-item scale developed by Bandura, Caparara, Barbaranelli, Gerbino, and Pastorelli (2003). The Cronbach's alpha in a sample of older adolescents as .89. After being subjected to a preliminary principle axis factoring analysis by Di Giunta and colleagues (2010), the six items with a loading below .40 were dropped. According to a sample of Italian young adults, the correlation between the 12-item PESE and the 6-item reduced PESE was shown as strong ( $r = .95$ ). The 6-item scale was also tested among college students across three different countries (i.e., United States, Italy, and Bolivia). Individuals were asked to rate their level of agreement on each statements,

beginning with “How well can you” (e.g., recognize when a person is inhibited by fear?), on a 5-point Likert type scale (1=not well at all; 2=slightly well; 3=moderately well; 4=well; and 5=very well). Higher scores are indicative of higher empathetic capability.

Also, the Perceived Social Self-Efficacy Scale (PSSE) was used to measure persons’ beliefs in their social capabilities of managing and engaging in interpersonal relationships. The PSSE is a 5-item scale also developed by Di Giunta and colleagues (2010). Similarly, the PSSE asks individuals to rate their level of agreement on each statement beginning with “How well can you” (e.g., work or study well with others?), on a 5-point Likert type scale (1=not well at all; 2=slightly well; 3=moderately well; 4=well; and 5=very well). Higher scores are indicative of higher self-efficacy in the social aspects.

In the meantime, both PESE and PSSE are noted as having good psychometric properties across the three study samples in Italian, the United States and Bolivian, with reported Cronbach’s alphas of .78 and .69; .80 and .76; and .81 and .66, respectively. The construct validity was assessed based on the Italian sample by examining the relations of PESE and PSSE to self-esteem, psychological well-being and coping. The author found that both PESE and PSSE were positively related to self-esteem ( $r = .12$  and  $r = .33$ , respectively), psychological well-being ( $r = .23$  and  $r = .44$ , respectively) and active coping ( $r = .22$  and  $r = .31$ , respectively) (Di Giunta et al., 2010). In addition, the results indicated that PSSE was more highly correlated with energy/extraversion ( $r = .57$ ) than with the PESE ( $r = .35$ ); and PESE was more highly correlated with empathy ( $r = .53$ ) than with the PSSE ( $r = .35$ ). In the current study, due to the associations of SOC with both social and empathetic self-efficacy, the scores of PESE and PSSE were added together, which was considered as the total score of self-efficacy. The internal consistency estimate was found the sample in the present study with a Cronbach’s alpha of .877.

**Environmental factors.** The construct of environmental factors in the ICF model was understood by using the variables of stigma and social support. The *Perceived Devaluation-Discrimination Measure* (PDDM; Link, 1987) was used to measure stigma. The *Personal Resource Questionnaire-2000* (PRQ-2000; Weinert, 2000) was used as a measure of social support.

**Stigma.** The Perceived Devaluation-Discrimination Measure (PDDM; Link, 1987) is a 12-item scale which was used to measure participants' perception of societal discrimination against persons with psychiatric disabilities. Individuals was asked to rate their level of agreement on each statement on a 6-point Likert type scale (i.e., 1=Strongly agree; 2=Agree; 3=Slightly agree; 4=Slightly disagree; 5=Disagree; 6=Strongly disagree). Half of the item scales are reverse coded with higher scores indicating higher level of perceived stigma. Sample items include: "Most people would willingly accept a person with mental health problems as a close friend," and "Most people would not hire a person with mental health problems to take care of their children, even if he or she had been well for some time."

The Cronbach's alpha of this measure has been reported ranging from  $\alpha=.78-.88$  (Krajewski, Burazeri, & Brand, 2013). For construct validity, it is supported given the creation of the PDDM scale (e.g., addressing employment and social network) was based on the theory of stigma among persons with severe mental (Wang, 2011). The internal consistency estimate was found the sample in the present study with a Cronbach's alpha of .858.

**Social support.** The Personal Resource Questionnaire-2000 (PRQ-2000) is the most recent version of the *Personal Resource Questionnaire* (PRQ) developed by Weinert in the late 1970s to measure perceived support (Weinert, 2003). It was designed based on Weiss's (1969, 1974) multilevel conceptualizations of perceived social support, which consists of



attachment/intimacy, social integration, nurturance, reassurance of worth, and availability of assistance. Under continuing psychometric evaluations and revisions, PRQ-2000 is based on the revisions of previous versions: PRQ-82 and PRQ-85. The PRQ-2000 has been revised as a 3-factor structure, 15-item measure of perceived support, which is the best in describing the five dimensions of the scale (Weinert, 2003). The measure asks individuals to rate their level of agreement with each statement (e.g., “There are people who are available if I need help over an extended period of time”) on a 7-point Likert-type scale (1=Strongly disagree; 2=Disagree; 3=Somewhat disagree; 4=Neutral; 5=Somewhat agree; 6=Agree; 7=Strongly agree). The total scores range from 15 to 105. Higher scores are indicative of higher levels of perceived social support (Wang, Lin, Tseng, & Change, 2009).

The psychometric properties of the PRQ-2000 were noted as adequate and stable. Specifically, previous studies tested the reliability estimates, and reported the Cronbach’s alpha ranging from .87 to .93, based on several samples of persons with chronic illnesses/conditions, such as heart diseases, cancer, and multiple sclerosis. Besides, the evidence of the construct provided by being compared with other mental health measures. For example, the correlation between PRQ-2000 and the Center for Epidemiologic Studies Depression Scale (CES-D), were reported as  $r = -.51$  and  $r = -.44$  for two subsamples, respectively (Weinert, 2003). The internal consistency estimate was found the sample in the present study with a Cronbach’s alpha of .931.

### **Instrumentation for Outcome Variable**

**Participation.** The construct of participation was conceptualized by using the factor of sense of community (SOC). The *Brief Sense of Community Index-Disability* (BSCI-D; Townley & Kloos, 2009) was used as a measure of SOC.

***Sense of community.*** The Brief Sense of Community Index-Disability (BSCI-D) was used to measure persons' level of SOC. The BSCI-D (Townley & Kloos, 2009) was created based on the instrument of Brief Sense of Community Index (BSCI), which was developed by Long and Perkins (2003). BSCI is an 8-item measure that includes three factors (i.e., social connection, mutual concerns, and community values) with Cronbach's alpha reported as  $\alpha=.78$ . The current BSCI-D was revised particularly for persons with mental illness and other disability groups. It is an 11-item measure consisting of eight items extracted from the original BSCI with three newly added items that assess the community acceptance of disability. Individuals were asked to rate their level of agreement on each statement (e.g., "I can recognize most of the people who live in my neighborhood") on a 5-point Likert type scale (i.e., 1=Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly agree), with 5 items having the reverse coding, such as: "Very few of my neighbors know me." The total scores is indicative of overall level of SOC, with higher scores showing a greater SOC (Townley & Kloos, 2009). In this study, the term "neighbors" and "neighborhood" have been changed to "community," to better represent both geographical and relational aspects of the community. According to the study sample of 424 persons with mental illness, Cronbach's alphas were calculated for each subscale—social connections (.75), mutual concerns (.73), community values (.61), and community acceptance (.83). The validity was also assessed by evaluating the unique contribution of the new community acceptance scale to the outcomes measured in that study (i.e., psychiatric distress, loneliness/isolation, neighbor relations, and adaptive functioning). The significant beta weights were reported as -.32, -.19, .26, and .15, respectively, which provide further evidence of using the community acceptance scale in addition to the other three existing scales in BSCI (Townley

& Kloos, 2009). The internal consistency estimate was found the sample in the present study with a Cronbach's alpha of .780.

### **Data Analysis**

The Statistical Package for Social Sciences (SPSS) 20.0 for Mac was used to manage the raw data and to perform all the data analyses. Specifically, descriptive statistics was computed for all the variables in this study in order to examine the shapes of the distributions (normal, skewness, kurtosis), the central tendencies (mean, median, mode), and the dispersions (range, variance, standard deviation). For demographic factors and all the other factors that are being studied, frequencies, percentages, means, and standard deviations were used to represent the characteristics of those variables. In addition, preliminary screening procedures were reviewed in order to detect missing data (mean imputation), outliers (Mahalanobis distances), and multicollinearity. To perform the multiple regression analysis, the normality, linearity, and homoscedasticity of all the variables were examined, in order to test the assumptions of regression analyses. The coefficient alphas were used to estimate the internal consistency of scores on each measure used. To summarize, all the assumptions based on the preliminary analyses were met before moving on to the correlation analyses and regression analysis for this study.

### **Sample Size**

*A priori* power analysis was conducted for a multiple regression analysis with 14 predictor variables, power = .80, and alpha= .05. G\*POWER (Erdfelder, Faul, & Buchner, 1996; Faul, Eedfelder, Buchner, & Lang, 2009), a software tool for general power analysis, yielded a sample size of 135 for a medium effect size ( $f^2 = .15$ ; Cohen, 1988). The 14 independent variables (IVs) include seven demographic characteristics (i.e., age, marital status, housing situations,

employment status, psychiatric diagnosis, support/treatment received, and SSA beneficiary status); two *Functioning* related characteristics (i.e., symptom severity and cognitive functioning); one dimension of *Activity* component (i.e., social functioning); two dimensions of *Personal factors* (i.e., resilience and self-efficacy); and two dimensions of *Environmental factors* (i.e., stigma and social support).

### **Correlation Analyses**

To answer research question #1, correlation analyses was conducted to examine the relationship of each unique variable proposed in the ICF model and the SOC. The results from the correlation analysis provided us a very basic understanding of the association (e.g., strength and direction) between each predictor and the outcome variables, without considering and controlling the effects from other predictors. Since multiple correlation analyses were conducted in the current study, to control the Type I errors, Bonferroni adjustment was applied.

### **Hierarchical Regression Analysis**

To answer research questions #2 and #3, multiple regression analyses (MRA), specifically hierarchical regression analysis (HRA), was performed as the major data analysis method to examine the overall variance that can be explained in SOC as the DV, by all ICF constructs as the IVs and their interaction effect. According to Aiken and West (2000), MRA has three common uses that are useful in rehabilitation research. First, MRA can be used to understand the relationship of IVs to the DV; second, it can provide the prediction of the outcome variable; and third, it can be particularly helpful for explanation or theory testing by using the actual observed data (Hoyt, Imel, & Chan, 2008). Hoyt et al. (2008) noted that the MRA could allow rehabilitation researchers to understand and evaluate the quality of research that can be most directly incorporated into rehabilitation practice. As a result, MRA is

appropriate for the current study to understand the relationship between each set of variables of the four ICF constructs and the outcome variable, as well as to examine the proposed model in predicting SOC.

HRA, also called *sequential regression*, is a useful strategy to study the contribution that each new set of predictors can make for the variance in DV with a predetermined order of the IVs being entered into the regression model to partial out preexisting effects of those variables. Researchers (Hoyt et al., 2008) have noted that HRA could be more advantageous when each construct being studied consists of more than one IV, instead of an individual IV. Specifically,  $\Delta R^2$  represents the combined contributions of the set of IVs in the same construct in explaining variance in the outcome variable, while the regression coefficient is the estimate of the unique contribution of each predictor in that set.

In this study, hierarchical regression analysis was employed to evaluate the ICF framework as a comprehensive model of SOC for persons with psychiatric disabilities, by examining the relationships between the ICF constructs and the SOC as an outcome. Specifically, five sets of IVs that are related to the ICF constructs were entered into the regression model in sequence, based on the suggested order of entry noted from the literature regarding ICF model and psychiatric rehabilitation. Upon entering each set of variables into the model, the unique contribution of that set of variables was assessed (Tabachnick & Fidell, 2001). The hierarchical regression model includes the following a priori specifications.

- In *step 1*, a set of seven demographic covariates were entered into the model, which included age, marital status, housing situations, employment status, psychiatric diagnosis, support/treatment received, and SSA beneficiary status. In this step, the effect of demographic covariates on one's SOC was determined.

- In *step 2*, two ICF variables related to *Functioning* were entered, which included symptom severity and cognitive functioning. In this step, the effect of symptom severity and cognitive functioning on one's SOC were determined, after controlling for the effect of the demographic covariates.
- In *step 3*, two ICF variables related to *Personal factors* were entered, which included resilience and self-efficacy. In this step, the effect of resilience and self-efficacy on one's SOC was determined, after controlling for the effect of the demographic covariates,, *Functioning* variables.
- In *step 4*, two ICF variables related to *Environmental factors* were entered, which included stigma and social support. In this step, the effect of stigma and social support on one's SOC was determined, after controlling for the effect of the demographic covariates, *Functioning* variables and the *Personal factors*.
- In *step 5*, one ICF variable related to *Activity* was entered, which include social functioning. In this step, the effect of social functioning on one's SOC was determined, after controlling for the effect of the demographic covariates, *Functioning* variables, the *Personal factors*, and *Environmental factors*.

## **CHAPTER FOUR**

### **RESULTS**

The purpose of this study was to evaluate the effectiveness of applying the ICF framework as the SOC model for persons with psychiatric disabilities. Multiple regression analysis was used to determine the amount of variance in SOC that can be accounted for by sets of predictors representing functioning, activity, personal factors and environmental factors of the ICF constructs. Specifically, correlation analysis was first conducted to examine the relationship between each predictor and SOC. In addition, hierarchical multiple regression analysis was conducted to identify predictors of ICF constructs for SOC. This chapter presents the results of the statistical analyses used to evaluate the four research questions and the follow-up analysis.

#### **Preliminary Data Screening and Analysis**

Data for all predictor and criterion variables were screened using SPSS 20.0 for accuracy, data entry, outliers, missing information and normality. Frequency tables were used to identify cases in which data had been entered in error. For missing data, two demographic variables were reported with some missing data but less than 5% of the missing values. Missing data was replaced by using mean imputation. The presence of multicollinearity was assessed by examining the variance influence factors (VIF) and tolerance. None of the VIF values exceed 10 for any variables in the analyses (range, 1.096 to 2.441), and none of the tolerance values was less than .10 (range, .410 to .913), which indicates no multicollinearity in the data and no large changes in coefficient would result from adding or deleting variables from the dataset. With the use of 10 predictors and  $p < .05$  criterion for Mahalanobis distance, no outliers were found from the multiple regression analysis, leaving the sample size of 120 intact. Histograms, scatter plots, and skewness and kurtosis statistics were used to assess normality, linearity and

homoscedasticity of all variables; the assumptions of multiple regression analysis were found to be met. A priori power analysis was conducted for the total  $R^2$  value for a multiple regression analysis with 14 predictor variables, power = .80, and alpha = .05. G\*Power 3 (Faul et al., 2009), a software tool for general power analysis, yielded a sample size of 135 for a medium effect size ( $f^2 = .15$ ; Cohen, 1988). With 14 predictors in the study, the sample size of 120 was slightly below the required sample size. A *post hoc* analysis was conducted to determine the achieved power of the study. With 14 predictor variables, a sample size of 120,  $R^2 = 57\%$ , a large effect size  $f^2 = 1.33$  (Cohen, 1988), and alpha = .05, the power = 1.00 was yielded, suggesting that the study power could still be maintained with the current sample size.

### **Descriptive Statistics**

The majority of the participants were Caucasians (81.7%). More than half of the participants (55.8%) had some college education or associated degree. In terms of employment status, 39.2% were employed and 43.3% were students. About one-fourth of them (26.7%) received SSDI and/or SSI. There are 45% of the participants had a primary diagnosis of anxiety disorder, 42.5% had mood disorders and 12.5% had psychotic schizophrenia. Most of the participants received service related support (97.5%; e.g., employment services, support group and psychological assessment) and counseling related support (88.3%; e.g., individual counseling, group counseling and family counseling) whereas half of the participants received treatment related support (54.2%; e.g., physical therapy, inpatient psychiatric treatment, and substance abuse treatment).

### **Correlation Analyses**

To answer research questions #1, correlational analyses were conducted to examine the relationships between the dependent variable (SOC) and the predictor variables. The correlations



among the dependent and predictor variables ranged from small to large, with Pearson Product-Moment correlation coefficients in the -.241 to .537 range. The correlation matrix for all variables is presented in Table 4.1.

SOC was found to be inversely related to symptom severity ( $r = -.413, p < .01$ ), cognitive functioning ( $r = -.241, p < .01$ ), and stigma ( $r = -.453, p < .01$ ). SOC was also found to be positively related to social functioning ( $r = .269, p < .01$ ), resilience ( $r = .248, p < .01$ ), self-efficacy ( $r = .445, p < .01$ ), and social support ( $r = .537, p < .01$ ).

Social support was found to be positively related to social functioning ( $r = .228, p < .05$ ), resilience ( $r = .194, p < .05$ ), and self-efficacy ( $r = .573, p < .01$ ) but inversely related to symptom severity ( $r = -.222, p < .01$ ) and stigma ( $r = -.205, p < .05$ ). Self-efficacy was found to be positively related to social functioning ( $r = .180, p < .05$ ) and resilience ( $r = .335, p < .01$ ) but inversely related to symptom severity ( $r = -.201, p < .05$ ). Resilience was found to be inversely related to symptom severity ( $r = -.439, p < .01$ ) and cognitive functioning ( $r = -.307, p < .01$ ). Social functioning was found to be inversely related to symptom severity ( $r = -.376, p < .01$ ) and cognitive functioning ( $r = -.241, p < .01$ ). Symptom severity was found to be positively related to cognitive functioning ( $r = .628, p < .01$ ). Stigma was found to be inversely related to resilience ( $r = -.191, p < .05$ ) and self-efficacy ( $r = -.213, p < .05$ ) but positively related to symptom severity ( $r = .226, p < .05$ ).

Table 4.1

Correlations, Means, and Standard Deviations for Variables Used in Hierarchical Regression Analyses

Variable	1	2	3	4	5	6	7	8
1. Sense of Community	1	--	--	--	--	--	--	--
2. Symptom Severity	-.413**	1	--	--	--	--	--	--
3. Cognitive Functioning	-.241**	.628*	1	--	--	--	--	--
4. Social Functioning	.269**	-.376**	-.241**	1	--	--	--	--
5. Resilience	.248**	-.439**	-.307**	.054	1	--	--	--
6. Self-efficacy	.445**	-.201*	-.097	.180*	.335**	1	--	--
7. Stigma	-.453**	.226*	-.026	-.013	-.191*	-.213*	1	--
8. Social Support	.537**	-.222*	-.095	.228*	.194*	.573**	-.205*	1
<i>Mean</i>	36.86	25.06	51.77	20.02	2.71	38.88	47.28	80.55
<i>SD</i>	6.97	8.02	16.25	3.85	0.79	8.69	10.55	16.88
<i>Min</i>	23.00	9.00	21.00	4.00	1.00	15.00	12.00	30.00
<i>Max</i>	55.00	42.00	86.00	27.00	5.00	55.00	72.00	105.00

Note: \*  $p \leq .05$  \*\*  $p \leq .01$

## Hierarchical Regression Analysis

To answer research questions # 2 and # 3, hierarchical multiple regression analysis (HRA) was conducted to answer the primary research questions with SOC as the dependent variable and five sets of the ICF variables entered as predictor variables in sequential steps: (a) demographic covariates, i.e., age, marital status, housing situations, employment status, SSA beneficiary status (SSDI and/or SSI), treatment-related support (e.g., physical treatment, inpatient psychiatric treatment and substance abuse treatment), and diagnosis (a primary diagnosis of anxiety disorders); (b) functioning, i.e., symptom severity and cognitive functioning; (c) personal factors, i.e., resilience, and self-efficacy; (d) environmental factors, i.e., stigma, and social support; and (e) activity, i.e., social functioning.

In the current study, the set of demographic covariates was entered into the regression model separate from the set of variables represent the *Personal factor* construct in the ICF model since when compared with personal factors (e.g., resilience and self-efficacy), the demographic characteristics (e.g., diagnosis) can be more stable and are less likely to change over time. Besides, for the three demographic covariates entered in the regression model, dummy variables were used.

HRA was used to examine the relative contributions of the five sets of ICF variables as predictors of SOC among persons with psychiatric disabilities. The results of the analysis, including values of change in  $R^2$  ( $\Delta R^2$ ), along with unstandardized regression coefficients (B), standard errors (SE B), and standardized coefficient ( $\beta$ ) for the predictor variables at each step and in the final model are presented in Table 4.2.

Table 4.2  
Hierarchical Multiple Regression Analysis for Prediction of SOC ( $N=120$ )

Variable	$R^2$	$\Delta R^2$	At Entry Into Model			Final Model		
			B	SE B	$\beta$	B	SE B	$\beta$
<b>Step 1</b>	.161	.161**						
Age			-.078	.056	-.162	-.020	.043	-.041
Marital Status			-.929	1.621	-.056	-.807	1.327	-.049
Housing Situations			-2.299	1.561	-.137	-.974	1.203	-.058
Employment Status			-.088	1.349	-.066	-.292	1.035	-.021
SSA Beneficiary			3.083	1.975	.175	-.580	1.549	-.033
Treatment Related			3.212	1.358	.227*	2.964	1.032	.209**
Support Diagnosis			-3.492	1.432	-.244*	-3.164	1.091	-.221**
<b>Step 2</b>	.281	.119**						
Symptom Severity			-.291	.097	-.335**	-.078	.088	-.090
Cognitive Functioning			-.030	.047	-.070	-.058	.038	-.136
<b>Step 3</b>	.429	.148**						
Resilience			-1.107	.800	-.125	-.836	.715	-.094
Self-efficacy			.351	.066	.438**	.168	.070	.209*
<b>Step 4</b>	.565	.136**						
Stigma			-.189	.047	-.286**	-.193	.047	-.292**
Social Support			.135	.034	.328**	.130	.034	.314**
<b>Step 5</b>	.570	.005						
Social Functioning			.142	.133	.078	.142	.133	.078

Note.  $F(14, 105) = 9.922, p < .001$  for full model;  $F(7, 112) = 3.076, p = .005$  for Step 1;  $F(2, 110) = 9.116, p < .001$  for Step 2;  $F(2, 108) = 14.017, p < .001$  for Step 3;  $F(2, 106) = 16.569, p < .001$  for Step 4;  $F(1, 105) = 1.143, p = .288$  for Step 5. \*  $p \leq .05$ , \*\*  $p \leq .01$ .

The results of the five steps of the regression analysis will be discussed step by step. When discussing each step, it should be noted that the first four steps of the regression model is not the fully specified final model and the results of each predictor variable could be different with the new predictor variables entered into the following steps. As a result, the findings of the current study would be interpreted based on the final regression model which has all the predictor variables included.

In the first step of the regression analysis, demographic covariates (i.e., age, marital status, housing situations, employment status, SSA beneficiary status, diagnosis, and treatment-related support) were entered. This set of demographic covariates accounted for a significant amount of the variance in SOC scores,  $R^2 = .161$ ,  $F(7, 112) = 3.076$ ,  $p = .005$ . An examination of the standardized partial regression coefficients found that both treatment-related support and diagnosis of anxiety disorder significantly contributed to the change in variance in SOC scores, with  $\beta = .227$ ,  $t = 2.364$ ,  $p = .020$ ; and with  $\beta = -.244$ ,  $t = -2.439$ ,  $p = .016$ , respectively. The positive relationship between treatment-related support and SOC scores indicates that those participants who have received treatment-related supporting services (i.e., physical treatment, inpatient psychiatric treatment and substance abuse treatment) were associated with greater SOC when compared with those who did not receive the services. In addition, a diagnosis of anxiety disorders was found to be negatively associated with SOC, indicating that for those who have never been diagnosed with anxiety disorders were associated with greater SOC when compared with those who had a diagnosis of anxiety disorders.

Functioning variables (i.e., symptom severity and cognitive functioning) were entered in the second step of the regression analysis. This set of variables accounted for a significant amount of the additional variance in SOC scores beyond that has been explained by the

demographic covariates entered in the first step,  $R^2 = .281$ ,  $F(2, 110) = 9.116$ ,  $p < .001$ . In this step, the demographic covariates treatment-related support and diagnosis of anxiety disorders remained significant contributor to the variance in SOC. However, the standardized beta for those two variables were both reduced from .227 to .199 and from -.244 to -.173 respectively. With the addition of functioning variables in the regression model, symptom severity was found to contribute significantly to the change in variance in SOC scores, with  $\beta = -.335$ ,  $t = -3.005$ ,  $p = .003$ . This result indicates that symptom severity was negatively associated with SOC and that each standard deviation unit increase on symptom severity was predicted to correspond to a .335 standard deviation unit decrease on SOC, when held demographic covariates and functioning variables in constant.

Personal factors (i.e., resilience and self-efficacy) were entered in the third step of the regression analysis. This set of variables accounted for a significant amount of the additional variance in SOC scores beyond that explained by the demographic covariates and functioning variables entered in previous steps,  $R^2 = .429$ ,  $F(2, 108) = 14.017$ ,  $p < .001$ . In this step, the standardized beta for treatment-related support was increased from .199 to .226 and the standardized beta for diagnosis of anxiety disorder was increased from -.173 to -.231. However, the standardized beta for symptom severity was decreased from -.335 to -.252. Despite the changes in standardized beta values, treatment-related support ( $\beta = .226$ ,  $t = 2.752$ ,  $p = .007$ ), diagnosis of anxiety disorders ( $\beta = -.231$ ,  $t = -2.680$ ,  $p = .009$ ) and symptom severity ( $\beta = -.252$ ,  $t = -2.345$ ,  $p = .021$ ) remained significant contributors to the variance in SOC scores.

Furthermore, with the addition of personal factors in the equation, self-efficacy was found to contribute significantly to the change in variance in SOC scores, with  $\beta = .438$ ,  $t = 5.290$ ,  $p < .001$ . The results indicate that self-efficacy was found positively associated with SOC,

suggesting that higher self-efficacy was associated with greater SOC. In particular, each standard deviated unit increase on self-efficacy was predicted to correspond to a .438 standard deviation unit increase on SOC, when held other variables in constant.

Environmental factors (i.e., stigma and social support) were entered in the fourth step of the regression analysis. This set of variables accounted for a significant amount of additional variance in SOC scores beyond that explained by the demographic covariates, functioning, and personal factor variables entered in previous steps,  $R^2 = .565$ ,  $F(2, 106) = 16.569$ ,  $p < .001$ . In this step, the standardized beta for treatment-related support was decreased from .226 to .215 and the standardized beta for diagnosis of anxiety disorders was decreased from -.231 to -.215. Despite the changes in standardized beta values, treatment-related support and diagnosis of anxiety disorders remained significant contributors to the variance in SOC scores,  $\beta = .215$ ,  $t = 2.966$ ,  $p = .004$ ; and  $\beta = -.215$ ,  $t = -2.834$ ,  $p = .006$ , respectively.

Furthermore, stigma and social support were found to significantly contribute to the change in variance in SOC scores, with  $\beta = -.286$ ,  $t = -4.046$ ,  $p < .001$ ; and  $\beta = .328$ ,  $t = 3.983$ ,  $p < .001$ , respectively. The results indicate that one standard deviation unit decrease on stigma corresponds to a .286 standard deviation unit increase on SOC whereas one standard deviation unit increase on social support corresponds to a .328 standard deviation unit increase on SOC, when held other variables in constant, suggesting that reduced stigma and increased social support can help with a greater SOC. With the addition of stigma and social support in the equation, symptom severity was no longer a significant contributor to the overall variance over and above the other variables entered into the analysis.

In the final step, *activity* variable, (i.e., social functioning) was entered into the regression analysis. The addition of social functioning did not account for a significant amount of additional

variance in SOC scores beyond that were explained by the demographic covariates, functioning variables, personal factors and environmental factors entered in the previous steps,  $R^2 = .570$ ,  $F(1, 105) = 1.143$ ,  $p = .288$ . According to this, social functioning variable was not a significant contributor in explaining the variance in SOC when holding all the other variables entered in constant,  $\beta = .078$ ,  $t = 1.069$ ,  $p = .288$ .

The final regression model accounted for 57.0% of the variance in SOC. According to Cohen's standards of the behavioral sciences, this is considered a large effect size (Cohen, 1988; 1992). Once all other factors were held in constant, diagnosis of anxiety disorders ( $\beta = -.221$ ), treatment-related support ( $\beta = .209$ ), self-efficacy ( $\beta = .209$ ), stigma ( $\beta = -.292$ ), and social support ( $\beta = .314$ ) were found to be significant predictors of SOC for persons with psychiatric disabilities. Diagnosis of anxiety disorders and stigma were negatively associated with SOC, whereas treatment-related support, self-efficacy and social support were positively associated with SOC. In addition, social support was found to be the strongest predictor in the model with its effect,  $r = .573$ ,  $\beta = .314$  and it was followed by stigma,  $r = -.453$ ,  $\beta = -.292$ , on SOC for persons with psychiatric disabilities.



## **CHAPTER FIVE**

### **SUMMARY, DISCUSSION, AND IMPLICATIONS**

This chapter provides a summary of the study findings, discussions and explanations for the major findings, and limitations of the study that might impact the interpretation and generalizability of results. Finally, implications and suggestions for clinical rehabilitation practice and future research are followed.

#### **Major Study Findings**

As one of the goals of psychiatric rehabilitation, providing persons with psychiatric disabilities with inclusive and integrated opportunities to participate in daily life experience within the communities based on their choices is essential and beneficial (Corrigan et al., 2005). SOC represents one crucial aspect of community integration experience, which could further impact the process of integration. The value of promoting SOC when facilitating community experience has been well supported (e.g., Garcia, Giuliani, & Wiesenfeld, 1999; Sonn, 2002). SOC could be particularly beneficial for persons with psychiatric disabilities (Chavis & Wadersman, 1990; Sonn & Fisher, 1996), since they are more likely to experience heterogeneous impact caused by psychiatric disabilities and complex psychosocial problems (Aubry et al., 1995; Prince & Gerber, 2005). Meanwhile, SOC has been defined as a multidimensional construct and understood as an interactive process involving the understanding of personal characteristics and environmental features (e.g., Chavis & Pretty, 1999). In this sense, when studying SOC among persons with psychiatric disabilities, a holistic understanding of those contributing factors from the person, the environment and their interactions becomes necessary.

Regarding this, the ICF model was applied as the theoretical framework to explore and understand the multidimensional factors of SOC among persons with psychiatric disabilities. The

ICF model emphasizes the actual social practices and full participation for persons with disabilities by integrating the effects of disabilities, functioning, and health from both the personal and environmental/societal perspectives (Peterson & Rosenthal, 2005). As a result, the application of using the ICF model can be helpful for developing systematic multidisciplinary research agenda and approach for persons with psychiatric disabilities.

The primary goal of this study was to evaluate a model of SOC for persons with psychiatric disabilities by using the ICF model as the conceptual framework. In particular, the relationships among the variables of all ICF constructs (i.e., functioning, activity, personal, and environmental factors) were examined as they apply to persons with psychiatric disabilities and their SOC. This study provides empirical and comprehensive explorations and explanations in studying SOC in the field of rehabilitation counseling.

By considering the multidimensional factors of SOC among persons with psychiatric disabilities, this is the first study to apply the ICF model in understanding this important but understudied construct in disability studies. Study findings present a holistic overview in understanding ways to facilitate better community life experience for psychiatric populations. Based on the research questions, study design, and data analysis procedures, several major results were concluded and are discussed in the following.

### **Relationships Between ICF Predictors and SOC**

The current study used correlational analysis to examine the relationships between the 14 predicting variables of SOC and one outcome variable based on the ICF model. Significant relationships between SOC and all the 14 predictors were found. Medium-to-large positive relationships were observed between SOC and two ICF predictors (self-efficacy and social

support); whereas, medium negative relationships were observed between SOC and two other ICF predictors (symptom severity and stigma).

Strong positive relationship was found between self-efficacy and social support, indicating that seeking adequate social support can be associated with more positive self-beliefs and self-appraisal. In addition, symptom severity was found to be inversely correlated with social functioning and resilience. Such findings are consistent with the literature which noted that persons with more severe psychiatric conditions tend to have more difficulties in performing essential dimensions of social-related activities (e.g., Aurbry & Myner, 1996) due to social skills deficit, poor experience in social interactions, lack of adequate social network, and other similar social participation obstacles (Tschopp & Frain, 2009). Also, negative association was found between resilience and mental health statuses such as depression and anxiety symptoms, which sheds light on the importance of resilience in helping an individual to adapt and adjust to adverse situations such as stress, challenges, illness, and discriminations, given its focuses on positive personal characteristics such as coping skills, flexibility and optimism (Campbell et al., 2006; Wagnild & Jeanette, 2009). Another notable finding was the relatively strong positive relationship between symptom severity and cognitive functioning. This finding is not surprising , as in individuals with more severe psychiatric symptom, their cognitive functioning such as memory, attention, and executive functions, tend to be more affected (e.g., Anthony, et al., 1995; McGurk, et al., 2012; Wong, et al., 2006).

### **Factors Contributing to SOC**

In the primary analyses, hierarchical multiple regression analysis (HRA) was used to investigate the contribution of each of the five sets of predictor variables from the ICF construct to SOC for persons with psychiatric disabilities. In specific, it was hypothesized that the five sets

of variables, i.e., demographic covariates, functioning variables, activity variable, personal factors and environmental factors, would significantly contribute to the prediction of SOC for persons with psychiatric disabilities. Overall, the final regression model accounted for 57% of the variance in SOC scores, which is considered a large effect size based on Cohen's standards (1988), and provides good support for the use of the ICF model in prediction of SOC for persons with psychiatric disabilities. Several variables were found to be significant independent predictors of SOC in the final model. Specifically, demographic covariates (diagnosis of anxiety disorders and treatment-related support), personal factors (self-efficacy), and environmental factors (stigma and social support) have accounted for a significant amount of the variance in SOC scores. However, no significant results were found in demographic covariates (age, marital status, housing situations, and employment status), functioning variables (symptom severity and cognitive functioning), and activity variable (social functioning).

**Discussion.** Evaluating a holistic model of SOC by using the ICF model as the conceptual framework posed some challenges. First, there are a large number of multidimensional factors that potentially impact persons with psychiatric disabilities and their SOC, which might be challenging to identify the relationship among all the potential predictors. Moreover, no empirical studies have used a theory-driven model to systematically and comprehensively understand predictors of SOC for psychiatric populations from a holistic perspective. SOC was usually studied simply by looking at the relationship among different individual variables (e.g., housing situation and neighborhood experience; Townley & Kloos, 2011) instead of being centrally understood in an interactive way given its complex nature. In addition, the various definitions of SOC, the inconsistent use of terminology, and the different sample characteristics could make it even more difficult to clearly identify all the relevant

predictors. As a result, continuous effort should be made to further explore and examine other potential variables that could be predictive in understanding SOC. Another challenge was about selecting appropriate instruments to measure the intended variables. In order not to exhaust or overwhelm the participants, more straightforward and less-worded measures were selected for the current study. For some of the predicting variables (e.g., social functioning), since no other better measures was found, only parts of that measure were used to keep the number of total items manageable. The partial inclusion of items may cause the risks of not being able to best capture the variable's characteristics and/or sensitively examine that predicting variable. Last but not least, as suggested by Chan et al. (2012), clearer distinction between the ICF *activity* and *participation* construct still need to be made. With a better clarification of the constructs, it would eventually help with the selection of variables and measures for the activity construct.

Despite the abovementioned challenges, the current study provided good evidence of using the structure of the ICF model in prediction of SOC for persons with psychiatric disabilities. Specifically, several ICF constructs, i.e., functioning, personal factors and environmental factors, were found to be significant predictors of SOC, although some variables were not found to be significant contributors. The various reasons for those are discussed in the following sections.

**Demographic characteristics.** The first step of the regression model consisted of demographic covariates, including age, marital status, housing situations, employment status, SSA beneficiary status, diagnosis (i.e., anxiety disorders), and treatment-related support (i.e., physical treatment, substance abuse treatment, and inpatient psychiatric treatment). The results indicated that demographic characteristics significantly accounted for 16.1% of the variance in SOC for this sample of participants with psychiatric disabilities. At the initial entry into the

model, treatment-related support and diagnosis of anxiety disorders independently accounted for the SOC variance over and above the other demographic characteristics, indicating that persons who have received treatment-related support are having higher SOC scores when compared with those who did not receive that support. When the following sets of predictors were entered into the model, although the contribution of treatment-related support and diagnosis of anxiety disorders to SOC was a little bit reduced, these predictors remained significant in the final regression model.

The findings of the significant contribution of treatment-related support are consistent with literatures, which noted that providing accessible and effective mental health treatment (Kessler et al., 2001), inpatient psychiatric treatment/hospitalization and substance abuse treatment (Anthony et al., 1995) would help persons with psychiatric disabilities to manage psychiatric symptoms, improve overall functioning and health condition, which would further facilitate the process of community integration and recovery.

Psychiatric diagnosis of anxiety disorders was also found as a significant predictor in explaining the variance in SOC in the final model. The current study finding indicated the benefits of managing the negative impact of anxiety disorders on SOC. Since SOC is a subjective and social experience and could be gained through the process of social interactions, if persons are having a lot of anxieties, they could be more likely to be overwhelmed, not interested or motivated in making social contacts and building connections within the community (NIMI, 2009). In this way, individuals would be less likely to have a positive community experience and high SOC. Besides, due to the impact of anxiety disorders, persons' acuteness of psychiatric symptoms and other psychosocial functioning might also be negatively impacted, based on the preliminary data analyses findings (see Table 4.1). However, such finding was different from

some previous studies (e.g., Townley & Kloos, 2011) that examined the predicting contribution of other types of diagnosis (e.g., psychotic disorder), which have showed the insignificant contribution of diagnosis to SOC. Continuous work still needs to be done to further clarify the impact of diagnosis and its association with SOC.

Overall, understanding the influence of psychiatric diagnosis on SOC posed some challenges, since their associations have been inadequately evaluated in previous studies so those findings were quite difficult to be generalized into current studies, due to the different ways researchers used to categorize and focus on psychiatric diagnosis based on their study sample characteristics (e.g., psychotic disorders vs. non-psychotic disorders). Also as noted, studies examining the contribution for diagnoses variables on SOC have been very limited. The current study used the recipient of SSI and/or SSDI benefits as a proxy of household income in order to evaluate whether or not the economically disadvantaged situation could impact SOC level. The study finding suggests resources-poor situations are not necessarily associated with low SOC.

**Functioning.** In the second step of the analysis, functioning variables—symptom severity and cognitive functioning— were entered into the regression equation. The results indicated that disability-related characteristics significantly accounted for an additional 11.9% of the variance in SOC beyond that explained by demographic characteristics.

When first entered into the regression model, symptom severity was a significant predictor to SOC, suggesting that increased symptom severity was related to lower SOC. This research finding is consistent with previous studies that have mentioned the negative impact of psychiatric symptoms on many essential community experiences, such as employment (MacDonald-Wilson, et al., 2001) and poor social contact (Anthony, et al., 1995). However, when the following steps of predictors were entered into the regression model, the contribution

of symptom severity was no longer significant, which was surprising given the medium-to-large significant relationship between symptom severity and SOC as shown in Table 4.1. To further understand this research finding, predictors of the following constructs were entered into the regression model one by one. One possible explanation of the insignificant contribution of symptom severity to SOC is likely due to the overlaps in explaining the variations in SOC among symptom severity and the following entered predictors. Particularly when the sets of personal and environmental predictors (i.e., self-efficacy, stigma and social support) were entered in the following steps, by controlling the effect from those variables, the unique contribution made by symptom severity to the variation of SOC was reduced and became insignificant. Besides this possible explanation, this result finding is also consistent with the philosophy of recovery, that the limitations caused by psychiatric disabilities is less impacting on attaining goals and community participation when they could be better facilitated in developing psychosocial skills, and when the environment can be more accepting, despite those barriers impacted by psychiatric symptoms (Corrigan, 2003).

The results of this set of variables also showed that cognitive functioning was not a significant independent predictor to SOC, although in the preliminary analyses, the correlation matrix (see Table 4.1) showed small to medium significant relationship of it with SOC. Cognitive functioning has been mentioned as important to performing daily tasks and could influence social participation (Twamley, et al., 2003). One explanation could be, even though persons with psychiatric disabilities are more likely to have impaired cognitive functioning (McGurk, et al., 2002), lower cognitive functioning might not necessarily lead to a lower SOC, since SOC is a subjective experience. The deficits in cognitive functioning and its negative impact could be remedied by other positive personal and environmental characteristics.



Another explanation could be due to the single focus of cognitive functioning variable in the current study. All aspects of functioning (e.g., emotional, cognitive, and social/interpersonal) have been noted as important (MacDonald-Wilson, et al., 2003). However, this study only selected cognitive functioning due to its more severe potential influence on persons' community living experiences (McGurk, et al., 2002). Future research should further explore all aspects of functioning level and their contributions to SOC. In addition, the selection of the measure could be another reason, since the measure used here is specifically designed for persons with schizophrenia. Some characteristics of the current sample of participants might not be best captured, since schizophrenia was not the major diagnosis for the sample of participants in this study. As a result, the SSCITS scale may not be sensitive enough to measure the cognitive functioning variable here.

Overall, the variables of functioning construct together play a significant role in the relationship between psychiatric disabilities and SOC. The results of this study filled the literature gap in systematically and empirically evaluating the contribution of symptom severity and cognitive functioning to SOC, given their impact on social experience in many important life domains for persons with psychiatric disabilities (Iyer et al., 2005). However, exploring and selecting disability-related characteristics were challenging due to the large numbers of psychiatric disability-related predictors as well as the lack of literature in studying the associations between specific disability-related predictors and SOC.

**Personal factors.** In the third step of the analysis, personal factors—resilience and self-efficacy—were entered into the regression model. This group of variables accounted for a significant amount of the additional variance in SOC (14.8%) over and above that already explained by demographic covariates and functioning variables. With the entering of this set of

variables into the equation, the independent contribution of symptom severity was no longer significant. Even though symptom severity did not remain significant in the final regression model, psychiatric diagnosis became significant predictor again and remained significant in the final model. Treatment-related support was still significant even though the independent contribution was reduced. Self-efficacy became a significant contributor, independently accounting for a significant amount of the variance in SOC over and above all the other variables entered into the model. This suggests that by enhancing persons' beliefs in their abilities in emotional understandings and building good interpersonal interactions, their SOC level would be promoted. Literatures of self-efficacy have also supported such research findings, that self-efficacy could be essential to promote self-confidence development and foster positive behavioral changes in making psychosocial adjustment and adaptations to diverse challenges in persons with psychiatric disabilities may need to face in everyday community life experience (Chou, Ditchman, Pruett, Chan, & Hunter, 2009).

Resilience has been noted as a positive facilitator and personal characteristic in making adjustment to stressful or challenging situations for persons with psychiatric disabilities to acquire, given the complex barriers they may need to encounter in community living (e.g., White et al., 2008). However, the current study findings show that it did not independently contribute to the variance in SOC over and above other factors, which is surprising given its significant correlation with SOC (see Table 4.1). One possible explanation is the diverse definitions of resilience available among literatures of resilience, which caused some difficulties or potential confusions in choosing the best definition for the current study. Although the definition of "bouncing back or recovering from stress" has been considered as the best way to represent one characteristics of *personal factors* construct in this study, the selection of this definition might

not be the best one to focus when predicting SOC. Regarding that, the selection of resilience definition could directly influence the choosing of the instrument in measuring the resilience variable. As a result, future research should continue to investigate the contribution of resilience in predicting SOC by looking into other definitions and appropriate measure for the variable.

Overall speaking, such study findings support that personal factors (i.e., resilience and self-efficacy) play a significant role in the relationship between SOC and persons with psychiatric disability. Most importantly, self-efficacy is considered as a powerful motivating tool for taking actions in achieving goals in daily life, and should be effectively developed among persons with psychiatric disabilities for better community living experience. Additionally, the highly diverse psychosocial factors impacting persons with psychiatric disabilities lead to some difficulties in defining and specifying personal variables in predicting SOC. Because of that, continuous research about resilience as well as other related psychosocial variables still need to be explored and clarified when understanding their associations with SOC.

**Environmental factors.** In the fourth step of the analysis, environmental characteristics—stigma and social support—were entered into the regression model. This set of variables accounted for a significant amount of additional variance in SOC (13.6%) over and above that already explained by demographic covariates, functioning variables, and personal factors. With the addition of this group of predictors, the independent contribution of treatment-related support, diagnosis and self-efficacy were reduced, even though they remained significant. In the preliminary analysis, the correlation matrix (see Table 4.1) showed medium to large correlations between SOC and stigma ( $r = -.453$ ), whereas the relationship between SOC and social support was positive and strong ( $r = .537$ ). Both stigma and social support independently

accounted for a significant amount of the variance in SOC, indicating that by decreasing stigma and increasing social support, persons with psychiatric disabilities could achieve greater SOC.

As expected, stigma was found to be a significant predictor to SOC. Consistent with literatures that stigma could negatively impact persons' sense of connection and belonging when integrating into community settings (e.g., Prince & Prince, 2002). Mentioned as the "second illness" related to persons with psychiatric disabilities, stigma has been always associated with different psychiatric conditions, which together would influence the reactions persons would receive from other people and the social environment (Vauth et al., 2007). As noted in previous study findings, with more severe psychiatric symptoms, it is more likely for those persons to experience higher level of stigmatized attitudes from others (Ertugrul & Ulug, 2004), which is also supported based on the preliminary analyses in the current study (see Table 4.1). When the perceived stigma is high, individuals tend to have noncompliance to treatment (e.g., Sirey et al., 2001), reduced functioning levels (Gulcur et al., 2007), negative community integration outcome (Ertugrul & Ulug, 2004), and poorer overall social experience (e.g., Herman et al., 2005; Link et al., 1991). Given all the potential negative impact caused by stigma, it becomes particularly beneficial to reduce persons' perceived stigmatized attitudes and experience.

In this study, social support also accounted for a unique amount of variance in SOC after controlling for the variance explained by all the other variables, which was consistent with previous study findings. Among the few empirical studies of SOC for persons with psychiatric disabilities, social support has been identified as a critical factor in promoting SOC level (Herman et al., 2005). Besides, social support could potentially buffer life distress and the negative impact of stigmatization (Turner, 1981). In this case, promoting social support could not only be beneficial for reaching a higher SOC level, but also be helpful with reducing or

mediating the effect caused by adverse social circumstances. In addition, as one of the most popular psychosocial construct, social support has been found related to many positive rehabilitation outcomes, such as a better quality of life (e.g., Corrigan & Phelan, 2004; Eack et al., 2007), subjective well-being (Yanos et al., 2001), and achieving recovery for persons with psychiatric disabilities (Chang, Heller, Pickett, & Chen, 2013).

Overall speaking, environmental factors (i.e., stigma and social support) are significant in understanding the variations in SOC levels. According to the biopsychosocial perspective, persons' actual functioning and health condition are more associated with psychosocial factors rather than disabilities alone. Improving positive environmental characteristics by reducing stigma and increasing social support would shed light on enhancing SOC.

**Activity.** In the final step, measure of activity construct of the ICF model—social functioning—was entered into the regression model. Social functioning accounted for 0.5% of the additional variance in SOC over and above that already explained by all previous sets of variables; however, the contribution of this set of variable was not significant. With the addition of the social functioning variable, the independent contributions of treatment-related support, self-efficacy, and social support were reduced, even though they remained significant. However, for other significant variables (i.e., diagnosis and stigma), both of their unique contributions were increased in the final model.

It was shown that the social functioning variable is not an individual variable in predicting SOC in this studying sample, which was quite surprising given the significant positive relationship ( $r = .269$ ) between social functioning and SOC based on the preliminary data analyses (see Table 4.1). Besides, social functioning has been considered as a very important facilitative tool for persons with psychiatric disabilities in making connections and building the

sense of belonging through community participation. Social functioning skills could be closely relevant to those essential skills that are greatly needed for individuals to function under social context both from a personal level, that impacts personal capabilities in performing community activities (e.g., basic living skills); and from an interpersonal level, that impacts social capabilities in social interactions (e.g., developing social relationships with others). Accordingly, social functioning could present the overall psychosocial characteristics of an individual in community living (Song & Singer, 2001). As a result, social functioning variable under the *activity* construct was entered at the last step into the regression equation, in order to measure how much variation in SOC could still be independently explained by holding everything else in constant. In this way, new information would be drawn to better support individuals to develop social skills based on the needs from both personal and social level at the same time.

The selection of social functioning measure could be the most possible explanation to the insignificant contribution of social functioning variable in explaining the SOC variations. The original Social Functioning Scale (SFS) included 79 items and measured 7 dimensions. In order to keep the survey length manageable, only 10 items from 2 dimensions were selected, which could cause the current measure to be less sensitive in measuring social functioning variable. Regarding this, future studies could select more items from SFS, or could find other instruments that with the appropriate instrument numbers to comprehensively capture the characteristics of this variable. Moreover, social functioning is such a broad variable covering many essential life domains. Continuous research can break social functioning variable into several aspects based on the theoretical conceptualization of social functioning. In that way, it would be better to evaluate its unique contribution to SOC. Additionally, due to the lack of clarity between the variables of

the two ICF constructs, *activity* and *participation*, when compared with other variables in the ICF model, it added some difficulties to find available reliable measures.

## **Overall Discussion**

Given the field of rehabilitation's increasing focus on understanding the experience of disabilities in community participation, comprehensively studying the person and environment interactions has gained long-standing emphasis (Chan et al., 2009; Dunn & Elliott, 2008). SOC, based on its definition and conceptualizations (McMillan & Chavis, 1986), could be viewed as an interactive process that involves the person, the environment and their interactions. More importantly, SOC is centered on persons' subjective experiences of this interactive process of community participation. In this case, the understanding of persons' SOC level should be based on how they feel about their community experience and should be understood beyond the types of communities (i.e., geographical communities, such as school, workplace, and neighborhood; and relational communities, such as shared common values, interests and characteristics) they participate in and identify themselves within. As a result, SOC is more related to persons' participation experience in those different community contexts rather than the specific community contexts themselves. Regardless how rehabilitation professionals and researchers would perceive those community settings, if the targeted individuals did not have the sense of belonging and connection, their SOC levels would not be high. Besides clarifying the understanding of SOC within diverse community contexts, it is equally important to elucidate the studying of SOC among persons with diverse severities of psychiatric conditions. For rehabilitation professionals and researchers, it is important to note that what really matters to SOC is how those persons with psychiatric disabilities view the impact of their psychiatric conditions on SOC rather than how professionals and researchers perceive the impact would be.

Based on the findings of the current study, in order to promote higher SOC, improving those identified significant predictors of SOC from both personal (e.g., anxiety management and self-efficacy promotion) and environmental (e.g., treatment adherence, stigma reduction, and social support provision) aspects would be beneficial. Furthermore, during the process of promoting those significant predictors, taking into account persons' subjective perceptions of the effect that those multidimensional predictors could have on their SOC would be more helpful to effectively expedite the process of experiencing and achieving higher levels of SOC.

### **Limitations**

Several limitations addressed in the following section should be carefully considered when interpreting and generalizing the results of this study.

First, this study used non-random convenience sampling method, which would impact the generalizability of the study findings. In particular, the majority of the participants were recruited in the state of Michigan and from those selected mental health agencies or support groups, such as the National Alliance on Mental Illness, Clubhouse programs, and the Resources Center for Persons with Disabilities at MSU. Selection bias could be caused due to the sources of recruiting agencies. Those persons who were not receiving any mental health services, or having no connections with those recruiting agencies, would have limited information or accessibility to participate in the current study. Therefore, the social interactions and community participation of participants in the current study might not be representative of the entire psychiatric population. Besides, the sample was composed predominantly of Caucasians who received at least high school/some college education. For example, 52 of the participants were students recruited from the university disability service center. Thus, the current study sample has limited representation of characteristics of persons from diverse ethnic backgrounds or holding lower education levels.



Moreover, the current study sample consisted of a wide spectrum of psychiatric diagnoses with the majority of the sample was composed of relatively less severe mental illness (i.e., mood disorders and anxiety disorders) as compared to other studies for psychiatric disability research. As a result, when generalizing the results of this study to other psychiatric groups with more severe mental illness, results should be interpreted with caution. Next, online survey format was used in this study which could also cause some biases. For example, persons' computer skills and accessibilities to Internet would only represent a unique group of persons with psychiatric disabilities (e.g., higher functioning or having more resources). Finally, the majority of the participants have mood disorders and anxiety disorders instead of schizophrenia or psychotic disorders. This could also cause some issues in generalizing the current study findings into psychiatric population with different types of diagnoses.

Second, the survey completions completely relied on self-reported data, which might lead to biases and inaccurate reporting. In particular, persons with psychiatric disabilities have been noted as more frequently to experience cognitive dysfunctions, which could cause them to provide inaccurate answers due to misunderstanding about the survey questions. Besides, the response quality for them could also be impacted by their mental health status at the moment of taking the survey. Next, the length of the survey could be another challenge for persons with psychiatric disabilities. With the efforts being made to reduce the number of survey questions, there were still 110 items in total, which would take around 45 minutes to complete. Participants with psychiatric disabilities might feel challenging in concentrating that length of time, the quality and response rate of the survey could thus be negatively impacted. Despite all the limitations, using self-reported data could be helpful in this study, given that SOC has been understood as a subjective experience. Meanwhile, it should be noted that it is hard to evaluate

the accuracy of the subjective response from each participant. For example, some persons might report their symptom severity as less severe; however, their symptom severity could be more severe from others' perspectives. In summary, it becomes difficult to define the degree to which study results made based on the self-reported data accurately represent the intended information about variables of ICF constructs. However, for those measures assessing subjective information, such as personal and environmental factors (i.e., stigma, social support, resilience and self-efficacy), the self-reported data would be appropriate.

Next, limitation was due to the reduction of social functioning measure in order to keep the length of the survey as manageable. Selecting part of the measure from the entire instrument may cause the risks of failing to sensitively assess social functioning variable. In addition, when determining the sample size appropriate for multiple regression analyses, an a priori power analysis was conducted for a medium effect size. The current study sample size was a little below the required minimal sample size but the study power can still be maintained with the current sample size. Despite that, it would still be better for future studies to increase the sample size since some predictors could possibly become significant with a larger sample size (e.g., symptom severity, resilience and social functioning).

Lastly, this study used correlational and regression analyses to understand the relationships between the predictor variables and the outcome variable. Using a cross-sectional design, the variables here could only be evaluated at a single point in time (MacCallum & Austin, 2000) and the directionality of the effects of causalities for the variables could not be determined. Since the variables were not manipulated on purpose, the associations between the dependent variable and the independent variables could not be considered as causal relationships.

## **Clinical Implications in Rehabilitation Counseling Practice**

Psychiatric disability is one of the most significant serious health problems that could lead to a growing number of persons each year to experience barriers and limitations in everyday experience (Ackerman & McReynold, 2005). The negative impact of psychiatric disabilities can be on every aspect of persons' daily lives. Those persons are more likely to have health-related or medical concerns, such as obesity and diabetes, than general populations (Viron & Stern, 2010); experiencing challenges in everyday functioning, such as difficulty concentrating, performing daily activities, and fatigue (Tschopp & Frain, 2009); facing various psychosocial issues, such as poor self-efficacy, deficits in interpersonal situations, small social network, and getting stigmatized attitudes in community living (Ackerman & McReynold, 2005; Corrigan et al., 1999). Furthermore, the negative impact could be highly diverse to each person, which would lead to greater difficulties in best understanding the complex needs from persons with psychiatric disabilities in achieving positive rehabilitation outcomes.

Given the multidimensional challenges and the heterogeneous impact that each person experiences, this study used the ICF model in comprehensively addressing the broad array of needs among persons with psychiatric disabilities in achieving better SOC outcome, this positive, and interactive and multidimensional (P x E) construct. The study findings extended the current literatures of SOC for persons with psychiatric disabilities in the field of rehabilitation counseling by taking a holistic approach. In particular, taking the ICF model as the conceptual framework, this study empirically examined the variables of SOC by considering the complex interaction effects among health conditions, functioning/disability-related characteristics, personal and environmental factors on SOC for persons with psychiatric disabilities (WHO, 2001). By evaluating a holistic model of SOC, the study findings would be valuable for

developing systematic and multidisciplinary clinical interventions for promoting SOC, which would further lead to participation and recovery for persons with psychiatric disabilities.

Based on the study findings, this study suggests that applying ICF model in understanding SOC for persons with psychiatric disabilities was successful, which further provides supportive evidence for the benefits of using a holistic approach to comprehensively explore factors of SOC. In addition, several individual variables were found to be able to independently contribute to SOC in the final model. Specifically, treatment-related support, diagnosis, self-efficacy, stigma and social support contributed significantly to the variations in SOC levels for persons with psychiatric disabilities. Regarding those meaningful study findings, some discussions about the possible clinical implications for rehabilitation professionals are noted in order to better support people with psychiatric disability for a better SOC.

**Treatment adherence.** In this study, treatment-related support such as physical/medical treatment, inpatient psychiatric treatment and substance abuse treatment were found to be a significant predictor for SOC. The results suggest the benefits of receiving treatment-related support in promoting SOC, such as treatments in reducing symptom severity and relapse frequency (Schatzberg & Nemeroff, 1998), managing comorbid psychiatric conditions and other physical health problems (Hyde, 2012), and getting recovery from co-occurring substance abuse disorders (SAMHSA, 2003). Thus, rehabilitation professionals should not only focus on reducing psychiatric symptomatology, but also be aware of the wide range of other potential treatment needs for physical/medical/health conditions and substance abuse disorders. When working with persons having comorbid conditions, sufficient resources and referral information should be provided in order for them to receive comprehensive treatments in addition to psychiatric treatment. When working with persons having co-occurring substance abuse related

disorders, integrated treatment by addressing psychiatric conditions and substance abuse issues simultaneously has been mentioned as helpful (SAMHSA, 2016). Specifically, early detection, client-centered treatment planning, and collaborated treatment across disciplines have been noted as associated with better treatment outcomes such as reducing substance abusing rate, improving psychiatric symptoms, and functioning and promoting overall quality of life (SAMHSA, 2015). SAMHSA (2016) has also discussed several strategic initiatives on health care and health systems integrations aiming to achieve better overall health conditions for persons with psychiatric disabilities. For example, *Coordinated Care* has been developed to support persons with comorbid psychiatric, medical/health and substance abuse related conditions by a team of practitioners for treating primary, dental, and behavioral health issues at the same time, through a well-organized health care delivery system. *Million Hearts* has been designed to target poor cardiovascular health for persons with psychiatric disabilities, in order to better improve the prevention and management of cardiovascular disease for those persons. As suggested in the literature, treating physical illness and substance abuse before psychiatric treatment could make a person better respond to psychiatric treatment (NIMI, 2009). In this sense, some other comprehensive evidence-based psychiatric rehabilitation practices, such as Assertive Community Treatment (ACT), Illness Management and Recovery (IMR), and Pharmacological Treatment (PT) would provide effective approaches and directions in guiding treatment-related support for persons with psychiatric disabilities (Tschopp & Frain, 2009).

Despite studies which have noted the inpatient psychiatric treatment as the most expensive and could only be offered sparingly (Torres, Nunes, Cunha, & Viana, 2009), this study indicated this type of treatment would prepare individuals to have better SOC experiences when participating in community settings. Given the benefits of receiving treatment, rehabilitation

professionals should find ways to help individuals with adhering to needed treatments, due to the serious compliance issues persons with psychiatric disabilities tend to have in receiving treatment, such as missing clinical appointments, medication noncompliance, and disengaging in treatment (Tschopp & Frain, 2009). For person with psychiatric disabilities, their disengagements may be due to cognitive dysfunctions, stigmatized attitudes from others, or dissatisfaction with treatment services received (Angell, Mahoney, & Martinez, 2006). As a result, it would be helpful for professionals to understand why some individuals are reluctant or not willing to adhere to treatments. Taken together, more effective and appropriate intervention strategies aiming at improving symptoms and health condition, managing comorbid conditions, reducing relapse rate, and facilitating self-determination and daily activity skills are critically needed to be developed to prepare persons with psychiatric disability for greater SOC level.

**Anxiety management.** The study results showed that when compared with those without anxiety disorders, persons with a diagnosis of anxiety disorders would have lower SOC. Anxiety disorders influence 40 million (18%) of Americans in a given year (NIMI, 2009), and are featured by both physiological arousal and subjective anxiety. Persons with a diagnosis of anxiety disorders are often having fears, negative affect or some general distressing concerns in daily life (Craske, Rauch, Ursano, Prenoveau, Pine, & Zinbarg, 2009), which would prevent them from being functionally involved into community experience. Particularly for those with panic disorders, social phobia and obsessive-compulsive disorder, they are more likely to have restricted normal activity experience and tend to receive stigmatized attitudes, due to the impact by those distressing symptoms (NIMI, 2009). Regarding the negative influence of anxiety disorders on SOC, besides supporting persons to adhere with medications and psychotherapy, rehabilitation professionals could also connect individuals with other peers in anxiety support

groups to help those people with similar anxiety conditions share their problems, experience, and coping strategies. Most importantly, rehabilitation professionals should work with persons with anxiety disorders to develop skills in order to meet the demands of their personal and social roles in social participation, especially fundamental skills under some stressful events or adverse situations (Farkas, Jansen, & Penk, 2007). Some essential skills have been recommended as effective for persons with psychiatric disabilities, such as coping skills, that could be helpful for persons to learn how to face barriers in daily life; interpersonal skills, to help persons to obtain positive social interaction experiences; assertiveness skills, to help persons to express their needs, be sure about themselves, and take active roles to achieve their goals; and daily living and work skills, to help persons to perform “valued tasks and roles” in their daily life and work environment (Anthony, 1994).

**Self-efficacy promotion.** The study found that a higher self-efficacy is associated with better SOC. Findings particularly focused on the persons’ beliefs in their personal competence to empathetically respond to other people’s feelings and needs, effectively deal with interpersonal relationships, and be confident in their general social skills (Giunta et al., 2010). Skills training have been clearly mentioned as the effective way to build self-efficacy. As a result, rehabilitation professionals could utilize comprehensive training strategies to work with persons with psychiatric disabilities in developing those skills, such as managing psychiatric symptoms, improving cognitive functioning, learning interpersonal and coping skills, developing hygiene and daily living skills, maintaining personal management in daily activities, and promoting motivation and a sense of mastery (Chou, Ditchman, Pruett, Chan, & Hunter, 2009). Besides teaching those important skills, rehabilitation professionals have been recommended to use the behavioral modeling strategy to teach and demonstrate how to practice and perform those skills

for persons with psychiatric disabilities. It has been suggested as a more effective way to help those individuals develop skills for self-efficacy promotion (Chou et al., 2009).

**Stigma reduction.** The research findings in this study showed that stigma reduction was associated with SOC improvement. Persons with psychiatric disabilities are more likely to receive rejections and be viewed more negatively than other disability groups by the public. People with psychiatric disability may frequently internalize the negative attitudes and devalue themselves (Tschopp & Frain, 2009). Therefore, it is very important to provide education and outreach to general public to clarify the myth and misconceptions (e.g., violent and dangerousness) about psychiatric disabilities (Corrigan & O'Shaughnessy, 2007). Additionally, it would be helpful to assist persons with psychiatric disabilities in recognizing the negative impact that stigmatized attitudes can make on their self-worth and self-perception, as well as on their community participation experience particularly in working, housing, and education. Regarding those negative impacts, rehabilitation services targeting on the development of adaptive coping skills and stress management skills toward those adverse situations would become highly desirable. Besides, the current study findings (see Table 4.1) along with many previous results supported the negative relationship between perceived stigma and self-efficacy (e.g., Corrigan et al., 2006). As a result, skills training discussed for promoting self-efficacy would also be useful in reducing the negative impact by perceived stigma.

**Social support provision.** Results of this study showed that better social support would be associated with higher SOC. For rehabilitation professionals, providing good quality of support has always been viewed as an important rehabilitation intervention for psychiatric populations' treatment adherence and general positive rehabilitation outcomes (Tschopp & Frain, 2009). Rehabilitation professionals have been encouraged to develop a positive working alliance



with persons with psychiatric disabilities in the first place (Horvath, 2000), through using mutually agreed service strategies, facilitating empowerment, and promoting persons' service engagement and maintenance (Tschopp & Frain, 2009). Besides, the community/social settings should also provide necessary supportive resources, emotional assistance, and interpersonal support to facilitate community involvement and participation (Corrigan, 2003). Next, it is critical to utilize the collaborated social support resources provided from persons' family, friends, and peers. As suggested in the literature, natural support from family, friends or significant others would be a more enduring source of support than the formal support provided by professionals (Chronister, 2009). More importantly, social skills training would be beneficial for preparing persons with psychiatric disabilities to learn how to self-advocate and require support by themselves through community participation. In the meantime, rehabilitation services targeted on training about building, maintaining and expanding social/interpersonal support network would also be crucial in promoting positive community living experience.

### **Implications for Future Research**

Findings of this study provided empirical evidence to support the effectiveness of applying the ICF model in understanding SOC for persons with psychiatric disabilities, by taking in account the interaction effects of disability-related, personal and environmental factors as determinants of functioning and participation. Such biopsychosocial and holistic perspective served as a comprehensive framework of disability and provided standardized language in conceptualizing disability as a multidimensional concept. In this sense, it would be worthwhile for future studies to use the ICF model in understanding other salient, multidimensional and complex construct for persons with psychiatric disabilities such as vocational outcome, community integration and quality of life.

Particularly for further studying *quality of life*, as noted above, it is an essential, albeit and elusive outcome variable for psychiatric rehabilitation programs during the past three decades (Ackerson, 2000). Subjective well-being is the subjective aspect of quality of life. Within subjective well-being, there are also two aspects, i.e., the “affective” aspect and the “cognitive or judgmental” aspect, which is referred to as life satisfaction (McCormick, 1999, pp. 305-306). Life satisfaction stems from the critical judgment of individuals in global life situations that can reflect conscious life values and goals (Pavot & Diener, 1993), and has been viewed as a highly valued person-centered variable in psychiatric rehabilitation research (Anthony, 1993). Life satisfaction has been associated with the attainment of employment, social and recreational life activity involvement and interactions, along with many other meaningful experiences of community participation. As a result, it has been identified as the ultimate goal of rehabilitation counseling services (Kortte, Gilbert, Gorman, & Wegener, 2010). Studies of life satisfaction and SOC have been conducted previously in noting the relationship between those two meaningful constructs in social science literatures for general populations (e.g., Davidson & Cotter, 1991; Prezza, et al., 2001). However, despite the increasing emphasis of promoting life satisfaction and the better understanding of the SOC construct for persons with psychiatric disabilities, very few empirical studies have been done on exploring whether or not the core component of community participation experience is related to life satisfaction, the end goal an outcome of psychiatric rehabilitation. By reviewing the current literatures, one study conducted among 92 participants in the Assertive Community Treatment programs revealed the significant relationship between life satisfaction and SOC (Prince & Gerber, 2005). However, another study among 72 persons with psychiatric disabilities indicated no significant relationship between life satisfaction and SOC (Aubry & Myner, 1996). There are conflicting research findings and

limited information exists regarding the relationship between life satisfaction and SOC for psychiatric populations. In this case, more studies are warranted to figure out whether or not and to what extent SOC correlates with life satisfaction, given its importance in psychiatric rehabilitation studies. Moreover, given the value of life satisfaction, it would be beneficial for future research to develop and validate a comprehensive model of life satisfaction for persons with psychiatric disabilities. Specifically, continuously adopting the ICF based model to explore how those potential factors of life satisfaction from each ICF construct and their interaction effects can impact life satisfaction of persons with psychiatric disabilities. This would help rehabilitation professionals to better understand under what conditions or what specific predictors, life satisfaction of persons with psychiatric disabilities can be better improved.

Besides, given the critical shortage of literatures in the field of rehabilitation counseling in addressing SOC for persons with psychiatric disabilities, continuous empirical research should be conducted to further explore and evaluate the ICF-based model of SOC. The contribution of many other disability-related characteristics (e.g., overall functioning) and psychosocial factors (e.g., self-esteem, coping skills, daily living skills, and work skills) would also worth evaluating in prediction of SOC. A larger sample size including more predicting variables from each ICF construct would be essential to add new information about SOC. In addition, to better understand the underlying mechanism between disability-related characteristics and SOC, mediation analyses could also be conducted in the future to examine the effects of psychosocial factors (e.g., self-efficacy, stigma and social support) as mediators between disability-related characteristics (e.g., symptom severity and cognitive functioning) and SOC level. In addition, future longitudinal study could be used to examine the actual causal relationships between predictor and outcome variables.

Next, since in the current study sample almost half were college students, further studies can be conducted to compare the differences in SOC outcomes between individuals in higher education setting and community setting. Moreover, it would also be helpful to explore significant predictors of SOC for individuals in each setting respectively, so that more specific and customized interventions could be designed for different groups based on their needs.

In addition, given the importance of social functioning to SOC proposed in the literature for psychiatric populations, future studies should have a more in-depth understanding regarding the associations between SOC and social functioning. It would be beneficial to specifically and comprehensively study social functioning construct by looking at the unique effect of each aspects of social functioning on SOC.

## **Conclusion**

This study applied the ICF model as the conceptual framework to understand factors associated with SOC for person with psychiatric disabilities. Findings provided empirical evidence for the effectiveness of using the ICF model in studying SOC, by taking in account the contribution of multidimensional factors. In particular, demographic characteristics and other predictor variables from each set of the ICF construct (functioning, activity, personal and environmental factors) accounted for 57% of the variance in SOC scores. Among those variables, social support was shown as the strongest independent predictors in the final regression model in predicting SOC. By validating the ICF-based model of SOC, the study findings would inform rehabilitation professionals on how to provide effective and efficient rehabilitation services for persons with psychiatric disabilities in order to promote their community experiences, such as treatment adherence, anxiety disorder management, self-efficacy promotion, stigma reduction,

and social support provision. This study further indicated the research direction of taking a holistic approach to study SOC for psychiatric populations.

## **APPENDICES**

## Appendix A

### Institutional Review Board Notice of Approval

#### **MICHIGAN STATE UNIVERSITY**

September 30, 2015

To: Ying Yuk Sung  
620 Farm Lane, Room 460  
Erickson Hall

Re: **IRB# X15-996e** Category: Exempt 2  
**Approval Date:** September 30, 2015

Title: Using the World Health Organization International Classification of Functioning, Disability and Health (ICF) Model in Prediction of Sense of Community for Persons with Psychiatric Disabilities

The Institutional Review Board has completed their review of your project. I am pleased to advise you that **your project has been deemed as exempt** in accordance with federal regulations.

The IRB has found that your research project meets the criteria for exempt status and the criteria for the protection of human subjects in exempt research. **Under our exempt policy the Principal Investigator assumes the responsibilities for the protection of human subjects** in this project as outlined in the assurance letter and exempt educational material. The IRB office has received your signed assurance for exempt research. A copy of this signed agreement is appended for your information and records.

**Renewals:** Exempt protocols do not need to be renewed. If the project is completed, please submit an **Application for Permanent Closure**.

**Revisions:** Exempt protocols do not require revisions. However, if changes are made to a protocol that may no longer meet the exempt criteria, a new initial application will be required.

**Problems:** If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to the human subjects and change the category of review, notify the IRB office promptly. Any complaints from participants regarding the risk and benefits of the project must be reported to the IRB.

**Follow-up:** If your exempt project is not completed and closed after three years, the IRB office will contact you regarding the status of the project and to verify that no changes have occurred that may affect exempt status.

Please use the IRB number listed above on any forms submitted which relate to this project, or on any correspondence with the IRB office.

Good luck in your research. If we can be of further assistance, please contact us at 517-355-2180 or via email at IRB@msu.edu. Thank you for your cooperation.

Sincerely,



Harry McGee, MPH  
SIRB Chair

c: Boyang Tong



**Office of Regulatory Affairs  
Human Research  
Protection Programs**

**Biomedical & Health  
Institutional Review Board  
(BIRB)**

**Community Research  
Institutional Review Board  
(CRIRB)**

**Social Science  
Behavioral/Education  
Institutional Review Board  
(SIRB)**

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MSU is an affirmative-action,  
equal-opportunity employer.

Figure 3.1 *Institutional Review Board Notice of Approval*

## Appendix B

### Invitation Letter (Agency)

Dear Sir/Madam:

My name is Boyang Tong. I am a doctoral student studying Rehabilitation Counselor Education in the Office of Rehabilitation and Disability Studies, Michigan State University (MSU). I am currently conducting a research study, which aims to examine the relationship among disability-related, personal, and environmental factors in predicting sense of community using a strength-based, holistic approach. Results of this study can facilitate rehabilitation and healthcare professionals develop effective intervention services to help individuals with psychiatric disabilities and promote psychological community integration.

I am writing to cordially invite your organization to participate in this research project. Your support and assistance in recruiting participants by disseminating information below among your members and/or posting flyers would be greatly appreciated.

---

***You are invited to participate in this study if you are an individual:***

- who are aged 18 or older;
- had been diagnosed with psychiatric disabilities/severe mental illness such as major depressive disorders, bipolar disorders and schizophrenia; and
- have a 6th grade or above reading level.

You can participate by completing a survey comprising several psychosocial questionnaires either online or using hard copies, which will take about 40-45 minutes. Upon completion of the survey, you will receive a **\$10 gift card** via email or mail within two weeks.

**Please complete the online survey by clicking on the following link:**

[https://msucoe.az1.qualtrics.com/SE/?SID=SV\\_4THoFKx246sDSYJ](https://msucoe.az1.qualtrics.com/SE/?SID=SV_4THoFKx246sDSYJ)

**If you are interested in taking hard copy survey, please contact Boyang Tong**  
[tongboya@msu.edu](mailto:tongboya@msu.edu).

Your participation will generate useful data to help rehabilitation professionals and researchers gain a comprehensive understanding of the predictors of sense of community so as to provide more effective intervention services for people with psychiatric disabilities. Thus, your support and assistance are extremely important for promoting the sense of community for individuals with psychiatric disabilities.

For more information, please refer to the attached flyer. If you would like to participate in the study or have any questions, please feel free to contact Boyang Tong [tongboya@msu.edu](mailto:tongboya@msu.edu). Thank you in advance for your interest and participation. We look forward to your involvement.

Sincerely,

Boyang Tong, MA  
Office of Rehabilitation and Disability Studies  
Michigan State University  
[tongboya@msu.edu](mailto:tongboya@msu.edu)



## Invitation Letter (Participant)

Dear Sir/Madam:

My name is Boyang Tong. I am a doctoral student studying Rehabilitation Counselor Education in the Office of Rehabilitation and Disability Studies, Michigan State University (MSU). I am currently conducting a research study, which aims to examine the relationship among disability-related, personal, and environmental factors in predicting sense of community using a strength-based, holistic approach. Results of this study can facilitate rehabilitation and healthcare professionals develop effective intervention services to help individuals with psychiatric disabilities and promote psychological community integration.

I am writing to cordially invite you to participate in this research project. Your support and assistance in participation in this study would be greatly appreciated.

***You are invited to participate in this study if you are an individual:***

- who are aged 18 or older;
- had been diagnosed with psychiatric disabilities/severe mental illness such as major depressive disorders, bipolar disorders and schizophrenia; and
- have a 6th grade or above reading level.

You can participate by completing a survey comprising several psychosocial questionnaires either online or using hard copies, which will take about 40-45 minutes. Upon completion of the survey, you will receive a **\$10 gift card** via email or mail within two weeks.

**Please complete the online survey by clicking on the following link:**

[https://msucoe.az1.qualtrics.com/SE/?SID=SV\\_4THoFKx246sDSYJ](https://msucoe.az1.qualtrics.com/SE/?SID=SV_4THoFKx246sDSYJ)

**If you are interested in taking hard copy survey, please contact** Boyang Tong  
[tongboya@msu.edu](mailto:tongboya@msu.edu).

Your participation will generate useful data to help rehabilitation professionals and researchers gain a comprehensive understanding of the predictors of sense of community so as to provide more effective intervention services for people with psychiatric disabilities. Thus, your support and assistance are extremely important for promoting the sense of community for individuals with psychiatric disabilities.

For more information, please refer to the attached flyer. If you would like to participate in the study or have any questions, please feel free to contact Boyang Tong [tongboya@msu.edu](mailto:tongboya@msu.edu). Thank you in advance for your interest and participation. We look forward to your involvement.

Sincerely,

Boyang Tong, MA  
Office of Rehabilitation and Disability Studies  
Michigan State University  
[tongboya@msu.edu](mailto:tongboya@msu.edu)

## Appendix C

### Flyer

#### Sense of Community Study for Persons with Psychiatric Disabilities —Research Participants Wanted!!!

***What is the purpose of the study?***

The purpose of this study is to examine the relationship among disability-related, personal and environmental factors in predicting sense of community for individuals with psychiatric disabilities using the strength-based holistic framework.

***Who are we?***

We are researchers from the Office of Rehabilitation and Disability Studies at Michigan State University. This research project is directed by Boyang Tong, MA and Connie Sung, PhD.

***Am I eligible to participate in this study?***

You are eligible to participate in this study if you are an individual:

- 1) who are aged 18 or older;
- 2) who had been diagnosed with psychiatric disabilities/severe mental illness such as major depressive disorders, bipolar disorders, and schizophrenia; and
- 3) have a 6<sup>th</sup> grade or above reading level.

***How can I participate in this study?***

You can participate by completing an online survey comprising several psychosocial questionnaires, which will take about 40-45 minutes. **Upon completion of the survey, you will receive a \$10 gift card within two weeks.**

**Please complete the online survey by clicking on the following link:**

[https://msuco.eaz1.qualtrics.com/SE/?SID=SV\\_4THoFKx246sDSYJ](https://msuco.eaz1.qualtrics.com/SE/?SID=SV_4THoFKx246sDSYJ)

If you are interested in having the hard copy survey, please contact Boyang Tong at [tongboya@msu.edu](mailto:tongboya@msu.edu)

***Who will be benefit from my participation?***

Your participation will generate useful data to help rehabilitation professionals and researchers gain a comprehensive understanding of the predictors of sense of community so as to provide more effective intervention services for people with psychiatric disabilities. Thus, your support and assistance are extremely important for promoting sense of community for individuals with psychiatric disabilities.

***If I have questions, whom should I contact?***

If you have any questions about this study, please feel free to contact Boyang Tong at [tongboya@msu.edu](mailto:tongboya@msu.edu).

***Thank you very much for your participation!!!***

## **Appendix D**

### **Research Participant Information and Consent Form (Online Format)**

You are cordially invited to participate in a research study. Researchers are required to provide a consent form to inform you about the research study, to convey that participation is voluntary, to explain risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researchers any questions you may have.

**STUDY TITLE:** Using the World Health Organization International Classification of Functioning, Disability and Health (ICF) Model in Prediction of Sense of Community for Persons with Psychiatric Disabilities

**RESEARCHER:** Dr. Connie Sung, PhD, Assistant Professor and Boyang Tong, MA, Doctoral Student in Rehabilitation Counselor Education

**DEPARTMENT AND INSTITUTION:** Office of Rehabilitation and Disability Studies, Department of Counseling, Educational Psychology and Special Education, MSU

**ADDRESS AND CONTACT INFORMATION:** 620 Farm Lane, Room 460, East Lansing, MI 48824

- Principal Investigator: Dr. Connie Sung (517-353-1638; csung@msu.edu)
- Student Researcher: Boyang Tong (tongboya@msu.edu)

### **1. PURPOSE OF RESEARCH**

You have been selected as a possible participant in this study since you are an individual aged 18 or older who had been diagnosed with a psychiatric disability/severe mental illness. The purpose of this study is to examine the relationship among disability-related, personal, and environmental factors in predicting sense of community using a strength-based, holistic approach.

### **2. WHAT YOU WILL DO**

If you decide to participate, you will be asked to complete an online survey which includes a series of eight self-report psychosocial questionnaires. We hope that you will respond to all items, which will take approximately 40-45 minutes. As long as you do not lose your Internet browser connection, you should be able to take breaks as you are completing the survey and go backward to change your answers if needed. Upon completion of the online survey, you will receive a \$10 gift card via mail or email within three weeks.

### **3. POTENTIAL BENEFITS**

You will not directly benefit from your participation in this study. However, your participation may contribute to the better understanding of the predictors of sense of community, which will

help rehabilitation professionals to provide more effective intervention services to assist people with psychiatric disabilities integrate into community. Thus, your support and assistance are extremely important for promoting the sense of community for individuals with psychiatric disabilities.

#### **4. POTENTIAL RISKS**

There are no foreseeable risks associated with participation in this study.

#### **5. PRIVACY AND CONFIDENTIALITY**

The information gathered in this study will be used for research purposes only. Special ID numbers will be used so that data will be collected without your names or other identifying information. All research records and dataset for this project will be kept confidential and will be stored in a password-protected computer and records will only be accessible to the key research personnel related to this study.

When the survey is successfully completed, you will have an option to click on a link and sign up for a \$10 gift card. In order to receive the gift card, you will be asked to provide a valid mailing address, but this information will be obtained separately from your responses to the questionnaires, so your answers will still remain anonymous. In addition, your responses will be kept in a secure login and password protected web survey service platform (Qualtrics). Your email address will only be used for sending you the gift card and it will be deleted after the gift card is sent.

#### **6. YOUR RIGHTS TO PARTICIPATE, SAY NO, OR WITHDRAW**

We very much hope that you will participate in the study and respond to all items, however, your participation is completely voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You have the right to say no. You may choose not to answer specific questions or to stop participating at any time. There is no consequence of withdrawal or incomplete participation.

#### **7. COSTS AND COMPENSATION FOR BEING IN THE STUDY**

There is no cost participating in the study other than the value you place on your time. When the survey is successfully completed, you will have an option to click on a link and sign up for a \$10 gift card for participating in this study. **If you choose to, your email address will be required and the gift card will be sent to you via email within two weeks.**

#### **8. CONTACT INFORMATION**

You may ask any questions about the research at any time. If you have any concerns or questions about this study, such as scientific issues or how to do any part of it, please contact the principal investigator (Dr. Connie Sung) or student researcher (Boyang Tong) at the phone numbers or email addresses listed above, or regular mail at: 620 Farm Lane, Room 460, East Lansing, MI 48824.

If you have any questions about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Programs at 517-355-2180, fax: 517-432-4503, or email: [irb@msu.edu](mailto:irb@msu.edu), or regular mail at: 207 Olds Hall, East Lansing, MI 48824.

## **9. DOCUMENTATION OF INFORMED CONSENT**

Again, your participation is completely voluntary and confidential. If you decide not to participate or to withdraw from the study, you may do so at any time by closing the webpage. If you choose to participate, please proceed to the survey. Your completed online survey will indicate that you have read and understand the description of what you are being asked to do. And, you voluntarily consent to participate in this research study.

By clicking on the "**I Agree**" button below, you indicate that you have read and understand the above information. And you voluntarily agree to participate in this online survey.

- ☐ I Agree

## **Research Participant Information and Consent Form (Hard copy Format)**

You are cordially invited to participate in a research study. Researchers are required to provide a consent form to inform you about the research study, to convey that participation is voluntary, to explain risks and benefits of participation, and to empower you to make an informed decision. You should feel free to ask the researchers any questions you may have.

**STUDY TITLE:** Using the World Health Organization International Classification of Functioning, Disability and Health (ICF) Model in Prediction of Sense of Community for Persons with Psychiatric Disabilities

**RESEARCHER:** Dr. Connie Sung, PhD, Assistant Professor and Boyang Tong, MA, Doctoral Student in Rehabilitation Counselor Education

**DEPARTMENT AND INSTITUTION:** Office of Rehabilitation and Disability Studies, Department of Counseling, Educational Psychology and Special Education, MSU

**ADDRESS AND CONTACT INFORMATION:** 620 Farm Lane, Room 460, East Lansing, MI 48824

- Principal Investigator: Dr. Connie Sung (517-353-1638; csung@msu.edu)
- Student Researcher: Boyang Tong (tongboya@msu.edu)

### **1. PURPOSE OF RESEARCH**

You have been selected as a possible participant in this study since you are an individual aged 18 or older who had been diagnosed with a psychiatric disability/severe mental illness. The purpose of this study is to examine the relationship among disability-related, personal, and environmental factors in predicting sense of community using a strength-based, holistic approach.

### **2. WHAT YOU WILL DO**

If you decide to participate, you will be asked to complete a series of eight self-report psychosocial questionnaires in hard copy format. We hope that you will respond to all items, which will take approximately 40-45 minutes. Upon completion of the survey, you will receive a \$10 gift card via mail or email within three weeks.

### **3. POTENTIAL BENEFITS**

You will not directly benefit from your participation in this study. However, your participation may contribute to the better understanding of the predictors of sense of community, which will help rehabilitation professionals to provide more effective intervention services to assist people with psychiatric disabilities integrate into community. Thus, your support and assistance are extremely important for promoting the sense of community for individuals with psychiatric disabilities.

### **4. POTENTIAL RISKS**

There are no foreseeable risks associated with participation in this study.

## **5. PRIVACY AND CONFIDENTIALITY**

The information gathered in this study will be used for research purposes only. Special ID numbers will be used so that data will be collected without your names or other identifying information. In addition, consent forms will be stored separately from your responses to the survey so your response will be completely anonymous. All research records and dataset for this project will be kept confidential and will be stored in a locked and secured cabinet and records will only be accessible to the key research personnel related to this study. In order to receive the gift card, you may need to provide a valid mailing address or email address. Your email and mailing address will only be used for sending you the gift card and they will be permanently deleted after the gift card is sent.

## **6. YOUR RIGHTS TO PARTICIPATE, SAY NO, OR WITHDRAW**

We very much hope that you will participate in the study and respond to all items, however, your participation is completely voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You have the right to say no. You may choose not to answer specific questions or to stop participating at any time. There is no consequence of withdrawal or incomplete participation.

## **7. COSTS AND COMPENSATION FOR BEING IN THE STUDY**

There is no cost participating in the study other than the value you place on your time. When the survey is successfully completed, you will have an option to sign up for a \$10 gift card for participating in this study. **If you choose to, your email or mailing address will be required and the gift card will be sent to you via email or mail within three weeks.**

## **8. CONTACT INFORMATION**

You may ask any questions about the research at any time. If you have any concerns or questions about this study, such as scientific issues or how to do any part of it, please contact the principal investigator (Dr. Connie Sung) or student researcher (Boyang Tong) at the phone numbers or email addresses listed above, or regular mail at: 620 Farm Lane, Room 460, East Lansing, MI 48824.

If you have any questions about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University's Human Research Protection Programs at 517-355-2180, fax: 517-432-4503, or email: [irb@msu.edu](mailto:irb@msu.edu), or regular mail at: 207 Olds Hall, East Lansing, MI 48824.

## **9. DOCUMENTATION OF INFORMED CONSENT**

Again, your participation is completely voluntary and confidential. If you decide not to participate or to withdraw from the study, you may do so at any time. If you choose to participate, please proceed to the survey. Your completed survey will indicate that you have read and understand the description of what you are being asked to do. And, you voluntarily consent to participate in this research study.

**By signing your initials here, you indicate that you have read and understand the above information. And you voluntarily agree to participate in this survey.**

---

Initials of Participant

---

Date

---

Signature of Witness

---

Date



## Appendices E

### Instruments Summary

Table 5.1  
Instruments Summary

<b>Variables</b>	<b># of Items</b>	<b>Instruments</b>
Demographics	15 items	- See Appendix E
Functioning	Psychiatric symptom severity (9 items)	- Symptom Checklist Short Version-9 (SCL-K-9; Klaghofer & Brahler, 2001) - See Appendix F
	Cognitive functioning (21 items)	- Subjective Scale to Investigate Cognition in Schizophrenia (SSTICS; Stip, Caron, Renaud, Pampoulova, & Lecomte, 2003) - See Appendix G
Activity	Social functioning (10 items)	- Social Functioning Scale (SFS; Birchwood, Smith, Cochrane, Wetton, & Copestake, 1990) - See Appendix H
Personal factor	Resilience (6 items)	- Brief Resilience Scale (BRS; Smith, Dalen, Wiggins, Tooley, Christopher, & Bernard, 2008) - See Appendix I
	Self-efficacy (11 items)	- Perceived Empathic Self-Efficacy Scale (PESE; Bandura, Caparara, Barbaranelli, Gerbino, & Pastorelli, 2003) - See Appendix J - Perceived Social Self-Efficacy Scale (PSSE; Di Giunta, Eisenberg, Kupfer, Steca, Tramontano, & Caprara, 2010) - See Appendix K
Environmental factor	Stigma (12 items)	- Perceived Devaluation-Discrimination Measure (PDDM; Link, 1987) - See Appendix L
	Social support (15 items)	- Personal Resource Questionnaire-2000 (PRQ-2000; Weinert, 2000) - See Appendix M
Participation	Sense of community (11 items)	- Brief Sense of Community Index-Disability (BSCI-D; Townley & Kloos, 2009) - See Appendix N
Total	110 items	

## Appendix F

### Demographic Information

**Instructions:** Please check or fill in the blanks as best descriptions as your situations.

1. Age:	_____
2. Gender:	<input type="checkbox"/> Male <input type="checkbox"/> Female
3. Race/Ethnicity:	<input type="checkbox"/> Caucasian (White) <input type="checkbox"/> African American <input type="checkbox"/> Hispanic/Latino <input type="checkbox"/> Asian & Pacific Islanders <input type="checkbox"/> Native/Indian American <input type="checkbox"/> Others (please specify): _____
4. Highest education level:	<input type="checkbox"/> Elementary school <input type="checkbox"/> Middle school <input type="checkbox"/> Some high school, no diploma <input type="checkbox"/> High school <input type="checkbox"/> Some college/Associate degree <input type="checkbox"/> College graduate (Bachelor degree) <input type="checkbox"/> Graduate school (Masters/Doctoral degree) <input type="checkbox"/> Others (please specify): _____
5. Marital Status:	<input type="checkbox"/> Single, never married <input type="checkbox"/> Married <input type="checkbox"/> Divorced or separated <input type="checkbox"/> Cohabiting <input type="checkbox"/> Widowed
6. Housing:	<input type="checkbox"/> Owning house/apartment <input type="checkbox"/> Renting house/apartment <input type="checkbox"/> Supported housing <input type="checkbox"/> Residential program <input type="checkbox"/> Homeless

	<input type="checkbox"/> Others (please specify): _____
7. Employment status:	<input type="checkbox"/> Part time employed <input type="checkbox"/> Full time employed <input type="checkbox"/> Unemployed, looking for work <input type="checkbox"/> Unemployed, not looking for work <input type="checkbox"/> Volunteer <input type="checkbox"/> Student <input type="checkbox"/> Retired <b><i>If employed, your weekly work hours:</i></b> _____ <b><i>Your monthly earnings:</i></b> \$ _____
8. Please identify your religious affiliation:	<input type="checkbox"/> Christian <input type="checkbox"/> Jewish <input type="checkbox"/> Buddhist <input type="checkbox"/> Muslim <input type="checkbox"/> Hindu <input type="checkbox"/> None <input type="checkbox"/> Others (please specify): _____
9. How often do you go to church?	<input type="checkbox"/> Never <input type="checkbox"/> More than once a week <input type="checkbox"/> Once a week <input type="checkbox"/> Once a month <input type="checkbox"/> Twice a month <input type="checkbox"/> More than twice a month
10. What type of health insurance do you carry? (Mark all that apply):	<input type="checkbox"/> No insurance at all <input type="checkbox"/> Employer-based <input type="checkbox"/> Medicare <input type="checkbox"/> Medicaid <input type="checkbox"/> Others (please specify): _____
11. SSA beneficiary:	<input type="checkbox"/> Not applicable <input type="checkbox"/> Don't know <input type="checkbox"/> Social Security Disability Insurance (SSDI): \$ _____ <input type="checkbox"/> Supplemental Security Income (SSI): \$ _____ <input type="checkbox"/> Other (specify): \$ _____

12. At what age were you <b>First Time</b> diagnosed with mental illness?	_____ years old.
13. Your primary psychiatric diagnosis: (Mark all that apply)	<input type="checkbox"/> Schizophrenia <input type="checkbox"/> Schizoaffective disorder <input type="checkbox"/> Bipolar Disorder <input type="checkbox"/> Major Depressive Disorder <input type="checkbox"/> Psychotic disorder <input type="checkbox"/> Anxiety disorders <input type="checkbox"/> Other (please specify): _____
14. How many psychiatric medications are you currently taking?	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 or more
15. What type(s) of support/treatment services have you received (Please mark all that apply)?	<input type="checkbox"/> Individual counseling <input type="checkbox"/> Group counseling <input type="checkbox"/> Family counseling <input type="checkbox"/> Support group <input type="checkbox"/> Psychological assessment <input type="checkbox"/> Employment services <input type="checkbox"/> Inpatient psychiatric treatment <input type="checkbox"/> Substance abuse treatment <input type="checkbox"/> Physical treatment <input type="checkbox"/> Others

## Appendix G

### Symptom Checklist Short Version-9 (SCL-K-9)

Below is a list of problems people sometimes have. Read each one carefully. Circle only one number for each problem. Do not skip any items. Read the example before you begin. If you have any questions, please ask them now.

**Instructions:** Circle the number of the response that best describes HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST 7 DAYS INCLUDING TODAY.

**1=Not at all; 2=A little bit; 3=Moderately; 4=Quite a bit; 5=Extremely**

EXAMPLE						
EX.1	Body aches	1	2	3	4	5

HOW MUCH WHEN YOU WERE DISTRESSED BY:

1.	Temper outburst that you could not control?	1	2	3	4	5
2.	Feeling blocked in getting things done?	1	2	3	4	5
3.	Worrying too much about things?	1	2	3	4	5
4.	Your feelings being easily hurt?	1	2	3	4	5
5.	Feeling that you are watched or talked about by others?	1	2	3	4	5
6.	Feeling tense or keyed up?	1	2	3	4	5
7.	Heavy feelings in your arms or legs?	1	2	3	4	5
8.	Feeling nervous when you are left alone?	1	2	3	4	5
9.	Feeling lonely even when you are with people?	1	2	3	4	5

## Appendix H

### Subjective Scale to Investigate Cognition in Schizophrenia (SSTICS)

**Instructions:** Circle the number that best describes your experience.

**1=Never; 2=Rarely; 3=Sometimes; 4=Often; 5=Very often**

1.	Have you noticed any difficulty remembering things?	1	2	3	4	5
2.	Do you have difficulty remembering information that is freshly received <i>and that must be used immediately</i> , such as a telephone number, an address, a room number, a bus route number or a doctor's name?	1	2	3	4	5
3.	Do you have difficulty memorizing things, such as a grocery list or a list of names?	1	2	3	4	5
4.	Do you ever forget things, such as a date with a friend or a doctor's appointment?	1	2	3	4	5
5.	Do you forget to take your medication?	1	2	3	4	5
6.	Do you have difficulty remembering information that you read in the newspapers or hear on TV?	1	2	3	4	5
7.	Do you have difficulty doing household chores or repairs? For example, do you ever forget how to cook things or what ingredients go into a recipe?	1	2	3	4	5
8.	Do you have difficulty remembering how to get to the hospital or the outpatient clinic or even to your own place?	1	2	3	4	5
9.	Do you have difficulty remembering the names of well-known people, such as the President?	1	2	3	4	5
10.	Are you absent-minded or up in the clouds? For example, you lose your train of thought in a conversation because you are distracted or you have a hard time focusing on what you are reading?	1	2	3	4	5
11.	Do you have difficulty being on the alert or reacting to unexpected situations? For example, a fire alarm or a car that rushes by suddenly as you are crossing the street.	1	2	3	4	5
12.	Do you have difficulty making out what's important when you are presented with different bits of information simultaneously? For example, the name of your medication or your next doctor's appointment while two people are talking about music	1	2	3	4	5
13.	Are you unable to do two things at once? For example, memorize an address while making coffee, or count the money in your wallet while the pharmacist explains your medication to you.	1	2	3	4	5
14.	Do you have trouble focusing your attention on the same thing for more than 20 minutes? For example, at a conference or a book reading or during a lesson in a classroom.	1	2	3	4	5

15.	Do you have difficulty planning out your activities as easily as you used to? For example, charting an itinerary for getting someplace, making a budget for the month, preparing meals, or making time for laundry.	1	2	3	4	5
16.	Do you have difficulty coordinating your movements and actions of everyday life as easily as you used to? For example, using the telephone, doing some shopping, running errands, preparing meals, doing housework, doing laundry, using transportation, doing home repairs.	1	2	3	4	5
17.	Do you have difficulty getting dressed or eating? For example, handling buttons, zippers, work tools, scissors, a fork, a key in a lock.	1	2	3	4	5
18.	Do you have difficulty remembering the names of your medications?	1	2	3	4	5
19.	Do you have difficulty doing household chores or repairs? For example, do you ever forget how to cook things or what ingredients go into a recipe?	1	2	3	4	5
20.	Do you have difficulty changing your movements, decisions or ways of doing things if you are asked to do so <i>and you agree</i> ? For example, you agree to do so but it is hard because it is no longer the same.	1	2	3	4	5
21.	Do you have difficulty finding your words, forming sentences, understanding the meaning of words, pronouncing words, or naming objects?	1	2	3	4	5

## Appendix I

### Social Functioning Scale (SFS)

**Instructions:** Circle the number that best describes your experience.

1. What time do you get up each day?

	> 1pm	11:00am to 1pm	9:00am to 11:00am	<9:am
Average weekday	0	1	2	3

2. How many hours of the waking day do you spend alone (e.g., on own in room. walking out alone, listening to radio or watching TV alone, etc.)?

<b>Hours spent alone</b>	0-3h	3h-6h	6h-9h	9h-12h	12h-
	Very little time spent alone (3)	Some of the time (2)	Quite a lot the time (1)	A great deal of the time (0)	Practically all the time (0)

3. How often will you start a conversation at home?

Almost never	Rarely	Sometimes	Often
0	1	1	3

4. How often will you leave the house (for any reason)?

Almost never	Rarely	Sometimes	Often
0	1	1	3

5. How do you react to the presence of strangers?

Avoids them	Feels nervous	Accepts them	Likes them
0	1	1	3

6. Have you had any arguments with friends, relatives or neighbors recently?

Many major	Continued minor or 1 major	1 or 2 minor	None
0	1	1	3



7. How often are you able to carry out a sensible or rational conversation?

Almost never	Rarely	Sometimes	Often
0	1	1	3

8. How easy or difficult do you find talking to people at the moment?

Almost never	Rarely	Sometimes	Often
0	1	1	3

9. Do you feel uneasy with groups of people?

Almost never	Rarely	Sometimes	Often
0	1	1	3

10. Do you out of preference spend time on your own?

Almost never	Rarely	Sometimes	Often
0	1	1	3

## Appendix J

### Brief Resilience Scale (BRS)

**Instructions:** Please indicate the extent to which you agree with each of the following statements. Use the following scale:

**1=Strongly disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly agree**

1.	I tend to bounce back quickly after hard times.	1	2	3	4	5
2.	I have a hard time making it through stressful events.	1	2	3	4	5
3.	It does not take me long to recover from a stressful event.	1	2	3	4	5
4.	It is hard for me to snap back when something bad happens.	1	2	3	4	5
5.	I usually come through difficult times with little trouble.	1	2	3	4	5
6.	I tend to take a long time to get over set-backs in my life.	1	2	3	4	5

## Appendix K

### Perceived Empathic Self-Efficacy Scale (PESE)

**Instructions:** Read each statement below. Select the number that best represents how well you can do each of the following.

**1=Not at all; 2=Slightly well; 3=Moderately well; 4=Well; 5=Very well**

How well can you...

1.	Read your friends' needs?	1	2	3	4	5
2.	Recognize when someone wants comfort and emotional support, even if (s)he does not overtly exhibit it?	1	2	3	4	5
3.	Recognize whether a person is annoyed with you?	1	2	3	4	5
4.	Recognize when a person is inhibited by fear?	1	2	3	4	5
5.	Recognize when a companion needs your help?	1	2	3	4	5
6.	Recognize when a person is experiencing depression?	1	2	3	4	5

## Appendix L

### Perceived Social Self-Efficacy Scale (PSSE)

**Instructions:** Read each statement below. Select the number that best represents how well you can do each of the following.

**1=Not at all; 2=Slightly well; 3=Moderately well; 4=Well; 5=Very well**

How well can you...

1.	Express your opinion to people who are talking about something of interest to you?	1	2	3	4	5
2.	Work or study well with others?	1	2	3	4	5
3.	Help someone new become part of a group to which you belong?	1	2	3	4	5
4.	Share an interesting experience you had with other people?	1	2	3	4	5
5.	Actively participate in group activities?	1	2	3	4	5

## Appendix M

### Perceived Devaluation-Discrimination Measure (PDDM)

We are interested in what *you think* most people believe about the following statements.

**Instructions:** Read each statement carefully. Circle the number that best describes how you feel about each statement.

**1=Strongly disagree; 2=Disagree; 3=Slightly disagree; 4=Slightly agree; 5=Agree; 6=Strongly agree**

1.	Most people would willingly accept a former psychiatric patient as a close friend.	1	2	3	4	5	6
2.	Most people believe that a person who has been in a psychiatric hospital is just as intelligent as the average person.	1	2	3	4	5	6
3.	Most people believe that a former psychiatric patient is just as trustworthy as the average citizen.	1	2	3	4	5	6
4.	Most people would accept a fully recovered psychiatric patient as a teacher of young children in a public school.	1	2	3	4	5	6
5.	Most people feel that entering a psychiatric hospital is a sign of personal failure.	1	2	3	4	5	6
6.	Most people would not hire a former psychiatric patient to take care of their children, even if he or she had been well for some time.	1	2	3	4	5	6
7.	Most people think less of a person who has been in a psychiatric hospital.	1	2	3	4	5	6
8.	Most employers will hire a former psychiatric patient if he or she is qualified for the job.	1	2	3	4	5	6
9.	Most employers will pass over the application of a former psychiatric patient in favor of another applicant.	1	2	3	4	5	6
10.	Most people in my community would treat a former psychiatric patient just as they would treat anyone.	1	2	3	4	5	6
11.	Most young people would be reluctant to date someone who has been hospitalized for a serious psychiatric disorder.	1	2	3	4	5	6
12.	Once they know a person was in a psychiatric hospital, most people will take his or her opinions less seriously.	1	2	3	4	5	6

## Appendix N

### Personal Resource Questionnaire-2000 (PRQ-2000)

**Instructions:** Below are some statements with which some people agree and others disagree. Please read each statement and **CIRCLE** the response most appropriate for you. There is **no right or wrong answer**.

**1=Strongly disagree; 2=Disagree; 3=Somewhat disagree; 4=Neutral; 5=Somewhat agree; 6=Agree; 7=Strongly agree**

1.	There is someone I feel close to who makes me feel secure.	1	2	3	4	5	6	7
2.	I belong to a group in which I feel important.	1	2	3	4	5	6	7
3.	People let me know that I do well at my work (job, homemaking)	1	2	3	4	5	6	7
4.	I have enough contact with the person who makes me feel special	1	2	3	4	5	6	7
5.	I spend time with others who have the same interests that I do.	1	2	3	4	5	6	7
6.	Others let me know that they enjoy working with me (job, committees, projects)	1	2	3	4	5	6	7
7.	There are people who are available if I need help over an extended period of time.	1	2	3	4	5	6	7
8.	Among my group of friends we do favors for each other.	1	2	3	4	5	6	7
9.	I have the opportunity to encourage other to develop their interests and skills.	1	2	3	4	5	6	7
10.	I have relatives or friends that will help me out even if I can't pay them back.	1	2	3	4	5	6	7
11.	When I am upset, there is someone I can be with who lets me be myself.	1	2	3	4	5	6	7
12.	I know that others appreciate me as a person.	1	2	3	4	5	6	7
13.	There is someone who loves and cares about me.	1	2	3	4	5	6	7
14.	I have people to share social events and fun activities with.	1	2	3	4	5	6	7
15.	I have a sense of being needed by another person.	1	2	3	4	5	6	7

## Appendix O

### Brief Sense of Community Index-Disability (BSCI-D)

***Sense of community*** means the sense of belonging and connections you have in your community. ***Community*** can refer to a geographical location (e.g., town, city, and neighborhood) and can also refer to common value and interest.

**Instructions:** Read each statement carefully. Circle the number that best describes how you feel about each statement.

**1=Strongly disagree; 2=disagree; 3=Neutral; 4=Agree; 5=Strongly agree**

1.	I can recognize most of the people at the community.	1	2	3	4	5
2.	Very few people at the community know me.	1	2	3	4	5
3.	I have almost no influence over what the community is like.	1	2	3	4	5
4.	My neighbors and I want the same things from the community.	1	2	3	4	5
5.	If there is a problem in this community people who live here can get it solved.	1	2	3	4	5
6.	People in this community watch out for each other.	1	2	3	4	5
7.	It is very important for me to feel a strong sense of community in my community.	1	2	3	4	5
8.	I feel a strong sense of community in my community.	1	2	3	4	5
9.	Sometimes I feel unwelcome in the community because of my disability.	1	2	3	4	5
10.	Some people in my community give me a hard time because of my disability.	1	2	3	4	5
11.	People in this community are afraid of me because of my disability.	1	2	3	4	5

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