USING THE WORLD HEALTH ORGANIZATION'S INTERNATIONAL CLASSIFICATION OF FUNCTIONING, DISABILITY, AND HEALTH (ICF) MODEL AS A FRAMEWORK TO PREDICT PARTICIPATION AND QUALITY OF LIFE (QOL) IN ADULTS WITH SEVERE MENTAL ILLNESS

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DEDICATION

To my children, Jeanniesse Caitlin Sánchez and Damien Michael Sánchez, who served as my inspiration; to my parents, Peter Leandro Sánchez and Amalia Guarda; who believed in and supported me emotionally; to my brothers, John Alexander Sánchez and Peter Brian Sánchez, who served as my role models; and to God, who gave me the strength, courage, and wisdom to accomplish this goal; without all of them, none of this would be possible.

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ABSTRACT

Community integration is fundamental to the quality of life (QOL) of adults with severe mental illness. However, the participation rate, in active rather than passive activities, of people with severe mental illness is chronically low. A thorough understanding of complex person-environment factors and their interaction effects on participation and QOL will help rehabilitation researchers and clinicians better understand the dynamics of severe mental illness and barriers to participation so that they can develop effective interventions to improve participation and QOL outcomes of adults with severe mental illness. The purpose of this study was to evaluate the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) model as a framework to predict participation and quality of life (QOL) in adults with severe mental illness. The contribution of each individual ICF construct on participation (primary model) and the interaction effects among ICF constructs were analyzed using hierarchical regression analysis. Results from the hierarchical regression analysis suggest that demographic covariates, personal characteristics, environmental influences, mental functioning, and ADL/IADL capacity account for 22% of the variance in participation in this study. This study also examined the contribution of each individual ICF construct (including participation) on QOL (expanded model) and the interaction effects among ICF constructs were also analyzed using hierarchical regression analysis. Results from the hierarchical regression analysis suggest that demographic covariates, personal characteristics, environmental influences, mental functioning, ADL/IADL capacity, and participation account for 58% of the variance in QOL in this study. This study contributes new knowledge about the effect of personal characteristics, environmental influences, mental functioning, and ADL/IADL capacity on participation of adults with severe mental illness, and of personal characteristics, environmental influences, mental functioning, ADL/IADL capacity, and participation on QOL of adults with severe mental illness, providing research evidence and theoretical guidance for developing and validating evidenced-based treatments. Clinical interventions focused on enhancing social competency, social support, ADL/IADL capacity, and participation and reducing societal stigma and psychological distress, are likely to increase participation, and subsequent QOL outcomes for adults with severe mental illness.

CHAPTER ONE

Introduction

This chapter provides an overview of the relationship between activity, participation, and quality of life (QOL) in adults with severe mental illness. Factors that promote recovery in adults with severe mental illness are introduced. An overview of the International Classification of Functioning, Disability, and Health (ICF) developed by the World Health Organization (WHO) and its current challenges are provided. Additionally, a description of the problem, a theoretical framework, and the purpose of this study are explained.

Statement of the Problem

It is estimated that about 6% of the adult U.S. population is affected by a severe mental illness (National Institute of Mental Health [NIMH], 2013). Specifically, the most prevalent is bipolar affecting 2.2%, followed by depression affecting 2.0%, then schizophrenia affecting 1.1% (NIMH, 2013), and schizoaffective disorder affecting 1.0% of the U.S. adult population (National Alliance on Mental Illness [NAMI], 2012).

A major impediment for individuals with severe mental illness is significant impairment in social functioning (Liberman, DeRisi, & Mueser, 1989). Emotional functioning is another area of impairment for people with severe mental illness (Meehl, 1962). Additionally, individuals with severe mental illness may present with behavioral dysfunction. As a result of all of these deficits, individuals with severe mental illness often do not engage in self-care; social, community, and civic activities; and employment (Tschopp & Frain, 2009). In fact, many researchers conclude that poor social functioning is one of the greatest impediments to recovery and independence in the community (e.g., Gittelman-Klein & Klein, 1969).

The most common activity in which adults participate is employment; it is central to an adult's identity within society. Research indicates that clinical outcomes are improved with paid or non-paid work, as well as with work-related interventions (Bell & Lysaker, 1997). Yet, individuals with severe mental illness are more likely to be unemployed or underemployed than individuals without mental illness. It has been suggested that the onset of a psychiatric disability can limit one's vocational opportunities (Tschopp & Frain, 2009). The employment rate for persons with severe mental illness is estimated to be between 15% and 25% (Anthony & Jansen, 1984; Lehman, 1995; Ridgeway & Rapp, 1998). Additionally, individuals with a mental illness are more prone to termination from employment than individuals without a mental illness (Nelson & Kim, 2011).

The lack of participation in employment proves costly not only for the individuals with severe mental illness, but for society as a whole. The U.S. Surgeon General's Report on Mental Health (1999) reported an annual loss of $79 billion for businesses due to both absenteeism and presenteeism as indirect costs of untreated mental health disorders. Insel (2008) stated that total direct and indirect costs for serious mental illnesses were $317.6 billion in 2002. Specifically, approximately $193 billion was from lost earnings and wages, $24 billion was for disability benefits (Insel, 2008), and $100 billion was in healthcare expenditures (Mark, Levit, Buck, Coffey, & Vandivort-Warren, 2007).

Lemay (2006) indicated that individuals with mental illness are more socially isolated and have greater difficulty integrating into society than individuals without a mental illness. This may be directly related to their deficient social functioning. Similarly, Wang (2011) also concluded that individuals with severe mental illness engaged mostly in passive social community participation. Tshopp and Frain (2009) reported that individuals with psychiatric disabilities often require assistance in completing activities of daily living (ADLs; e.g., bathing) as well instrumental activities of daily living (IADLs; e.g., medication management). Individuals with severe mental illness also demonstrate low levels of participation in civic activities (e.g., voting, self-advocacy, neighborliness; Liberman & Kopelowicz, 2002).

Several psychiatric variables have been found to correlate with participation in life activities. For example, various studies have demonstrated that there is an inverse relationship between severity of symptomology and level of activity participation (Purvis, Ohlsen, O'Toole, Pilowsky, & Brown, 2004; Wing & Brown, 1970). A variety of symptoms have also been found to correlate with QOL. For example, specific symptoms such as depression and anxiety correlate more strongly with negative QOL than do psychotic symptoms (de Haan, Weisfelt, Dingemans, Linszen, & Wouters, 2002; Huppert & Smith, 2001). In fact, some studies have reported that psychotic symptoms do not affect QOL (e.g., Naber et al., 2001). Still, other researchers have reported that certain psychotic symptoms (e.g., paranoid ideation, reality distortion) are inversely correlated with QOL (Ritsner, 2003; Ritsner et al., 2003). Overall, severity of psychiatric symptoms is negatively correlated with QOL (Browne et al., 1996; Ho, Nopoulos, Flaum, Arndt, & Andreasen, 1998).

Insight, or lack thereof, can be either beneficial or detrimental to individuals with severe mental illness. Clients with adequate insight tend to fare better with adherence to treatment. For clients without insight into either their disorder, or the benefits of medication, adherence to medication is often an issue (Schooler, 2006). Yet, individuals with insight endorse both greater cognitive complaints (Bayard, Capdevielle, Boulenger, & Raffard, 2009; Prouteau et al., 2004) and depression (Drake et al., 2004). Therefore, having either too much or not enough insight may impede recovery.

Baker, Jodrey, and Intagliata (1992) found that QOL was significantly related to availability and adequacy of social support in adults with severe mental illness. Hansson et al. (1999) found that having close and ample social supports was associated with better QOL. More recently, researchers have reported that higher QOL is positively associated with supportive relationships between adults with schizophrenia and their mothers (Greenberg, Knudsen, & Acshbrenner, 2006), in addition to having at least one non-related source of social support and strong relationships with siblings (M. Smith & Greenberg, 2007).

Societal and internalized stigma can be deleterious to individuals with mental illness (Corrigan, 2004). There is significant research that demonstrates that individuals with mental illness face difficulty integrating into society. For example, finding and maintaining employment (Link, 1987) as well as access to safe housing (Wahl, 1999) can be difficult due to prejudice toward individuals with mental illness. Even more disturbing is that, when all other variables are accounted for, individuals with mental illness are arrested at higher rates than individuals who do not have a mental illness (Teplin, 1984). Consequently, individuals with mental illness may avoid seeking treatment in order to avoid getting labeled (i.e., public stigma), leading to personal suffering (i.e., internalized stigma; Corrigan, 2004). When individuals with mental illness experience stigmatization and discrimination, one negative result is lower QOL (Link, 1987).

There are certain personal factors that appear to be directly related to recovery in individuals with mental illness, primarily resilience. Shatte and Reivich (2002) identified seven factors that encompass resilience: emotion regulation, impulse control, causal analysis, self-efficacy, realistic optimism, empathy, and reaching out—the ability to enhance the positive aspects of one's life and take on new challenges and opportunities. Research has continually demonstrated that individuals with severe mental illness have a tendency to perform worse socially, than their differently-abled, peers.

Acceptance of one's disability is also an essential factor in recovery. Wright (1983) explained that in order for individuals to accept their disability, certain transitions in thinking must emerge. There are several major changes that indicate acceptance of disability: (a) enlargement of the scope of values, (b) subordination of the physique, (c) containment of disability effects, and (d) transformation from comparative to asset values (Smedema, Bakken-Gillen, & Dalton, 2009; Wright, 1983). Psychosocial adaptation to chronic illness and disability (CID) and QOL were found to have a positive correlation (Ferrin, Chan, Chronister, & Chiu, 2010).

Quality of life is a relatively new outcome of interest. The WHO defined QOL as an "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (The WHOQOL Group, 1998, p. 551). While the construct of QOL is qualitative in nature, researchers attempt to quantify it for statistical analysis. As such, there are both subjective and objective ways of quantifying QOL. Subjective measures may include self-reports, while objective measures may include such determinants as level of independence, socioeconomic status (SES), and community involvement. There are multiple domains that could be evaluated to determine QOL including physical health, psychological functioning, level of independence, social relationships, environment, and spirituality/religion/personal beliefs, as well as overall quality of life and general health (The WHOQOL Group, 1997).

Psychiatric treatment of individuals with mental illness has evolved over the centuries. Initially, treatment was prescribed in asylum settings during the 1800s. Next, the mental hygiene movement was incorporated and psychopathic hospitals were built during the late 1800s to early 1900s. Finally, the deinstitutionalization movement emerged with care to be provided in the home and at community mental health centers from the mid 1900s to the present. The focus of psychiatric treatment has shifted from confining individuals with mental illness, to guiding recovery and promoting QOL by integrating them within their communities via independent living, employment, and leisure activities (Corrigan, Rao, & Lam, 2005). The release of patients with psychiatric disabilities into the community without proper supports, however, led to a transinstitutionalization movement, with many individuals finding themselves newly housed in jails and prisons. In addition, numerous individuals faced the compounded stress of homelessness. However, there are individuals who are successful in maintaining their independence within the community, proving that recovery is possible, even with the most serious of mental illnesses. This study investigated why some individuals succumb to their mental illness and lack meaningful participation in life activities, while others transcend their symptomology and lead engaged and meaningful lives.

Theoretical Framework

The ICF is comprehensive and can be utilized within the United States as well as internationally (Chan, Gelman, Ditchman, Kim, & Chiu, 2009; Chan, Tarvydas, Blalock, Strauser, & Atkins, 2009; Peterson & Rosenthal, 2005; WHO, 2001). The ICF stands to promote international collaboration on disability research, education, and implementation of services (Heinemann, 2010; Peterson & Rosenthal, 2005; Smart & Smart, 2006; WHO, 2001). It provides unified language for addressing disability and disability-related issues (Chan, Gelman, et al., 2009; Peterson & Rosenthal, 2005; WHO, 2001). The biggest strength in the ICF model is in its potential to unify the concept of disability at a global level among researchers, educators, medical and supporting professionals, and to promote inter-disciplinary as well as multi-disciplinary treatment (Chan, Gelman, et al., 2009; Peterson & Rosenthal, 2005; WHO, 2001). Another asset is that it provides a new paradigm in which health, rather than illness, is the focus (WHO, 2001); it describes health as the interaction between body functions and structures, activity, participation, and contextual factors (i.e., personal and environmental; see figure 1.1).

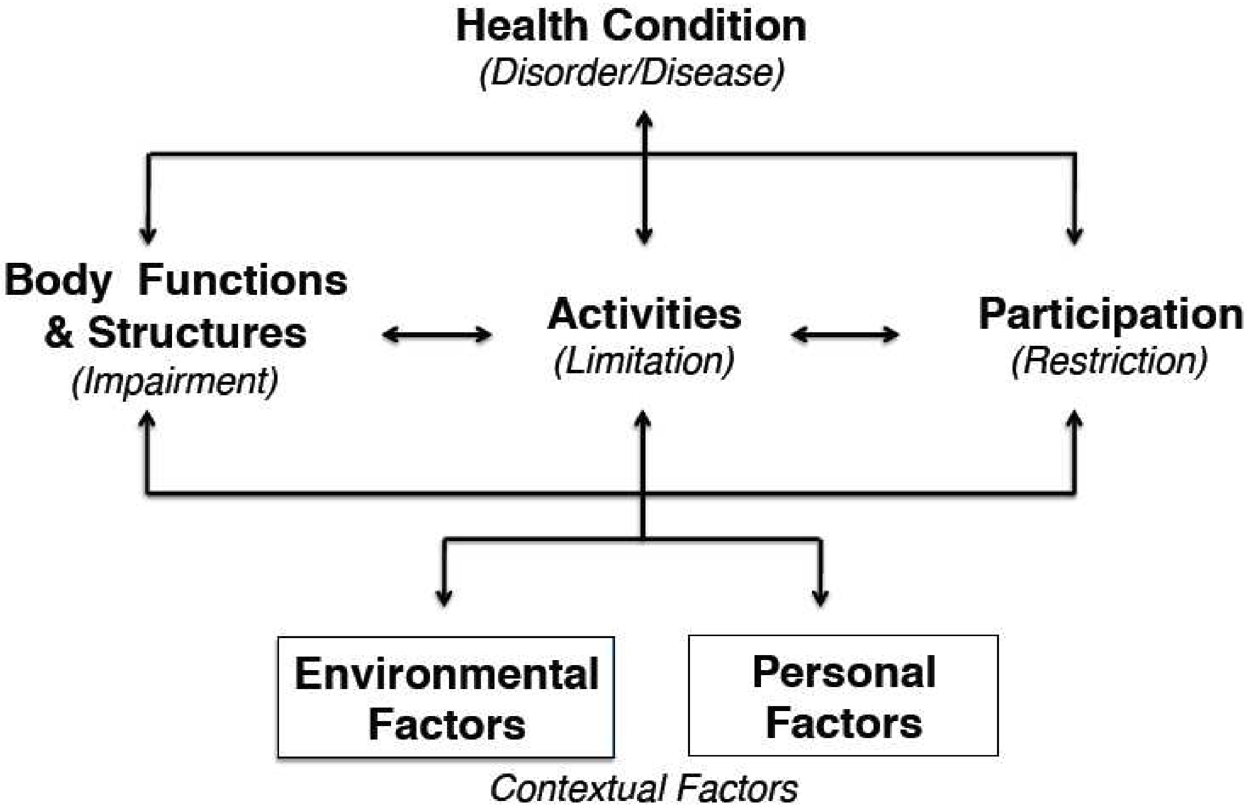

Figure 1.1. The ICF model as conceptualized by the WHO (2001).

The key construct of the ICF model is the focus on health as a whole of many parts, either as primary or secondary factors (Chan, Gelman, et al., 2009). The ICF model is made up of two parts. The first part is comprised of physical functions and structures, activity, and participation, and the second part is comprised of environmental factors and personal factors which when all are taken into account define an individual's health and/or disability (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Smart & Smart, 2006; WHO, 2001; Wong, Chan, Cardoso, Lam, & Miller, 2004). Body functions and structures are organized according to body systems. Activity refers to the potential (or ability) to carry out an action or a task by an individual, while participation refers to actual participation in activities and the extent of participation (Chan, Gelman, et al., 2009; Smart & Smart, 2006; WHO, 2001). The ICF identifies nine activity and participation domains. Environmental factors are external features within society (e.g., societal attitudes), while personal factors are individual and personal characteristics (e.g., disability acceptance) that may impact any component of the ICF model. Together these constructs define the person's health outcome (Chan, Gelman, et al., 2009; Smart & Smart, 2006; WHO, 2001).

The ICF is an enablement model (Chan, Gelman, et al., 2009; Smart & Smart, 2006). It assumes that biological, personal, and environmental factors are involved in the enablement process. Therefore, it could also be viewed as a biopsychosocial model (Chan, Gelman, et al., 2009). The WHO (2001) assumes that activity and participation are distinct constructs and that participation can be measured. The ICF has incorporated various factors that contribute to a person's disability or lack of disability (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Peterson, 2005; Peterson & Rosenthal, 2005; WHO, 2001; Wong et al., 2004). Disability is seen as residing on a continuum in which any person can be found to have a disability (WHO, 2001).

There is significant research that has emerged regarding factors that promote recovery in people with mental illness (e.g., Anthony, 1993). Recently, application of the ICF model as a biopsychosocial framework to conceptualize mental illness, including schizophrenia has been explored (Vroman & Arthanat, 2012). However, to date, the ICF has not been operationalized to serve as a discrete model; therefore investigating certain components of the ICF interaction of environmental and personal factors seems warranted.

Statement of Purpose

In this study, the ICF model was used as a framework to investigate personal contextual factors (i.e., internalized stigma, resilience, disability acceptance, empathy, and social competency), environmental contextual factors (i.e., social support and societal stigma), mental functioning (i.e., psychological symptoms, cognitive functioning, and insight), and activity (i.e., functional and life skill capacity) as predictors of participation (in various life activities) and quality of life in adults with severe mental illness (see figure 1.2). This study should serve to inform us regarding the different characteristics of individuals that succumb to their mental illness versus those that transcend their mental illness. Although no interventions were used and no manipulation of variables was conducted, results of this study could provide suggestive information as to potential interventions that could be utilized for adults with severe mental illness.

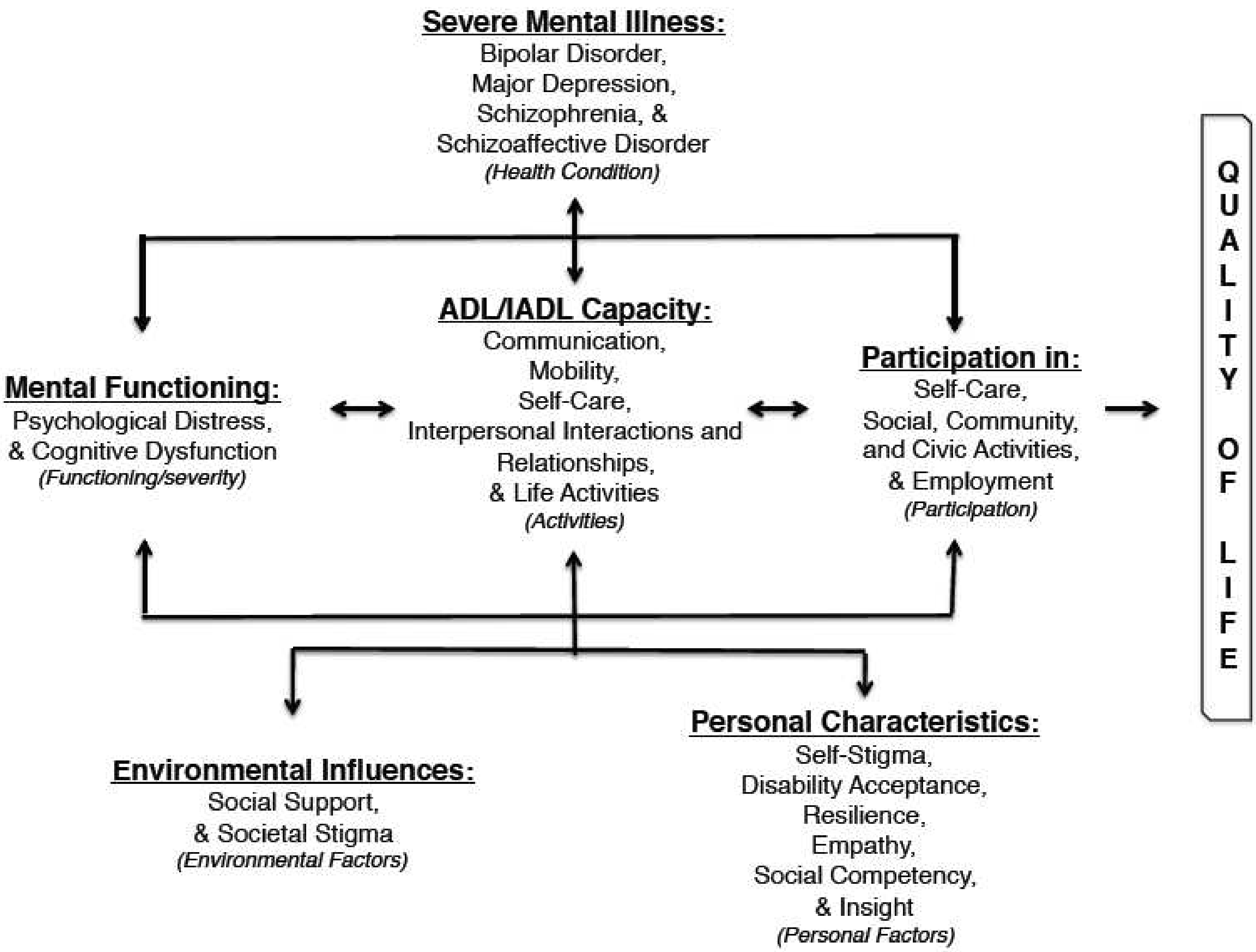

Figure 1.2. The ICF model as conceptualized for this study.

Research Questions

This study served to answer two research questions. These research questions are specified below.

Research question 1: Do the ICF constructs of *personal factors, environmental factors, mental functioning, and activities*) **predict** *participation in life activities* for adults with severe mental illness? For this research question, it is hypothesized that all four contributing *ICF constructs* account for a significant amount of variance in *participation in life activities*.

Research question 2: Do the ICF constructs of *personal factors, environmental factors, mental functioning, activities, and participation in life activities* **predict** *QOL* in adults with severe mental illness? For this research question, it is hypothesized that all five contributing *ICF constructs* account for a significant amount of variance in *QOL*.

CHAPTER TWO

Review of the Literature

This chapter provides a review of the current literature regarding adults with severe mental illness and the variables of interest in the present study to inform the research design and the subsequent discussion regarding research findings. In addition, a thorough review of the ICF model was conducted in order to describe its historical development, components, and research needs.

Severe Mental Illness

People with severe (or serious) mental illness can be defined as individuals with a long history of hospitalizations or intensive outpatient treatment due to severe psychosocial dysfunction (Parabiaghi, Bonetto, Ruggeri, Lasalvia, & Leese, 2006). A severe mental illness can be described as involving ***both*** a mental illness ***and*** a functional disability (Barton, 1998). Severe mental illness includes bipolar disorder, major depressive disorder, schizophrenia, and schizoaffective disorder, as well as substance-related disorders and personality disorders.

Diagnosis. In the United States, the Diagnostic and Statistical Manual of Mental Disorders (DSM), published by the American Psychiatric Association (APA) is used to diagnose psychiatric disorders based on specific criteria. Although currently in its fifth edition (DSM-5, 2013), many states and agencies still utilize the previous edition, (i.e., DSM-IV-TR, 2000), which uses a multiaxial system. There are five axes in total.

Axis I. Clinical disorders are located on Axis I. This includes disorders usually diagnosed in infancy, childhood, or adolescence; delirium, dementia, and other cognitive disorders; mental disorders due to a general medical condition; substance-related disorders; schizophrenia and other psychotic disorders; mood disorders; anxiety disorders; somatoform disorders; factitious disorders; dissociative disorders; sexual and gender identity disorders; eating disorders; sleep disorders; impulse-control disorders; and adjustment disorders.

Axis II. Personality disorders and intellectual disabilities (previously termed mental retardation) are located on Axis II. These disorders usually first arise in childhood and remain life-long. They are distinct from the clinical disorders of Axis I, which are often symptomatic of Axis II.

Axis III. General medical conditions are located on Axis III. These are general medical (physical) concerns that may have a bearing on understanding the client's mental disorder, or in the management of the client's mental disorder.

Axis IV. Psychosocial and environmental problems are located on Axis IV. This includes problems with the primary support group; problems related to social environment; educational problems; occupational problems; housing problems; economic problems; problems with access to health care services; problems related to interaction with the legal system/crime; and other psychosocial and environmental problems.

Axis V. Global assessment of functioning (GAF) is located on Axis V. This is a number from 1-100 that reflects the caregiver's judgment of the overt level of functioning.

The DSM-5 removed the multiaxial system; information from Axis I, II, and III are conveyed in a list format. The GAF is no longer used; rather the DSM-5 currently offers numerous standardized assessments for symptom severity, diagnostic severity, and disability.

Symptoms. Clinical presentation varies by diagnosis; however, some patterns may overlap and it is not uncommon for individuals to have multiple diagnoses or have their diagnoses changed throughout the course of their life. The most common symptoms experienced by individuals with severe mental illness include hallucinations, delusions, depression, and mania.

Hallucinations. Hallucinations are sensations that appear real to the individual, but are created by their mind, and that no one else perceives as real. They can involve any of the five senses: auditory hallucinations (e.g., hearing voices), visual (e.g., seeing people), tactile (e.g., feeling someone's touch), olfactory (e.g., smelling food), and gustatory (e.g., tasting metal).

Delusions. A delusion is an unshakable theory or belief in something false and highly unlikely, despite evidence to the contrary. The most common delusions include delusions of persecution or paranoia (i.e., belief that others are out to get him or her, which often involve bizarre ideas and plots), delusions of reference (i.e., a neutral event is believed to have a special and personal meaning), delusions of grandeur (i.e., a belief that one is a famous or important figure or has unusual powers that no one else has) and delusions of control (i.e., a belief that one's thoughts or actions are being controlled by outside, alien forces, which include thought broadcasting, thought insertion, and thought withdrawal).

Depression. Depression is a mood marked by minimal interest or pleasure in life. Symptoms may include difficulty concentrating, remembering details, and making decisions; fatigue and decreased energy; feelings of guilt, worthlessness, and/or helplessness; feelings of hopelessness and/or pessimism; insomnia, early morning wakefulness, or excessive sleeping; irritability, restlessness; loss of interest in activities or hobbies once pleasurable, including sex; loss of pleasure in life; overeating or appetite loss; persistent aches or pains, headaches, cramps, or digestive problems that do not ease even with treatment; persistent sad, anxious, or "empty" feelings; and thoughts of suicide or suicide attempts.

Mania. Mania is an abnormal and persistent elated, expansive, or irritable mood. Symptoms include excessive happiness, hopefulness, and excitement; sudden changes from being joyful to being irritable, angry, and hostile; restlessness, increased energy, and less need for sleep; rapid talk, talkativeness; distractibility; racing thoughts; high sex drive; tendency to make grand and unattainable plans; tendency to show poor judgment, such as impulsively deciding to quit a job; inflated self-esteem or grandiosity (unrealistic beliefs in one's ability, intelligence, and powers), which may be delusional; and increased reckless behaviors (such as lavish spending sprees, impulsive sexual indiscretions, abuse of alcohol or drugs, or ill-advised business decisions).

Although there are similarities in severe mental illnesses, there are also differences. Bipolar disorder is characterized by extreme fluctuations in “mood, energy, activity levels, and the ability to carry out day-to-day tasks” (NIMH, 2008). Major depression consists of symptoms so severe that they impact one’s ability to “work, sleep, study, eat, and enjoy life” (NIMH, 2011). Symptoms of schizophrenia include hallucinations, delusions, disorganized speech, catatonic behavior, and individuals may “have difficulty holding a job or caring for themselves” (NIMH, 2009). Schizoaffective disorder is characterized by symptoms of both schizophrenia and a mood disorder (i.e., bipolar or depression) and as a result individuals may “have trouble holding down a job or attending school” (NAMI, 2012).

Prevalence and incidence rates. Within any 12-month period, approximately 26% of the United States population will meet the criteria for a psychiatric diagnosis (Kessler, Chiu, Demler, & Walters, 2005). Recently, Hyde (2012) estimated that half the American population would meet the criteria for a mental illness at some point in their lives. More specifically, about 6% of the adult U.S. population is affected by a severe mental illness, with 2.2% affected by bipolar disorder, 2.0% affected by depression, 1.1% affected by schizophrenia (NIMH, 2013), and 1.0% affected by schizoaffective disorder (NAMI, 2012). Alarmingly, however, an estimated 26% of homeless adults have a serious mental illness (U.S. Department of Housing and Urban Development, Office of Community Planning and Development [CPD], 2011). Approximately 20% of prisoners were identified as having a current or recent mental illness (James & Glaze, 2006). In addition, 10.8% of adults on probation and 12.1% of adults on parole had a severe mental illness (Substance Abuse and Mental Health Services Administration [SAMHSA], 2013).

Adults with severe mental illness percentages vary by age groups, with 4.1% aged 18 to 25, 5.2% aged 26 to 49, and 3.0% aged 50 or older (SAMHSA, 2013). Women (4.9%) were more likely than men (3.2%) to have a severe mental illness. With regard to race and ethnicity the percentage of adults with a severe mental illness was 4.2% for Caucasian or Whites, 3.4% for African Americans or Blacks, 8.5% for Native Americans or Alaska Natives, 2.0% for Asians, 1.8% for Native Hawaiians or Other Pacific Islanders, 4.2% for Bi-Racial or Multi-Racial adults, and 4.4% for Hispanics or Latinos (SAMHSA, 2013). Education level of adults with severe mental illness also varied with regard to a diagnosis of severe mental illness. Specifically, 4.8% of adults with less than a high school education, 4.4% of adults with a high school degree, 4.4% of adults with some college credit, and 3.1% of adults with a college degree had a severe mental illness (SAMHSA, 2013). Severe mental illness was found to a greater extent among adults that were unemployed (7.8%) than among adults who were employed either part time (3.9%) or full time (2.7%); with adults who were employed part time experiencing severe mental illness more than those who were employed full time (SAMHSA, 2013). Similarly, health benefits (i.e., type of health insurance) varied among adults with severe mental illness accordingly: 2.7% had private health insurance, 8.5% received Medicaid, 4.4 received some other form of health insurance, and 6.1% had no health insurance (SAMHSA, 2013).

Secondary (or comorbid) conditions are not uncommon for individuals with mental illness. It is estimated that 7% of the adult population (34 million) have comorbid mental illness and physical disabilities within a given year (Hyde, 2012). Yet, 27.3% of adults with severe mental illness had comorbid substance dependence or abuse (SAMHSA, 2013). However, that probability increases dramatically for homeless adults, with approximately 46% having co-occurring severe mental illness and substance-related disorders (CPD, 2011). A major concern for individuals with mental illness is suicide. Coincidently, 90% of individuals who died by suicide had a mental illness.

Recovery. Recovery is a broad concept, which can take on various meanings. The lack of consensus on the meaning of recovery leads to different findings in research about recovery. Some of the meanings of recovery found in the literature are explained below. Harrow and Jobe (2007) defined recovery as the absence of major symptoms and adequate psychosocial functioning. Fitzpatrick (2002) suggested that recovery exists on a continuum, with three points on the continuum being: (a) the medical model, (b) the rehabilitative model, and (c) the empowerment model.

Andresen, Oades, and Caputi (2003) indicated that psychological recovery most mirrored consumer beliefs, which they defined as “the establishment of a fulfilling, meaningful life, and a positive sense of identity founded on hopefulness and self-determination” (p. 588). Andresen, Caputi, and Oades (2006) even identified a five-stage model of recovery: (1) moratorium—sense of loss and worthlessness accompanied by withdrawal; (2) awareness—sense of possible life fulfillment by realizing all is not lost; (3) preparation—start to develop recovery skills by taking inventory of strengths and weaknesses; (4) rebuilding—set meaningful goals, take control of one's life by working toward a positive identity; and (5) growth—positive sense of self, resilience, and illness management by living a full and meaningful life. Anthony (1993) defined recovery as the "development of new meaning and purpose in one's life as one grows beyond the catastrophic effects of mental illness" (pg. 529).

Mental Health Agencies Promoting Recovery

Individuals with mental health conditions can receive treatment services from various providers in a variety of settings, including specialty settings that provide treatment either outpatient or inpatient, general medical providers, non-specialty settings that provide treatment in schools, nursing homes, or correctional facilities, and through prescription medications (SAMHSA, 2012). There are several rehabilitation agencies focused on improving the mental health of individuals with mental illness. A number of the agencies are considered evidence-based: programs of assertive community treatment (PACT in Wisconsin) or assertive community treatment (ACT elsewhere), community support systems (CSSs) or community support programs (CSPs), and "clubhouses."

Assertive community treatment. PACT was established in the 1970s following research findings from the late 1960s to the early 1970s at Mendota Mental Health Institute in Madison, Wisconsin with the intent of developing a new approach in psychiatric rehabilitation. The ACT model uses assertive outreach and maintains small consumer to staff ratios to encourage frequent interaction with its consumers (Bond & Resnick, 2000). Treatment is individualized to meet the consumers' needs and does not have a time limit. Although ACT's goal is to empower individuals with severe mental illness, Diamond (1996) rebutted that ACT contradicted its mission by using coercive tactics:

> The staff on the ACT teams can visit consumers who miss appointments or, if needed, go to a consumer's apartment on a daily basis to ensure that medication is being taken. Staff often have regular communication with landlords, families, and employers. The ACT teams can apply to the Social Security Administration to get a financial payee assigned to control the consumer's Supplemental Security Income (SSI) money, or apply for a guardianship to control other aspects of the consumer's life. The involvement of the treatment team in all aspects of the consumer's life and with all elements of the consumer's support system is responsible both for the effectiveness of these teams and for their potential coerciveness. (p. 52)

However, a recent study found that despite being criticized as coercive, recipients of ACT's services did not perceive ACT negatively, nor that they perceive that they were being coerced (Tschopp, Berven, & Chan, 2011).

Community support programs. The Community Support Program (CSP) began as a small federal program established by the NIMH in 1975 (NIMH, 1987). State mental health authorities were awarded grants to assist in the provision of mental health services for adults with severe mental illness. The NIMH presented the concept of a community support system (CSS) and described how services should be provided for adults with severe mental illness (Turner & TenHoor, 1978). Identified needed services included housing, income support, medical care, employment, basic living supports (such as food stamps), employment, transportation and education, in addition to clinical treatment. The CSS was defined as a network of caring and responsible people committed to assisting a vulnerable population meet their needs and develop their potentials without being unnecessarily isolated or excluded from the community" (Turner & Schifren, 1979, p. 2).

Clubhouses. Fountain House was the first of hundreds of clubhouses (Anderson, 1998). The Fountain House was established in 1948 in New York City in efforts to address the issue of social isolation that many individuals with severe mental illness experience. The clubhouse model aligns with rehabilitation philosophy. A clubhouse, as a psychiatric rehabilitation model, refers to a place where its members (i.e., individuals with a psychiatric disability) participate in programmed day activities and create social support networks by befriending other members (International Center for Clubhouse Development [ICCD], 2010). Members of clubhouses participate voluntarily and they share responsibilities with staff; in turn, this promotes recovery by maximizing physical and mental functioning (Beard, Propst, & Malamud, 1994). The clubhouse seeks to create a supportive environment and enhance QOL.

The clubhouse model differs from other types of community-based rehabilitation services (e.g., ACT, CSP), in that members go to the clubhouse to engage in various activities, rather than having services delivered in homes and/or the community. Membership count of clubhouses in the United States average between 65 and 150 active members; however, it is estimated that only about 40% of the members participate in or attend clubhouse activities on any given day, due to other commitments (e.g., employment; Macias, Jackson, Schroeder, & Wang, 1999). A recent survey study reported that average daily attendance in clubhouses ranged from 31 members in non-ICCD certified clubhouses to 79 members in ICCD certified clubhouses (ICCD, 2010). One of the main differences in ICCD certified versus non-certified clubhouses is the lack of uniformity in how services are provided, or rather how standards are adhered to. For example, in order for a clubhouse to become certified, it must be located in an accessible part of the neighborhood, maintain a “work-ordered” day, members and staff work together and make decisions together, among other things. A non-certified home is not necessarily held to these standards.

Recovery agencies. Another type of community mental health agency exists that promotes mental health recovery through peer support. The individuals that attend also go the agency to receive support and interact with peers. A main difference is that their focus does not primarily focus on employment. In addition, they have a prominent focus on spirituality and the interconnection between the spiritual, mental, physical, and relational. These agencies are also nationally and internationally available, albeit on a smaller scale. Finally, these agencies are relatively new and have only been around for approximately two decades.

Evolution of the ICF Model

Prior to the development of the ICF model, there existed other, less sophisticated models, including the medical model and the social model.

The medical model. Perhaps the medical model's greatest asset is that it is the oldest model and has extensive scientific validity and evidence to support it (Chan, Gelman, et al., 2009; Pledger, 2003; Smart & Smart, 2006; Stewart & Ware, 1992). The medical profession has historically been concerned with the prevention mortality and morbidity and has kept this model dominating in the healthcare field, ranging from direct healthcare to the insurance industry (Chan, Gelman, et al., 2009; Pledger, 2003; Smart & Smart, 2006; Stewart & Ware, 1992). Due to the life-or-death situations of trauma, this model has its merits in that realm; however, with the changing definition of disability to include learning disabilities, mental illness, and chronic illness, the medical model is lacking (Chan, Gelman, et al., 2009).

Although clinicians have attempted to include environmental issues, medical professionals have been reluctant to do so (Stewart & Ware, 1992). As early as 1935, Lewin's field theory explained that behavior (B) is a function (*f*) of the person (P) and the environment (E), stated algebraically, $B = f(P, E)$. Wright (1983) expanded on Lewin's field theory to explain that a person's environment directly affects disability. Wright also explained that disability does not occur in insolation and that economy (manual or service-oriented) is impacted differently in regards to type of disability (physical or cognitive). For example, an individual with a physical disability would have greater deficits in manual versus service-oriented employment and an individual with a cognitive disability would have greater deficits in service-oriented versus manual labor.

The medical model's weakness then lies in its presumption of disability being viewed as an illness or impairment and residing solely within the individual (Chan, Gelman, et al., 2009; Pledger, 2003; Smart & Smart, 2006; WHO, 2001). Individuals are viewed as damaged and the goal is to fix them (Chan, Gelman, et al., 2009; Smart & Smart, 2006). The care is purely medical in nature, treatment is individual, and adjustment is therefore expected at the personal level (WHO, 2001). The medical model has been criticized for being highly paternalistic and hierarchical, with care determined for the individual by professionals (e.g., Chan, Gelman, et al., 2009), and for ignoring social issues (Pledger, 2003; Smart & Smart, 2006). Disability via the medical model is defined as pathology, and emphasis is placed on individual characteristics and deficits (Pledger, 2003). Individuals with disabilities understand that they belong to a devalued group; "… many individuals with disabilities may see no value in trying to integrate into a society that automatically discounts and pathologizes them" (Smart & Smart, 2006). Wright (1983) explained that, when individuals are labeled and categorized, prejudice and stigma result. The medical model opens up individuals with disabilities to be viewed as responsible for a disability by previous sin, as charity cases, as owning special skills, as incomplete, as unable to care for themselves, as needing to be protected from others or themselves, and as being regarded with prejudice and discrimination by others; as a result they frequently experience loss of opportunities and poverty (Wright, 1983). Additionally, interprofessional collaboration is also restricted with the medical model (Smart & Smart, 2006).

The social model. The first enablement model to come about was the social model (Pledger, 2003). Thomas (2004) reported that the ideas of environment impacting disability had been evident in the rehabilitation literature long before Pledger reported the model as being new and innovative. The premise is that a person's environment can either ameliorate or negatively impact disability, based on whether the environment is accommodating or hostile (Livneh & Male, 1995; Tate & Pledger, 2003). Tate and Pledger stated that everyone can be viewed as having a disability and that providing a more easily navigable environment would benefit society as a whole. The National Institute on Disability and Rehabilitation Research (NIDRR) developed a socioecological model putting emphasis on society rather than the individual in terms of disability (Tate & Pledger, 2003). This model was created by individuals with disabilities and they place the responsibility of disability in the hands of society (Livneh & Male, 1995; Pledger, 2003). In this model stigma and prejudice are reduced, as individuals with disabilities are no longer viewed as being at fault for their own disabilities (Chan, Gelman, et al., 2009; Livneh & Male, 1995). This model is therefore an improvement to the medical model, but not without its limitations as this model completely disregards the biological functions or impairments (Chan, Gelman, et al., 2009; Livneh & Male, 1995; Pledger, 2003; Tate & Pledger, 2003).

The ICF model. The ICF model improved the aforementioned biomedical and social models, as well as the functional model, incorporating them into one model (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Smart & Smart, 2006; WHO, 2001). The WHO (1980) contributed greatly to the rehabilitation literature by providing distinct and clear definitions to three key words: impairment, disability, and handicap. Where impairment occurs at the organ level, disability concerns functional performance or limitations, and handicap focuses on the person's interaction with and adaptation to their surroundings. The WHO (2001) broke ground again with their ICF model. The biggest strength is its potential to unify the concept of disability at a global level among researchers, educators, and medical and supporting professionals, while also promoting inter-disciplinary and multi-disciplinary treatment (Chan, Gelman, et al., 2009; Peterson & Rosenthal, 2005; WHO, 2001).

Although the ICF model resolves limitations within other models of disability, it is not without its own limitations (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Dijkers, Whiteneck, & El-Jaroudi, 2000; Heinemann, 2010; Wong et al., 2004). One of the limitations of this model is that it does not distinguish well between activity and participation (Wong et al., 2004). Another issue is that it does not provide key definitions of participation (Peterson, 2005; Wong et al., 2004). The most relevant issue is that there is no one measurement tool designed to measure participation (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Dijkers, 2010; Heinemann, 2010; Heinemann et al., 2010; Peterson, 2005).

Theoretical Framework of the ICF Model

The key construct of the ICF model is the focus on health as a whole of many parts, either as primary or secondary factors (Chan, Gelman, et al., 2009). The ICF model is made up of two parts. The first part is comprised of physical functions and structures, activity, and participation, and the second part is comprised of environmental factors and personal factors which, when all are taken into account define an individual's health and/or disability (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Smart & Smart, 2006; WHO, 2001; Wong et al., 2004).

Body functions and structures are organized according to body systems. Body functions consist of eight components: (1) mental functions; (2) sensory functions and pain; (3) voice and speech functions; (4) functions of the cardiovascular, hematological, immunological, and respiratory systems; (5) functions of the digestive, metabolic, and endocrine systems; (6) genitourinary and reproductive functions; (7) neuromusculoskeletal and movement-related functions; and (8) functions of the skin and related structures. Body structures align with the body functions but deal with the anatomy and also consist of eight components: (1) structures of the nervous system; (2) the eye, ear, and related structures; (3) structures involved in voice and speech; (4) structures of the cardiovascular, immunological, and respiratory systems; (5) structures related to the digestive, metabolic, and endocrine systems; (6) structures related to the genitourinary and reproductive systems; (7) structures related to movement; and (8) skin and related structures.

Activity refers to the potential to carry out an action or a task by an individual, while participation refers to actual participation in activities and the extent of participation (Chan, Gelman, et al., 2009; Smart & Smart, 2006; WHO, 2001). The ICF identifies nine activity and participation domains: (1) learning and applying knowledge; (2) general tasks and demands; (3) communication; (4) movement; (5) self-care; (6) domestic life areas; (7) interpersonal interactions; (8) major life areas; and (9) community, social, and civic life.

Environmental factors are external features within society, including products and technology; natural environment and human-made changes to the environment; support and relationships; attitudes; as well as services, systems, and policies (Chan, Gelman, et al., 2009).

Finally, personal factors are individual and personal characteristics that may impact any component of the ICF model. They are comprised of gender, age, other health conditions, coping style, social background, education, profession, past experience, and character style (Chan, Gelman, et al., 2009; Smart & Smart, 2006; WHO, 2001). Together these constructs define the person's health outcome.

The ICF is an enablement model (Chan, Gelman, et al., 2009; Smart & Smart, 2006). Initial models of disability focused on disability rather than enablement. The link between various factors, such as active pathology, impairment, functional limitation, and disability were believed to create disablement within the individual. More specifically, biological, personal, and environmental factors could be involved in the process of disablement (Nagi, 1991; Pope & Tarlov, 1991). However, the ICF model assumes that the same factors involved in the disablement process could be viewed inversely; that is, the same biological, personal, and environmental factors could also be involved in the enablement process (i.e., reversal of the disablement process; Brandt & Pope, 1997). It could also be viewed as a biopsychosocial model (Chan, Gelman, et al., 2009), where previous models of disability focused on just one aspect (e.g., biological, psychological, or social), the ICF focuses on the interaction of all of the factors. The WHO (2001) assumes that activity and participation are distinct constructs and that participation can be measured. The ICF has incorporated various factors that contribute to a person's disability or lack of disability (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Peterson, 2005; Peterson & Rosenthal, 2005; WHO, 2001; Wong et al., 2004). Disability is seen as residing on a continuum in which any person can be found to have a disability (WHO, 2001).

The ICF is comprehensive and can be utilized within the United States as well as internationally (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Peterson & Rosenthal, 2005; WHO, 2001). The ICF stands to promote international collaboration on disability research, education, and implementation of services (Heinemann, 2010; Peterson & Rosenthal, 2005; Smart & Smart, 2006; WHO, 2001). In addition it provides unified language for addressing disability and disability-related issues (Chan, Gelman, et al., 2009; Peterson & Rosenthal, 2005; WHO, 2001).

The ICF is not without its limitations. For example, the ICF does not provide a specific instrument for measuring participation, thereby limiting application (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Dijkers, 2010; Heinemann, 2010; Heinemann et al. 2010; Peterson, 2005; Peterson & Rosenthal, 2005; Wong et al., 2004). This could be due to the fact that “the ICF is too large and complex to translate easily into an assessment instrument” (Chan, Gelman, et al., 2009, p. 45). Alternatively, the theory behind the ICF may be difficult to truly implement due to limited ways of gathering data (Chan, Gelman, et al., 2009). Another related issue is the ICF’s lack of key definitions for activity and participation (Peterson, 2005; Wong et al., 2004).

There is significant research that has emerged regarding factors that promote recovery in people with schizophrenia (e.g., Anthony, 1993). Recently, application of the ICF model as a biopsychosocial framework to conceptualize mental illness, including schizophrenia, has been explored (Vroman & Arthanat, 2012). However, to date, the ICF has not been operationalized to serve as a discrete model; therefore investigating certain components of the ICF interaction of environmental and personal factors seems warranted.

Cultural relevance. The ICF uses person-first language (Chan, Gelman, et al., 2009). It is comprehensive and can be utilized within the United States as well as internationally (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Peterson & Rosenthal, 2005; WHO, 2001). WHO (2001) recommends combining the ICF with the ID-10 in order to keep diagnosis uniform on a global level. ICF stands to promote international collaboration on disability research, education, and implementation of services (Heinemann, 2010; Peterson & Rosenthal, 2005; Smart & Smart, 2006; WHO, 2001). ICF provides unified language for addressing disability and disability-related issues (Chan, Gelman, et al., 2009; Peterson & Rosenthal, 2005; WHO, 2001).

Contextual factors. Environmental factors are external features within society, including products and technology; natural environment and human-made changes to the environment; support and relationships; attitudes; as well as services, systems, and policies (Chan, Gelman, et al., 2009). And, personal factors are individual and personal characteristics that may impact any component on the ICF model. They are comprised of gender, age, other health conditions, coping style, social background, education, profession, past experience, and character style (Chan, Gelman, et al., 2009; Smart & Smart, 2006; WHO, 2001). Together these constructs define the person's health outcome (Chan, Gelman, et al., 2009; Smart & Smart, 2006; WHO, 2001).

Activity refers to the potential to carry out an action or a task by an individual, while participation refers to whether the individual participates in activities and to what extent (Chan, Gelman, et al., 2009; Smart & Smart, 2006; WHO, 2001). The ICF identifies nine activity and participation domains: (1) learning and applying knowledge; (2) general tasks and demands; (3) communication; (4) movement; (5) self-care; (6) domestic life areas; (7) interpersonal interactions; (8) major life areas; and (9) community, social, and civic life.

Measurement and Assessment

Although there is not one assessment tool to measure the complexity of a disability, there has been research conducted on several assessments. One tool which has been used to measure participation and has been found to have some merit is the *Craig Handicap Assessment and*

Reporting Techniques (CHART), an old assessment tool which provides a simple objective measure of the degree of disability after years of rehabilitation in six of the WHO domains: physical independence, mobility, occupation, social integration, economic self-sufficiency, and cognitive independence (Chan, Gelman, et al., 2009; Perenboom & Chorus, 2003). CHART is one of he most prominently used activity-focused tools within the United States (Brown, 2010).

The *Impact on Participation and Autonomy Questionnaire* (IPA) and the *Community Participation Indicators* or *Community Participation Index* (CPI) are new instruments that were designed specifically to measure the ICF concept of participation (Chan, Gelman, et al., 2009). "The CPI takes a different approach with a subjective section labeled enfranchisement that asks respondents' how important each of the participation areas is, followed by how satisfied the person is in each area" (Whiteneck, 2010, p. S55). The *WHO Disability Assessment Schedule 2* (WHODAS II), developed by WHO has been tested in 21 sites and 19 countries, and consists of seven domains including participation in society (Perenboom & Chorus, 2003). The *Participation Measure for Post-Acute Care* (PM-PAC) is a tool to evaluate rehabilitation services received in outpatient or in home settings by measuring participation (Chan, Gelman, et al., 2009). PM-PAC contains a small number of items, offers a profile of participation, and may be better utilized as a preliminary instrument or when more detailed clinical information is not needed (Magasi & Post, 2010). CHART and PM-PAC focus specifically on participation (Whiteneck, 2010).

At a meeting of rehabilitation researchers the issue of a lack of uniform participation measure was brought up and attempts to find a solution were explored (Dijkers, 2010; Heinemann, 2010; Heinemann et al., 2010). Dijkers (2010) reported the results of qualitative versus quantitative measure for participation. Qualitative measures would include quality of life, education, family relationships, social relationships, and employment, among other things; while quantitative measures would include years of education achieved, number of friends, and number of hours worked, among other things (Dijkers, 2010). Heinemann et al. (2010) identified the *Patient-Reported Outcomes Measurement Information System* (PROMIS) as a promising measurement tool for participation:

> The social domain in PROMIS is defined as perceived well being regarding social activities and relationships, including the ability to relate to persons, groups, communities, and society as a whole; key components of social health and functioning include social role participation, social network quality, interpersonal communication, and social support. (p. S75)

Also, Neuro-QOL demonstrated potential in developing a patient-reported outcome “for adults and children responsive to the needs of researchers working with people who have a variety of neurologic disorders” (Heinemann et al., 2010, p. S75).

Application of the ICF Model in Rehabilitation

The potential with ICF is a unified approach at attacking the disability issue on a global level. With its culturally sensitive nature, the model shows promise at enhancing research potential, assistive technologies, healthcare of individuals, and multi-disciplinary collaboration (Chan, Gelman, et al., 2009; Chan, Tarvydas, et al., 2009; Peterson & Rosenthal, 2005; WHO, 2001). Peterson (2005) stated:

> The ICF has the potential to contribute to rehabilitation psychology research, program evaluations, clinical intervention, and social policy development in significant and useful ways if it is carefully, ethically, and systematically implemented in the same collaborative and international spirit in which it was conceived. (p. 111)

Recently, application of the ICF model as a biopsychosocial framework to conceptualize mental illness, including schizophrenia has been explored (Vroman & Arthanat, 2012). However, Wang (2011) advocated for more empirical research utilizing the ICF model.

CHAPTER THREE

Method

This chapter provides information about the methodology of the study design, procedures, sample size, characteristics of the participants, psychometric properties of the selected instruments, and statistical techniques.

Design

A quantitative descriptive design utilizing multiple regression and correlational analysis was used to evaluate the ICF model as a framework to predict participation and QOL in adults with severe mental illness (Heppner, Wampold, & Kivlighan, 2008). Specifically, hierarchical multiple regression was used to determine the unique contribution of each individual ICF construct (i.e., mental functioning, environmental factors, personal factors, and activities) on participation and quality of life in adults with severe mental illness and how the ICF factors interact with each other.

Procedures

The study investigator identified and contacted agencies serving people with severe mental illness. Agencies contacted included clubhouses (both ICCD certified and non-certified) and recovery agencies. Proposed study information was provided along with requests for permission to conduct research at their agency. Next, the required Human Subjects Protection Training for the University of Wisconsin-Madison (UW-Madison) Institutional Review Board (IRB) was completed and IRB consent forms, along with emails granting permission to conduct research from the sites were submitted to IRB for approval. Following IRB approval (Appendix A), flyers created by the investigator containing information about the research project (e.g., dates and locations) were disseminated electronically to each agency and were posted in common areas to advertise and encourage research participation. Research participation was entirely voluntary and anonymous.

The investigator for this project was present at each agency to conduct survey administration on site and in person. The investigator was residing in Texas while completing her pre-doctoral psychology internship and traveled to Wisconsin in order to be present at all sites. No agency staff or clubhouse member was involved in the data collection process. All participants were informed of the voluntary nature of the research, their rights as research participants, and the potential risks and benefits from participating in the study. The email addresses and/or telephone numbers of the investigator and the investigator's research advisor were given to participants for any future questions or assistance required. In addition, participants were given the telephone number of the UW–Madison Social and Behavioral Science IRB. Participants were asked to read and indicate their consent (by checking a box, writing the number assigned to their survey, and marking the date) on the informed consent form (Appendix B) before they proceeded to complete the subsequent demographic questionnaire and set of measures (Appendix C). Those who did not wish to participate were able to leave without any penalty or loss of any benefits or service eligibility.

Data were collected via paper survey packets. Interested participants were provided with the survey packet to complete along with an envelope. Participants were told to take as much time as they needed to complete the entire survey. They were allowed to take breaks if needed and they were informed that they could terminate their participation at any time (i.e., prior to completing the survey). The average completion time was estimated to be approximately 45 minutes. Once participants completed the survey, they sealed their survey packets in the blank envelopes provided and placed them into a designated depository. Participant responses were kept confidential; the investigator did not view any portion of the survey prior to deposit into receptacle, unless requested by participants. The participants were provided with a $10 Wal-Mart gift card upon completing and returning the survey, as reimbursement for their time and travel costs. To protect confidentiality, no personal (i.e., identifying) information was collected from participants for them to receive compensation.

Only aggregate data and results from the measure (i.e., frequency distributions, mean scores, and standard deviations) were provided to the participating agencies upon request. The agencies were not able to identify participants nor were they provided with any information regarding any individual participant's responses. The dataset was managed and used only by the investigators in this project.

Participant Sampling

The target participants in this study were adults with severe mental illness. In order to access a community sample, agencies known to provide services to individuals with severe mental illness who live in the community were examined. There are several types of evidence-based rehabilitation services available to individuals with severe mental illness, including the "clubhouse" model. In order for participants to be eligible for inclusion in the study, they had to meet the following criteria: (a) be 18 years of age or older; (b) have a primary diagnosis of severe mental illness; and (c) have the ability to read at a 6th grade level or above.

Participants

A total of 194 individuals with severe mental illness were recruited from four agencies in two states in the Midwestern and Southern United States.

Sample Characteristics

Descriptive data for the participants are presented in table Table 3.1. There were 29 (14.9%) participants aged 18-25, 50 (25.8%) participants aged 26-38, 48 (24.7%) participants aged 38-49, 60 (30.9) participants aged 50-64, and 6 (3.1%) participants aged 65 or older. The breakdown by gender was 103 (53.1%) females and 89 (45.9%) males. The majority of the participants described themselves as Caucasians (60.3%); 19.6% described themselves as African American, 1.5% as Native American, 1% as Asian, and 2.6% as bi- or multi-racial. In addition to their identified race, 23.7% identified as Hispanic/Latino. A majority of the participants were either single/never married (46.4%) or separated/divorced (26.8%); 18.6% were married or in a domestic partnership and 5.7% were widowed.

For employment status, 38.2% of the participants were either employed for wages (32.5%) or self-employed (5.7%), 39.7% were unemployed and either looking for work (20.1%) or not looking for work (19.6), 5.2% were homemakers, 6.2% were students, 1.5% were in the military, and 7.2% were retired. The majority of participants spent over 41 hours (22.7%) engaged in employment or employment-related activities; 14.9 % spent 15-34 hours; 13.4% spent 1-14 hours; and another 13.4% spent 35-40 hours engaged in employment or employment-related activities. Employment-related activities consisted of attending the clubhouse (i.e., work-ordered day), looking for employment, and going to school. The educational breakdown of the participants included 3.6% receiving up to an 8th grade education, 17% completed some high school (but no diploma was granted), 24.2% completed high school, 21.1% had post-secondary education (but not a degree), 6.7% completed trade/technical/vocational training, 14.6% completed an associate degree, 9.8% completed a bachelor degree, and 9.8% completed graduate study. About 50% of the participants received cash benefits (23.2% received SSDI, 18.0% received SSI, and 8.8% received both SSDI and SSI). About two-thirds (64.5%) of the participants received public insurance (Medicare: 15.5%, Medicaid: 32.5%, Medicare and Medicaid: 16.5%), 1.0% had private insurance, 9.8% had insurance though their employer, and 14.9% had no insurance. Almost all (84%) of the participants identified as being Christian; 5.2% identified as other, 3.1% identified with no religion, 2.1% identified as being Buddhist, 0.5% identified as being Jewish, and 0.5% identified as being Muslim.

For age of onset of their mental illness, 20.6% were diagnosed under 10 years of age, 9.3% were diagnosed between 10-14 years of age, 17.0% between 15-19 years of age, 13.9% were diagnosed between 20-24 years of age, 12.9% between 30-40 years of aged, and 14.9% diagnosed at 41 years or older. Participants' primary diagnoses were depression (38.1%), bipolar disorder (35.6%), schizophrenia (21.1%), and schizoaffective disorder (4.6%). Among the different types of secondary diagnoses that the participants experienced, 24.2% had a learning disability, 34.0% had anxiety, 9.3% had a traumatic brain injury (TBI), 3.1% had a spinal cord injury (SCI), 19.1% had posttraumatic stress disorder (PTSD), 20.1% had obsessive-compulsive disorder (OCD), 29.4 % had substance-related disorders, 4.1% had hypothyroidism, 6.2% had chronic obstructive pulmonary disease (COPD), 4.6% had hepatitis C, 1.0% had fluid-electrolyte disorders, 6.7% had obesity, and 24.2% had other disorders.

Table 3.1
Participant Demographic and Disability Characteristics (*N* = 194)

Demographic Covariates		***n***	**(%)**
Age:	18 – 25	29	(14.9%)
	26 – 37	50	(25.8%)
	38 – 49	48	(24.8%)
	50 – 64	61	(31.4%)
	65 +	6	(3.1%)
Gender:	Male	89	(45.9%)
	Female	104	(53.6%)
	Transgender	1	(0.5%)
Race:	Caucasian/White	138	(71.0%)
	African American/Black	45	(23.2%)
	Native American/Alaska Native	3	(1.6%)
	Asian/Pacific Islander	2	(1.0%)
	Bi-Racial/Multi-Racial	6	(3.2%)
Ethnicity:	Hispanic/Latino	74	(38.1%)
	Not Hispanic/Latino	120	(61.9%)
Marital status:	Single, never married	90	(46.4%)
	Married/domestic partnership	36	(18.6%)
	Separated or divorced	52	(26.8%)
	Widowed	11	(5.7%)
Education level:	Up to 8th grade	7	(3.6%)
	Some high school, no diploma	34	(17.5%)
	High school graduate, diploma/GED	50	(25.8%)
	Some college credit, no degree	43	(22.2%)
	Trade/technical/vocational training	13	(6.7%)
	Associate’s degree	9	(4.6%)
	Bachelor’s degree	19	(9.8%)
	Graduate degree	19	(9.8%)
Employment status:	Employed for wages	65	(33.5%)
	Self-employed	11	(5.7%)
	Unemployed, looking for work	40	(20.6%)
	Unemployed, not looking for work	39	(20.1%)
	Homemaker	10	(5.2%)
	Student	12	(6.2%)
	Military	3	(1.5%)
	Retired	14	(7.2%)
Hours worked:	1 – 14	26	(13.4%)
	15 – 34	29	(14.9%)
	35 – 40	26	(13.4%)
	41 +	44	(22.7%)
Cash benefits:	Social Security Disability Insurance (SSDI)	45	(23.2%)
	Supplemental Security Income (SSI)	35	(18.0%)
	Both SSDI & SSI	17	(8.8%)

	No SSDI nor SSI	97	(50.0%)
Health benefits:	Employer-based	19	(9.8%)
	Self-insured	2	(1.0%)
	Medicare	30	(15.5%)
	Medicaid	63	(32.5%)
	Both Medicare & Medicaid	32	(16.5%)
	No insurance	29	(14.9%)
Religious affiliation:	Christian	163	(84.0%)
	Jewish	1	(0.5%)
	Muslim	1	(0.5%)
	Hindu	0	(0.0%)
	Buddhist	4	(2.1%)
	Other	10	(5.2%)
	None	6	(3.1%)

Disability-related Variables		***n***	**(%)**
Age at onset:	Under 10	44	(22.7%)
	10 – 14	20	(10.3%)
	15 – 19	36	(18.6%)
	20 – 24	29	(15.0%)
	25 – 29	7	(3.6%)
	30 – 40	27	(13.9%)
	40 +	31	(15.9%)
Primary diagnosis:	Bipolar disorder	69	(35.6%)
	Depression	75	(38.7%)
	Schizophrenia	41	(21.1%)
	Schizoaffective disorder	9	(4.6%)
Secondary disorders:	Learning disability	47	(24.2%)
	Anxiety	66	(34.0%)
	Traumatic brain injury (TBI)	18	(9.3%)
	Spinal cord injury (SCI)	6	(3.1%)
	Posttraumatic stress disorder (PTSD)	37	(19.1%)
	Obsessive-compulsive disorder (OCD)	39	(20.1%)
	Substance abuse	57	(29.4%)
	Hypothyroidism	8	(4.1%)
	Chronic obstructive pulmonary disease (COPD)	12	(6.2%)
	Hepatitis C	9	(4.6%)
	Fluid/electrolyte disorders	2	(1.0%)
	Obesity	13	(6.7%)
	Other	47	(24.2%)

Measures

The criterion variables investigated in this study were participation and QOL. For the model to predict participation, the predictor variables comprised the four major components proposed in the ICF framework: (a) personal factors (consisting of self-stigma, disability acceptance, resilience, empathy, social competency, and insight); (b) environmental factors (consisting of social support and societal stigma); (c) mental functioning (consisting of psychological distress and cognitive dysfunction); and (d) activities (consisting of skills and abilities to complete activities of daily living [ADLs] and instrumental activities of daily living [IADLs]).

For the model to predict QOL, the predictor variables comprised all five major components proposed in the ICF framework: (a) personal factors (consisting of self-stigma, disability acceptance, resilience, empathy, social competency, and insight); (b) environmental factors (consisting of social support and societal stigma); (c) mental functioning (consisting of psychological distress and cognitive dysfunction); (d) activities (consisting of skills and abilities to complete ADLs and IADLs), and (e) participation (in various life activities).

Demographic Questionnaire

In order to facilitate the interpretation and generalizability of research findings, eight socio-demographic items related to personal characteristics and two disability-related items were used to capture the general characteristics of the participants. General socio-demographic questions include age, gender, race/ethnicity, education level, marital status, employment status/number of hours worked per week, cash/health benefits, and religious affiliation (i.e., Christian, Jewish, Muslim, Hindu, Buddhist, other, or none). Disability-related questions included age at onset and primary (i.e., bipolar disorder, major depression, schizophrenia, schizoaffective disorder)/secondary diagnoses (i.e., learning disability, anxiety, traumatic brain injury [TBI], spinal cord injury [SCI], posttraumatic stress disorder [PTSD], obsessive-compulsive disorder [OCD], substance abuse, hypothyroidism, chronic obstructive pulmonary disease [COPD], hepatitis C, fluid/electrolyte disorders, obesity, and/or others). This questionnaire was created specifically for use in this study.

Instrumentation for Predictor Variables

In addition to the socio-demographic and disability-related questions, instruments with well-documented reliability and validity were selected in order to measure the constructs represented in the ICF model. The descriptive statistics are listed in Table 3.2.

Personal characteristics. Personal factors were measured by using the *Self-Stigma Scale-Short Form* (SSS-S; Mak & Cheung, 2010), a measure of self-stigma; the *Brief Resilience Scale* (BRS; B. Smith et al., 2008), a resiliency measure; the *Adaptation to Disability Scale-Revised* (ADS-R; Groomes & Linkowski, 2007), an acceptance of disability measure; empathy was measured by using the *Perceived Empathic Self-Efficacy* scale (PESE; Di Giunta et al., 2010); social competency was measured by using the *Perceived Social Self-Efficacy* scale (PSSE; Di Giunta et al., 2010); and insight was measured using the *Insight Scale* (IS; Birchwood et al., 1994).

Table 3.2
Descriptive Statistics for Study Measures (*N* = 194)

ICF Constructs	**Instruments**	**# of Items**	**Response Range**	**Mean**	**(SD)**	**Chronbach's α**
Predictor Variables						
Personal Characteristics:						
Self-Stigma	SSS-S	9	1-4	2.40	(0.77)	.921
Disability Acceptance	ADS-R	23	1-4	2.70	(0.57)	.917
Resilience	BRS	6	1-5	3.16	(1.02)	.849
Empathy	PESE	6	1-5	3.80	(0.88)	.853
Social Competency	PSSE	5	1-5	3.70	(0.98)	.876
Insight	IS	8	1-3	2.46	(0.40)	.634
Environmental Influences:						
Social Support	MSPSS	12	1-7	4.62	(1.42)	.884
Societal Stigma	PDD	12	1-6	3.97	(0.99)	.871
Mental functioning:						
Psychological Distress	SCL-K-9	9	1-5	2.84	(0.93)	.856
Cognitive Dysfunction	SSTICS	18	1-5	2.42	(0.84)	.920
ADL/IADL Capacity:						
Activities	WHODAS-2	19	1-5	2.32	(0.81)	.923
Outcome Variables						
Participation:						
Participation in life activities	ILSS-SR	39	1-5	3.25	(0.77)	.925
Quality of Life:						
Life Satisfaction	SLDS	14	1-7	4.78	(1.15)	.896

Self-stigma. The original *Self-Stigma Scale* (SSS) was developed by Mak and Cheung (2010) with two groups of people with concealable (i.e., not overtly apparent) minority status: mental health consumers (MHC; i.e., individuals diagnosed with psychotic or mood disorders) and immigrant women (IW; Chinese women in Hong Kong). The original scale was created with 77 items, reduced to 48 items (prior to initial study), and resulted in 39 items following the first study; it yielded satisfactory internal consistency (α = .82). The SSS is composed of three subscales: (a) cognitive, (b) affective, and (c) behavioral. Following initial development of the SSS, a short version was extracted; the two scales are denoted by an "L" (long form) or "S" (short form). The SSS-S was developed to be an abbreviated self-report measure of self-stigma by taking the three items with the highest factor loadings in each subscale. Items are rated on a 4-point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree), with higher scores indicating greater internalized stigma. For continuity of items among scales, the items were numerated from 4 = strongly agree to 1 = strongly disagree. Sample items for the subscales include "My identity as a ___________ is a burden to me" (cognitive), "I fear that others would know that I am a ___________" (affective), and "I estrange myself from others because I am a ___________" (behavioral). For cross-population utility, "___________" was replaced by ‘‘mental health consumer’’ when used in the sample with the MHC, and by ‘‘recent immigrant’’ when used in the sample with IW. The SSS-S was highly correlated with the SSS-L in samples with MHC (r = .95) and IW (r = .93).

The internal consistency of the SSS-S was excellent in both the MHC (α = .91) and IW (α = .84) samples, mirroring results with the SSS-L in MHC (α = .97) and IW (α = .93) samples. Internal consistency of the subscales ranged from acceptable to excellent in the (a) cognitive (α = .81 [MHC], α = .67 [IW]); (b) affective (α = .84 [MHC], α = .66 [IW]); and (c) behavioral (α =

.80 [MHC], α = .70 [IW]) domains. The SSS-S was tested in three additional studies with MHC, IW, and individuals of sexual minority status (SM), where findings supported using the parsimonious total score rather than subscale scores. The internal consistency ranged from satisfactory with the MHC (α = .87) and IW (α = .84) sample groups, to excellent with an SM (α = .92 [gay men], α = .93 [lesbian women], α = .92 [bisexual individuals]) sample (Mak & Cheung, 2010).

Disability acceptance. The original Acceptance of Disability Scale (ADS) was developed by Linkowski (1971) as a self-report measure of one's accepting his or her disability. It was comprised of 50 items and designed to correspond to Wright's (1983) acceptance of loss theory (i.e., Enlargement of Scope of Values, Subordination of Physique, Containment of Disability Effects, and Transformation from Comparative Values to Asset Values). Bolton (1994) reported a high internal consistency (α = .93) with rehabilitation clients. Groomes and Linkowski (2007) reevaluated and shortened the ADS to 32 items and renamed it the Adaptation to Disability Scale-Revised (ADS-R). It is a self-report measure that reflects attitudes about the self, regarding a disability (e.g., "Disability or not, I am going to make good in life," "My disability affects those aspects of life that I care most about," and "If I didn't have my disability, I think I would be a much better person"). Items are rated on a 4-point Likert-type scale (0 = Strongly disagree; 1 = Disagree; 2 = Agree; 3 = Strongly agree); higher scores indicate greater acceptance.

The ADS-R has moderate to high internal consistency (α = .71 to .88) on the four subscales (i.e., Transformation, Enlargement, Containment, and Subordination) and similar reliability to the ADS (α = .93). For this study, only 23 items of the ADS-R were used; six items that are physical-disability specific (i.e., items 5, 9, 14, 18, 24, and 31) have been omitted, as severe mental illness is not a physical disability and three additional items (8, 17, 25) were removed due to their similarity in wording and potential overlap with other survey items. Additionally, in all items the term “disability” was changed to “mental health problems” (e.g., “Mental health problems or not, I am going to make good in life,” “My mental health problems affect those aspects of life that I care most about,” and “If I didn’t have mental health problems, I think I would be a much better person”), in order to better reflect terminology utilized and accepted by individuals with mental illness.

Resilience. The BRS was developed by B. Smith et al. (2008) to measure a person’s ability to bounce back from stressful situations. The BRS is composed of six items (e.g., “I tend to bounce back quickly after hard times.”). Participants are to complete the scale following the instructions: “Please indicate the extent to which you agree with each of the following statements by using the following scale.” The items are rated using a 5-point Likert-type scale (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree), with higher scores indicating greater resilience. Items are worded using both positive and negative statements; therefore, some items are reverse scored. Internal consistency was satisfactory (α = .80 to .91); test-retest reliability was also good, ranging from .62 (over three months) to .69 (over one month) in two different samples (B. Smith et al., 2008).

Empathy. The original PESE scale was created by Bandura, Caprara, Barbaranelli, Gerbino, and Pastorelli (2003) as a self-report measure of empathy and consisted of 12 items. The PESE was administered to a sample of older adolescents and demonstrated strong reliability (α = .89; Bandura et al., 2003). Di Giunta and colleagues (2010) developed the shortened version of the PESE by conducting a preliminary principal axis factor analysis of all 12 items and discarding the six items that loaded below .40, resulting in a 6-item scale. The correlation between the 12-item original scale and the 6-item abbreviated scale was excellent (*r* = .95). The scales were tested in three countries, Italy, United States, and Bolivia with samples of college students. The PESE was translated and backtranslated using Brislin's (1970) method. All items begin with the phrase "How well can you" followed by specific questions (e.g., "Recognize when someone wants comfort and emotional support, even if (s)he does not overtly exhibit it?"). Items are rated on a 5-point Likert-type scale (1 = not well at all; 2 = slightly well; 3 = moderately well; 4 = well; 5 = very well), with higher scores indicating greater empathy. Di Giunta et al. (2010) repeated the study with an Italian sample and concluded that the PESE was more highly correlated with empathy (*r* = .53) than with the PSSE (*r* = .35).

Social competency. The PSSE was developed by Di Giunta et al. (2010) to assess individuals' self-efficacy beliefs regarding their feelings and ability at managing interpersonal relationships. The scales were tested in three countries, Italy, United States, and Bolivia, with samples of college students. The PSSE was translated and backtranslated using Brislin's (1970) method. All items begin with the phrase "How well can you" followed by specific questions (e.g., "Express your opinion to people who are talking about something of interest to you?"). The scale consists of 5 items, which are rated on a 5-point Likert-type scale (1 = not well at all, 2 = slightly well, 3 = moderately well, 4 = well, and 5 = very well), with higher scores indicating better social competency. Di Giunta and colleagues (2010) found that the PSSE was more highly related to energy/extraversion (*r* = .57) than to the PESE (*r* = .35) in an Italian sample. Both the PESE and the PSSE demonstrated satisfactory psychometric properties in the Italian, U. S., and Bolivian samples (α = .78 to .69, .80 to .76, and .81 to .66, respectively).

Insight. The IS was developed by Birchwood and colleagues (1994). It is a measure of self-reported self-reflectiveness and overconfidence in interpreting experiences. It is composed of eight items and uses a 3-point Likert-type scale (0 = Disagree; 1 = Unsure; 2 = Agree). In order to maintain uniformity in the survey scale directionality, it was renumerated as 3 = Agree to 1 = Disagree. The scale consists of three insight subscales: (a) awareness of illness; (b) need for treatment; and (c) attribution of symptoms (i.e., relabeling symptoms). Typical statements include "I am mentally well" and "I do not need medication." The "awareness of illness" and "relabel" scales are comprised of two statements each; the "need for treatment" scale is comprised of four statements. Half of the items are reverse scored. Responses are summed, and then the total from the "need for treatment" subscale is divided by two, since it has twice as many items. Total scores range from 0 – 12, with higher scores indicating better insight. Reliability for the IS scale has been reported as high (α = .90), and moderate to high for the subscales: relabeling symptoms (α = .65), awareness of illness (α= .85), and need for treatment (α = .96; Birchwood et al., 1994). Support has been found for construct, concurrent, and criterion-related validity (Birchwood et al., 1994). Emmerson et al. (2009) found that greater insight (IS) and awareness of illness (subscale) were both significantly correlated with hopelessness (r = .26, r = .28, respectively). The wording of items 7 and 8 was slightly altered, for instance, "mental illness" was changed to "mental health problems" in order to better reflect consumer preference and the rehabilitation philosophy.

Environmental influences. Environmental factors were measured by using the *Multidimensional Scale of Perceived Social Support* (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988), a measure of perceived social support, and the *Perceived Devaluation-Discrimination Scale* (PDD; Link, 1987), a measure of perceived societal stigma.

Social support. The MSPSS was developed by Zimet et al. (1988) as a self-report measure of perceived social support. It is composed of 3 factors (i.e., Family, Friends, and

Significant Other), each containing 4 items for a total of 12 items. The items are rated on a 7-point Likert-type scale (1 = Very strongly disagree; 2 = Disagree; 3 = Slightly disagree; 4 = Neither agree nor disagree; 5 = Slightly agree; 6 = Agree; 7 = Very strongly agree). To maintain uniformity within all instruments used in this study, the scale was slightly modified and numerated from 7 = Very strongly agree to 1 = Very strongly disagree. Total scores can range from 12 to 84, with higher scores indicating higher levels of perceived social support. Zimet et al. (1988) reported good internal consistency reliability for the total scale (α = .88) as well as for each of the individual subscales (α = .85 to .91). Test-retest reliability was also strong for the scale as a whole ($r = .85$), and for the individual subscales ($r = .72$ to .85); however, the actual timeframe between test and retest was not reported and is therefore unknown (Zimet et al., 1988). A study with an ethnic and socioeconomically diverse college student sample supported the sound psychometric properties of the total scale (α = .91), as well as the subscales (α = .90 to .95; Dahlem, Zimet, & Walker, 1991). Another study mirrored previous results with a sample of urban adolescents demonstrating strong overall internal consistency reliability (α = .93) and a range of .86 to .95 for the subscales (Canty-Mitchell & Zimet, 2000). In a study with pregnant women, adolescents living in Europe with families, and pediatric residents, the MSPSS was shown to have internal consistency reliability for subscales ranging from .81 to .94, and strong reliability for the total score (α = .88; Zimet, Powell, Farley, Werkman, & Berkoff, 1990). More specifically, studies using the MSPSS found high internal consistency reliability for individuals with schizophrenia (α = .91) and major mood disorders (α = .94; Vaux, Burda, & Steward, 1986).

Societal stigma. The PDD was developed by Link (1987) as a measure of perceived stigma. The scale consists of 12 self-report items that “assess the extent to which an individual believes most people will devalue or discriminate against a psychiatric patient" (Link, 1987, p. 102). Items were rated 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), summed, and then divided by 12. To better align with the other survey items, in order to maintain uniformity, the items were numerated from 6 = Strongly agree to 1 = Strongly disagree. Half of the items are reverse scored and higher scores indicate greater perceived societal stigma towards persons with mental illness. The PDD has demonstrated adequate internal consistency reliability (α = .78). For this study, several terms were reworded in order to make them more socially acceptable; for example, the term "former mental patient" was replaced with "person with mental health problems" for each item, the terms "been in a mental hospital" and "was in a mental hospital" were replaced with "received mental health treatment," and "entering a mental hospital" was replaced with "seeking mental health treatment". Additionally, the wording of items was modified slightly so that the items were gender neutral. For example, in one item the wording "Most young women would be reluctant to date a man who has been hospitalized for a serious mental disorder" was modified to "Most young people would be reluctant to date someone who has received mental health treatment."

Mental functioning. Mental functioning was measured by rating the severity of psychological distress using the *Symptom Checklist Short Version-9* (SCL-K-9; Klaghofer & Brähler, 2001), and cognitive dysfunction with the *Subjective Sale to Investigate Cognition in Schizophrenia* (SSTICS; Stip, Caron, Renaud, Pampoulova, & Lecomte, 2003).

Psychological distress. The original version of the SCL-K-9 was developed by Klaghofer and Brähler (2001) as a unidimensional scale to measure symptom severity, and is an abbreviated version of the *Symptom Checklist-90-Revised* (SCL-90-R; Derogatis, 1992). The

SCL-K-9 is composed of nine items (i.e., 24, 28, 31, 34, 43, 57, 58, 75, 77), one from each of the original nine scales. Since the SCL-K-9 was developed in German, the same nine items that were used for the German scale were extracted from the original SCL-90-R (Derogatis, 1992) for this study. Klaghofer and Brähler selected the item from each subscale that correlated most highly with the general severity index (GSI), in order to mirror the SCL-90-R. The symptom categories include: (a) somatization; (b) obsessive compulsive; (c) interpersonal sensitivity; (d) depression; (e) anxiety; (f) hostility; (g) phobic anxiety; (h) paranoid ideation; and (i) psychoticism, which together provide the GSI (Derogatis, 1992). Items are rated on a 5-point Likert-type scale of distress (0 = not at all; 1 = a little bit; 2 = moderately; 3 = quite a bit; 4 = extremely), where higher scores indicate greater symptom severity. However, in order to maintain a sense of uniformity within all instruments used in this study, the scale was slightly modified and numerated from 5 = extremely to 1 = not at all, still maintaining that higher scores indicate a higher degree of distress. All items begin with the phrase "During the past 7 days, how much were you distressed by…" followed by specific questions (e.g., "Worrying too much about things" or "Feeling that you are watched or talked about by others"). There was also strong concordance with the GSI (*r* = .93). This scale was found to have satisfactory psychometric properties, including internal consistency (α = .80), and evidence of validity as demonstrated by strong correlation (*r* = .90) with the SCL-90-R and moderate correlation (*r* = .66) with the *Beck Depression Inventory* (BDI; Mu□ller, Postert, Beyer, Furniss, & Achtergarde, 2010). Other studies also found strong internal consistency (α = .82) with a sample of women with psychiatric disorders; some of whom experienced sexual trauma (Bühler, Eckle, Malti, & Modestin, 2010), as well as a positive correlation (*r* = .91) and strong internal consistency (α = .84) with a sample of individuals with affective disorders (Prinz et al., 2013).

Cognitive dysfunction. The SSTICS (Stip et al., 2003) was used to measure participant cognitive complaints. The SSTICS examines four areas of cognition that are known to be impaired in individuals with schizophrenia as well as other severe mental illnesses: memory, attention, executive function, and praxia. It is composed of 21 items that are rated on a 5-point Likert-type scale (0 = Never; 1 = Rarely; 2 = Sometimes; 3 = Often; 4 = Very Often), with higher scores indicating greater cognitive deficit. For this study the scale was numerated from 5 = very often to 1 = never to maintain consistency across scales. Sample items include “Do you have difficulty memorizing things, such as a grocery list or a list of names?” (memory); “Do you have trouble focusing your attention on the same thing for more than 20 minutes?” (attention); “Do you have difficulty planning out your activities as easily as you used to?” (executive function); and “Do you have difficulty finding your words, forming sentences, understanding the meaning of words, pronouncing words, or naming objects?” (praxia). It demonstrated good reliability for total scores ($\alpha = .86$) in a sample of French-speaking individuals with a diagnosis of a schizophrenia-spectrum disorder (i.e., schizophrenia, schizophreniform disorder, or schizoaffective disorder), followed by a sample of healthy volunteers. Test-retest reliability over an average of 11 days (range of 2 to 22 days) was also good ($r = .82$). Stip et al. (2003) found that scores on the SSTICS were positively associated with scores on the PANNS negative ($r = .23$) and general scores ($r = .26$), and negatively associated with insight ($r = –.18$). The scale was created in English and translated to French using Brislin’s (1970) method in order to use the scale with a French-speaking sample. One item (10) was slightly altered for this study; the term “Prime Minister of Canada” was changed to “President” in order to make it more relevant to the sample in the present study. Additionally, for this study, only 18 of the 21 items were used. Items 4, 11, and 21 were deleted due to overlap with other items.

ADL/IADL capacity. Activity-related skills were measured by using the *World Health Organization Disability Assessment Schedule 2.0* (WHODAS-2; Üstu□n, Kostanjsek, Chatterji, & Rehm, 2010). The WHODAS-2, originally developed by Üstu□n et al. (2010), was designed as a self-report measure of an individual's level of functioning in six major life domains: communication, mobility, self-care, interpersonal interactions and relationships, life activities, and participation. The participation domain was excluded for this study. The WHODAS-2 consisted of 36 items. For this study, 19 items were used (i.e., items 1.1, 1.2, 2.1, 2.2, 2.3, 2.5, and 3.4 were deleted; 5.3 was combined with 5.4, and 5.7 with 5.8; all participation items were deleted: 6.1 to 6.8). Responses are rated on a 5-point Likert-type scale (i.e., 1 = none, 2 = mild, 3 = moderate, 4 = severe, and 5 = extreme or cannot do). For this study the items were rated as 5 = extreme or cannot do, 4 = severe, 3 = moderate, 2 = mild, and 1 = none. All items begin with the phrase "In the past 30 days, how much difficulty did you have in:" followed by specific questions (e.g., "Starting and maintaining a conversation?").

The WHODAS-2 is "reliable and applicable across cultures in adult populations" (Üstu□n et al., 2010, p. 2); the study was cross-cultural, spanning 19 countries worldwide. Each site was required to have four groups with equal number of participants. The groups comprised of an equal number of males and females 18 years or older, consisted of: (a) healthy individuals; (b) individuals with physical disorders; (c) individuals with mental or emotional disorders; and (d) individuals with drug or alcohol problems. Individuals with mental health problems showed greater difficulty (i.e., scored higher) with understanding and communicating than did the other three groups. It demonstrated sound psychometric properties consisting of good internal consistency ($\alpha = .86$) and high test-retest reliability ($\alpha = .98$). Test-retest reliability as measured by the intraclass correlation coefficient (ICC); it ranged from .69 to .89 at the item level, between

.93 to .96 at the domain level, and .98 for the overall measure. The WHODAS-2 also demonstrated concurrent validity with the *WHO Quality of Life Scale* (WHO QOL; *r* = .68); the *London Handicap Scale* (LHS; *r* = .75); and the *Functional Independent Measure* (FIM; *r* = .68; Üstün et al., 2010). Several studies have since been conducted to further validate the WHODAS-2. Garin et al. (2010) found strong reliability (α = .95) in the WHODAS-2 with a sample of adults with chronic diseases, including mental illness.

Instrumentation for Outcome Variables

Participation is utilized as both an outcome variable, initially and as a predictor variable, subsequently.

Participation. The *Independent Living Skills Survey-Self-Report* (ILSS-SR; Wallace, Liberman, Tauber, & Wallace, 2000) was used to measure the participants' active participation in life activities. The ILSS was developed by Wallace et al. (2000) in two versions, an informant version (ILLSS-I) and a self-report version (ILSS-SR) as a measure of an individual's participation in ten life areas: appearance and clothing (AC), personal hygiene (PH), care of personal possessions (CPP), food preparation/storage (FPS), health maintenance (HM), money management (MM), transportation (T), leisure and community (LC), job seeking (JS), and job maintenance (JM). The ILSS-SR consisted of 61 items; 51 items were selected from the ILSS-I and were rephrased for self-report, and 10 items were added to increase items in several life areas. For this study, 39 items were used; some were deleted (i.e., CPP: 1 and 2; FPS: 6; HM: 1, 2, 5, 6; MM: 1; LC: 8), while others were combined (i.e., AC: 1, 2, and 3; PH: 1 and 2; 3, 4, and 5; CPP: 5 and 6; FPS: 1 and 2; 4 and 5; MM: 2 and 4; 3 and 5; T: 3 and 4; LC: 4 and 9; JS: 2 and 3). Responses were either "yes" (1), "no" (0), or "not apply" (X). However, for this study, the response format for the ILSS-I was utilized, which consisted of a 5-point Likert-type scale (i.e., 0

= never, 1 = sometimes, 2 = often, 3 = usually, and 4 = always) along with the option of “no opportunity” (i.e., X). In order to maintain continuity among the survey scales, the items were renumerated (i.e., 5 = always, 4 = usually, 3 = often, 2 = sometimes, 1 = never, and X = no opportunity). All items begin with the phrase, “In the last 30 days, how often did you?” followed by specific questions (e.g., “Change your underwear at least twice a week?”). Psychometric properties were acceptable: stability = 0.785 and inter-rater reliability = 0.444. It also correlated with other validated scales: the Global Assessment Scale (GAS = 0.375) and the Brief Psychiatric Rating Scale (BPRS = -0.318).

Quality of life. The *Satisfaction with Life Domains Scale* (SLDS; Baker & Intagliata, 1982) was used to measure perceived QOL. The scale consists of 15 total items and examines 15 life domains which include: (1) home, (2) neighborhood, (3) food, (4) clothing, (5) health, (6) cohabitants, (7) friendships, (8) family, (9) interpersonal relationships, (10) daily activities, (11) free time, (12) leisure, (13) services and facilities at place of residence, (14) economic situation, and (15) usual place of residence compared with the hospital. For this study 14 items were used (i.e., item 15 was deleted as it implies everyone with a severe mental illness has resided in a hospital). All items begin with the phrase “Which face comes closest to expressing how you feel about” or “Which comes closest to expressing how you feel about” followed by specific questions (e.g., “your house/apartment/place of residence?”). Items are rated on a 7-point Likert-type scale depicting faces with varying affect (7 = delighted; 6 = pleased; 5 = mostly satisfied; 4 = mixed-about equally satisfied and dissatisfied; 3 = mostly dissatisfied; 2 = unhappy; 1 = terrible), where higher scores indicate greater perceived QOL. General quality of life is also assessed by adding the scores across all of the domains.

The SLDS has been found to have satisfactory psychometric characteristics (Baker & Intagliata, 1982) in terms of internal consistency (α = .84), as well as convergent and divergent validity with the Bradburn Affect Balance Scale (*r* = .64) and the Global Assessment Scale (*r* = .29). Calsyn, Morse, Tempelhoff, Smith, and Allen (1995) also found satisfactory reliability (α = .84 to .92; test-retest occurred monthly to every three months over the period of one year, α = .86) in all domains examined (i.e., 1-14) for individuals with severe and persistent mental illness (SPMI) and significant correlation with the following scales: Alienation Measure (*r* = −.28; α = −.30), Brief Symptom Inventory (*r* = −.28; α = −.47), Personal and Social Network Adjustment Scale (*r* = .28; α = .58), and Rosenberg Self-esteem Scale (*r* = .33; α = .49).

Data Analysis

Most of the measures in this study had less than 5% missing values. A simple imputation method using regression was selected for handling missing data. The imputation method computes estimations based on the values of other related item variables in the same measure to replace missing data. This method is preferred over case deletion, since it will not decrease the sample size (i.e., statistical power loss) or affect the sample representativeness. According to Fox-Wasylyshyn and El-Masri (2005), simple imputation and multiple imputation methods will yield similar results when the missing data are less than 5%.

Scores on all measures were computed as the mean item responses for each instrument in order to facilitate understanding and interpretation of the meaning of scores in terms of participant responses. The Statistical Package for Social Sciences (SPSS) 20.0 for Windows was used to manage raw data and perform all data analyses. Data were analyzed using descriptive statistics, preliminary screening procedures, and hierarchical regression to test research hypotheses. Descriptive statistics was computed for all criterion variables and predictor variables to examine the shape of the distribution (normality, skewness, kurtosis), central tendency (mean, median, mode), and dispersion (range, variance, standard deviation). Frequencies, percentages, means, and standard deviations were used to summarize demographic characteristics and measured variables for all participants. All data were screened for missing information, outliers (Mahalanobis distances), and multicollinearity. Tests of regression assumptions, including normality (kurtosis and skewness), linearity, and homoscedasticity, were examined for all criteria variables and predictor variables. Coefficient alphas were used to estimate internal consistency of scores on each measure.

Sample Size

An *a priori* power analysis was conducted for the total R^2 value for a multiple regression analysis with 19 predictor variables, power = .80, and alpha = .05. G*Power (Faul, Eedfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007), a software tool for general power analysis, yielded a sample size of 153 for a medium effect size (f^2 = .15; Cohen, 1988). The 19 predictor variables consisted of six demographic characteristics (age, gender, race/ethnicity, education level, employment status, and cash benefits); six dimensions of personal factors (self-stigma, disability acceptance, resilience, empathy, social competency, and insight); two dimensions of environmental factors (social support and societal stigma); four disability-related characteristics (primary diagnosis, age at onset, psychological distress, and cognitive dysfunction); and one dimension of activity (life skills/abilities). This sample size was adequate for testing a regression model where the constructs are at least moderately correlated and the reliability of the measures adequate.

Another *a priori* power analysis was conducted for the total R^2 value for a second multiple regression analysis with 20 predictor variables, power = .80, and alpha = .05. G*Power

(Faul, Eedfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007), a software tool for general power analysis, yielded a sample size of 157 for a medium effect size ($f^2 = .15$; Cohen, 1988). The 20 predictor variables consisted of six demographic characteristics (age, gender, race/ethnicity, education level, employment status, and cash benefits); six dimensions of personal factors (self-stigma, disability acceptance, resilience, empathy, social competency, and insight); two dimensions of environmental factors (social support and societal stigma); four disability-related characteristics (primary diagnosis, age at onset, psychological distress, and cognitive dysfunction); one dimension of activity (life skills/abilities), and one dimension of participation (in various life activities). This sample size was adequate for testing a regression model where the constructs are at least moderately correlated and the reliability of the measures adequate.

Regression Analyses

The hypothesized relationships among constructs were tested using regression analyses (Cohen, Cohen, West, & Aiken, 2003). Regression analysis is a method appropriate for examining the predictive power of sets of predictor variables and the contribution of each predictor variable with the criterion variable (Hoyt, Imel, & Chan, 2008). This set of statistical procedures has been popular in counseling and rehabilitation research (Hoyt et al., 2008; Hoyt, Leierer, & Millington, 2006). Hoyt and colleagues (2008) suggested that the technique allows researchers to address various research questions in rehabilitation. More specifically, the theory-testing function and its contribution in informing theories in applied settings are often particularly useful. The result of regression analysis is an equation that represents the best prediction of a criterion variable from several continuous predictor variables.

Hierarchical Regression Analyses

Hierarchical regression analysis (HRA) was used to determine the correlation of each predictor set and to determine the unique contribution and predictive ability of each predictor variable to the variance in the criterion variable. In particular, HRA is beneficial when there is more than one predictor variable measuring a construct (Hoyt et al., 2008), because the change in R^2 (ΔR^2) shows the combined contributions of the set of predictor variables in the same construct in explaining variance in the criterion variable, while sr^2 indicates the unique variance shared by the specific criterion variable.

A predetermined order of the predictor variables or set of predictor variables should be entered into the regression model according to the theory on which the hypothesized relationships are based. In this study, hierarchical multiple regression analysis was used to examine the relationships between recovery factors distributed among the ICF constructs and participation and QOL of adults with severe mental illness. Each set of predictor variables that belongs to the same ICF construct was entered into the regression model in an order based on the theoretical expectations of the ICF framework to influence participation and QOL of adults with severe mental illness and assessed in terms of what it adds to the equation at its own point of entry (Tabachnick & Fidell, 2001). The significance was set at alpha = .05.

The first HRA (participation) included the following a priori specifications:

***** In *Step 1*, a set of *demographic* covariates was entered, which included age, gender, race/ethnicity, education level, employment status, and cash benefits.

***** In *Step 2*, one of the ICF contextual factors, *personal factors* (self-stigma, disability acceptance, resilience, empathy, social competency, and insight), was entered. In this step, the effects of personal factors on participation were determined, after controlling for the effect of demographic covariates.

***** In *Step 3,* the other ICF contextual factor, *environmental factors* (social support and societal stigma), was entered. In this step, the effects of environmental factors on participation were determined, after controlling for the effect of the demographic covariates and personal factors.

***** In *Step 4,* the ICF factors related to *mental functioning* variables were entered, which included primary diagnosis, age at onset, psychological distress, and cognitive dysfunction. In this step, the effects of mental functioning on participation were determined, after controlling for the effect of demographic covariates, personal factors, and environmental factors.

***** In *Step 5,* the ICF factors related to *activities* (life skills/abilities) variables were entered. In this step, the effects of life skills/abilities on participation were determined, after controlling for the effect of demographic covariates, personal factors, environmental factors, and mental functioning.

The second HRA (QOL) included the following a priori specifications:

***** In *Step 1,* a set of *demographic* covariates was entered, which included age, gender, race/ethnicity, education level, employment status, and cash benefits.

***** In *Step 2,* one of the ICF contextual factors, *personal factors* (self-stigma, disability acceptance, resilience, empathy, social competency, and insight), was entered. In this step, the effects of personal factors on QOL were determined, after controlling for the effect of demographic covariates.

***** In *Step 3,* the other ICF contextual factor, *environmental factors* (social support and societal stigma), was entered. In this step, the effects of environmental factors on QOL were determined, after controlling for the effect of the demographic covariates and personal factors.

***** In *Step 4,* the ICF factors related to *mental functioning* variables were entered, which included primary diagnosis, age at onset, psychological distress, and cognitive dysfunction. In this step, the effects of mental functioning on QOL were determined, after controlling for the effect of demographic covariates, personal factors, and environmental factors.

***** In *Step 5,* the ICF factors related to *activities* (life skills/abilities) variables were entered. In this step, the effects of life skills/abilities on QOL were determined, after controlling for the effect of demographic covariates, personal factors, environmental factors, and mental functioning.

***** In *Step 6,* the ICF factors related to *participation* (in various life activities) variables were entered. In this step, the effects of participation in various life activities on QOL were determined, after controlling for the effect of demographic covariates, personal factors, environmental factors, mental functioning, and activities.

CHAPTER FOUR

Results

The purpose of this study was to evaluate the ICF framework as a predictor model for participation and QOL for adults with severe mental illness. Hierarchical regression analysis (HRA) was used to determine the amount of variance in participation (primary model) that could be accounted for by sets of predictors representing personal factors, environmental factors, mental functioning, and activities ICF constructs. Then HRA was used to determine the amount of variance in QOL (expanded model) that could be accounted for by sets of predictors from the primary model along with participation. This chapter describes the results of the statistical analyses used to evaluate the two research questions.

Preliminary Data Screening and Analysis

Data for all predictor and criterion variables were screened using SPSS 20.0 for accuracy, data entry, multivariate outliers, and normality. The presence of multicollinearity was assessed by examining the variance influence factors (VIF) and tolerance. None of the VIF values exceeded 10 for any variables in the analyses (range, 1.028 to 2.708), and none of the tolerance values was less than .10 (range, .369 to .972), indicating 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 19 predictors and $p < .05$ criterion for Mahalanobis distance, no outliers were found from the multiple regression analysis, leaving the sample size of 194 intact. Histograms, scatter plots, and skewness and kurtosis statistics were used to assess normality and linearity; the assumptions of multivariate analyses were found to be met.

An *a priori* power analysis was conducted for the total R^2 value for a multiple regression analysis with 19 predictor variables, power = .80, and an alpha = .05. G*Power (Faul et al., 2007), a software tool for general power analysis, yielded a sample size of 153 for a medium effect size ($f^2 = .15$; Cohen, 1988). With 19 predictors in the study, the sample size of 194 was adequate. Similar statistical analyses were conducted for the expanded model (QOL). No VIF values exceeded 10 for any variables in the analyses (range, 1.028 to 2.710), and none of the tolerance values was less than .10 (range, .369 to .972), suggesting no multicollinearity in the data. No outliers were found using 20 predictors and $p < .05$ criterion for Mahalanobis distance. Normality and linearity were found via histograms, scatter plots, and skewness and kurtosis statistics. An *a priori* power analysis, conducted with G*Power (Faul et al., 2007) for the total R^2 value for a multiple regression analysis with 20 predictor variables, power = .80, and an alpha = .05, yielded a sample size of 157 for a medium effect size ($f^2 = .15$; Cohen, 1988); the sample size of 194 was adequate.

Descriptive Statistics

The majority of the participants were non-white (70.1%), with the remainder being Caucasian/White, non-Hispanic (29.9%). Most participants were not employed (61.0%) compared to those that were employed (39.0%). There was an even split between participants who received SSDI, SSI or both SSDI and SSI (50.0%) compared to those that did not receive either SSDI or SSI (50.0%). Finally, most of the participants had mood disorders (74.3%) compared to those that had psychotic disorders (25.7%).

The correlations between the criterion variable (participation) and the predictor variables ranged from small to medium, with Pearson Product-Moment correlation coefficients in the .03 to .32 range, while the correlations between the criterion variable (QOL) and the predictor variables (including participation) ranged from small ($r = .01$) to large ($r = .54$). Correlations and descriptive statistics for the predictor and criterion variables are provided in Table 4.1.

Table 4.1
Correlations, Means, and Standard Deviations for Variables Used in Hierarchical Regression Analyses

Variable	**O2**	**O1**	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**
Outcome										
O2. Quality of Life	1	X	—	—	—	—	—	—	—	—
O1. Participation	X	1	—	—	—	—	—	—	—	—
Predictors										
P1. Gender	.084	-.029	1	—	—	—	—	—	—	—
P2. Current Age	.114	.029	.087	1	—	—	—	—	—	—
P3. Educational Level	.130*	.240	.013	.206†	1	—	—	—	—	—
P4. Race/Ethnicity	-.081	-.175	.077	.119*	.017	1	—	—	—	—
P5. Employment Status	.133	.098	.065	-.315‡	.067	-.188†	1	—	—	—
P6. Cash Benefits		-.162	.072	.432‡	-.214‡	.315‡	-.446‡	1	—	—
P7. Self-Stigma	-.403‡	-.076	.051	-.118*	-.280‡	.244‡	-.043	.171†	1	—
P8. Disability Acceptance	.447‡	.128*	.014	.219‡	.435‡	-.046	-.055	-.082	-.593‡	1
P9. Resilience	.401‡	.171†	.126*	-.081	.225‡	-.330‡	.193†	-.332‡	-.379‡	.472‡
P10. Empathy	.243‡	.303‡	-.090	-.005	.400‡	-.257‡	.238‡	-.354‡	-.074	.282‡
P11. Social Competency	.396‡	.317‡	-.062	.112	.444‡	-.110	.164*	-.292‡	-.277‡	.428‡
P12. Insight	-.044	.189†	-.062	-.191†	.238‡	-.065	.173†	-.283‡	.097	-.058
P13. Social Support	.539‡	.243‡	-.026	-.198†	.117	-.259‡	.282‡	-.314‡	-.343‡	.311‡
P14. Societal Stigma	-.391‡	-.131*	-.071	-.142*	-.233‡	.018	.228‡	-.074	.469‡	-.382‡
P15. Primary Diagnosis	-.010	-.198	.214‡	.182†	-.212‡	.156*	-.244‡	.377‡	.134*	.042
P16. Age at Onset	.030	-.079	-.006	.543‡	-.017	.225‡	-.322‡	.336‡	-.042	.101
P17. Psychological Distress	-.508‡	-.039	-.179†	-.176†	-.139*	-.014	-.030	-.067	.407‡	-.472‡
P18. Cognitive Dysfunction	-.251‡	-.156*	-.105	.196†	-.193†	.191†	-.310‡	.148*	.247‡	-.256‡
P19. ADL/IADL Capacity	-.456‡	-.228†	-.084	-.004	-.171†	.194†	-.230‡	.131*	.456‡	-.507‡
P20. Participation	.275‡	X	-.029	.029	.240‡	-.175†	.098	-.162*	-.076	.128*
Mean	66.87	126.63	4.59	2.81	4.16	0.30	0.38	0.50	21.62	62.04
SD	16.13	29.86	0.50	1.12	1.99	0.46	0.49	0.50	6.95	13.06

Note: * $p \leq .05$; † $p \leq .01$; ‡ $p \leq .001$

Table 4.1
Correlations, Means, and Standard Deviations for Variables Used in Hierarchical Regression Analyses (Continued)

	P9	**P10**	**P11**	**P12**	**P13**	**P14**	**P15**	**P16**	**P17**	**P18**	**P19**	**P20**
Outcome												
O1	—	—	—	—	—	—	—	—	—	—	—	—
O2	—	—	—	—	—	—	—	—	—	—	—	—
Predictors												
P1	—	—	—	—	—	—	—	—	—	—	—	—
P2	—	—	—	—	—	—	—	—	—	—	—	—
P3	—	—	—	—	—	—	—	—	—	—	—	—
P4	—	—	—	—	—	—	—	—	—	—	—	—
P5	—	—	—	—	—	—	—	—	—	—	—	—
P6	—	—	—	—	—	—	—	—	—	—	—	—
P7	—	—	—	—	—	—	—	—	—	—	—	—
P8	—	—	—	—	—	—	—	—	—	—	—	—
P9	1	—	—	—	—	—	—	—	—	—	—	—
P10	.410‡	1	—	—	—	—	—	—	—	—	—	—
P11	.412‡	.631‡	1	—	—	—	—	—	—	—	—	—
P12	.093	.299‡	.100	1	—	—	—	—	—	—	—	—
P13	.390‡	.384‡	.301‡	.116	1	—	—	—	—	—	—	—
P14	-.283‡	-.057	-.162*	.157*	-.253‡	1	—	—	—	—	—	—
P15	-.122*	-.129*	-.278‡	-.052	-.165*	.029	1	—	—	—	—	—
P16	-.159*	-.070	.032	-.252‡	-.095	-.037	.086	1	—	—	—	—
P17	-.122‡	-.052	-.204†	.242‡	-.238‡	.271‡	-.168	-.081	1	—	—	—
P18	-.287‡	-.237‡	-.232‡	.028	-.276‡	.014	.073	.167	.524‡	1	—	—
P19	-.472‡	-.241‡	-.348‡	-.037	-.327‡	.219‡	.081	.141	.359‡	.516‡	1	—
P20	.171†	.303‡	.317‡	.189†	.243‡	-.131*	-.198	-.079	-.039	-.156*	-.228†	1
Mean	18.97	22.81	18.48	19.69	19.81	47.65	0.26	3.75	25.57	43.62	44.02	126.63
SD	6.14	5.26	4.91	3.20	6.46	11.90	0.44	2.06	8.41	15.18	15.33	29.86

Note: * $p \leq .05$; † $p \leq .01$; ‡ $p \leq .001$

Hierarchical Regression Analysis

Model to predict participation. The first HRA identified participation as the criterion variable and five sets of ICF variables entered as predictors in sequential steps: (a) demographic covariates, i.e., age, gender (the reference group is female), race/ethnicity (the reference group is white, non-Hispanic), education level, employment status (the reference group is unemployed), and cash benefits (the reference group is no SSDI nor SSI); (b) personal characteristics, i.e., self-stigma, disability acceptance, resilience, empathy, social competency, and insight; (c) environmental influences, i.e., social support and societal stigma; (d) mental functioning, i.e., primary diagnosis (the reference group is mood disorder), age at onset, psychological distress, and cognitive dysfunction; and (e) activities, i.e., ADL/IADL capacity.

For this study, demographic covariates were separated from and not entered with personal characteristics. The rationale was that demographic factors are more static and less amenable to change. In addition, for some demographic covariates (e.g., received SSDI, SSI, or both versus did not receive SSDI or SSI), dichotomous variables were used. This was done in order to retain power in the analysis while still evaluating their contribution to the participation model. HRA was used to examine the relative contributions of the five sets of ICF variables as predictors of participation in persons with severe mental illness. The results of the analysis, including values of change in R^2 (ΔR^2), along with unstandardized regression coefficients (B), standard errors (SE B), and standardized coefficients (β) for the predictor variables at each step and in the final model are presented in Table 4.2.

In the first step of the regression analysis, demographic covariates (i.e., age, gender, race/ethnicity, education level, employment status, and cash benefits) were entered. This set of demographic covariates accounted for a significant amount of variance in participation scores, R^2

= .096, *F* (6, 187) = 3.30, *p* = .004. An examination of the standardized partial regression coefficients, race/ethnicity and education level, found that they significantly contributed to the change in variance in participation scores, with β = –.153, *t* (193) = –2.07, *p* = .039; and β = .215, *t* (193) = 2.83, *p* = .005, respectively. However, the relationship between race/ethnicity was negative, indicating that being Caucasian/white, non-Hispanic was associated with lower levels of participation compared to non-white (e.g., African American/black, Native American/Alaska Native, Asian/Pacific Islander, Bi-Racial/Multi-Racial, Hispanic/Latino) individuals. The positive association between education level and participation indicates that the higher one's education, the more that he or she participates in various life activities.

Personal characteristics (i.e., self-stigma, disability acceptance, resilience, empathy, social competency, and insight) were entered in the second step of the regression analysis. This set of variables accounted for a significant amount of additional variance in participation scores beyond that explained by the demographic covariates entered in step one, R^2 = .156, ΔR^2 = .060, *F* (6, 181) = 2.78, *p* = .002. Social competency was found to significantly contribute to the change in variance in participation scores, with β = .221, *t* (193) = 2.25, *p* = .026. The results indicate that social competency was positively associated with participation, suggesting that higher social competency was associated with greater participation.

Environmental influences (i.e., social support and societal stigma) were entered in the third step of the regression analysis. This set of variables accounted for a significant amount of additional variance in participation beyond that explained by the demographic covariates and personal characteristic variables entered in previous steps, R^2 = .186, ΔR^2 = .030, *F* (2, 179) = 2.93, *p* = .001. However, neither of the two variables in this set was found to make an independent contribution to participation.

Table 4.2

Hierarchical Multiple Regression Analysis for Prediction of Participation (*N* = 194)

			At Entry into Model			Final Model		
Variable	R^2	ΔR^2	B	SE B	β	B	SE B	β
Step 1	.096	.096†						
Age			1.25	2.22	.574	3.14	2.69	.118
Gender			-1.29	4.22	-.022	-0.15	4.40	-.002
Race/ethnicity			-9.98	4.81	-.153*	-7.92	5.32	-.122
Education level			3.24	1.14	.215†	1.16	1.43	.077
Employment status			2.48	4.87	.040	-2.55	5.29	-.042
Cash benefits			-4.09	5.41	-.069	-1.20	5.73	-.020
Step 2	.156	.060†						
Self-Stigma			0.17	0.40	.039	0.74	0.44	.172
Disability Acceptance			-0.02	0.23	-.007	-0.11	0.25	-.046
Resilience			-0.03	0.45	-.005	-.038	0.46	-.079
Empathy			0.32	0.58	-.057	0.16	0.60	.028
Social Competency			1.35	0.60	.221*	1.03	0.61	.169
Insight			1.10	0.72	.118	1.23	0.75	.131
Step 3	.186	.030‡						
Social Support			0.69	0.39	.149	.065	0.40	.140
Societal Stigma			-0.33	0.22	-.130	-0.32	0.22	-.129
Step 4	.206	.020‡						
Primary Diagnosis			-8.06	5.68	-.118	-7.65	5.66	-.112
Age at Onset			-0.93	1.26	-.064	-0.62	1.27	-.043
Psychological Distress			0.10	0.36	.028	0.02	0.36	.005
Cognitive Dysfunction			-0.24	0.19	-.119	-0.11	0.20	-.055
Step 5	.217	.010‡						
ADL/IADL Capacity			-0.29	0.19	-.150	-0.29	0.19	-.150

Note: * $p \le .05$; † $p \le .01$; ‡ $p \le .001$

Mental functioning variables (i.e., primary diagnosis, age at onset, psychological distress, and cognitive dysfunction) were entered in the fourth step of the regression analysis. This set of variables accounted for a significant amount of additional variance in participation scores beyond that explained by the demographic covariates, personal characteristics, and environmental influences entered in step three, $R^2 = .206$, $\Delta R^2 = .020$, F (4, 175) = 2.52, $p = .001$. However, no variables in this set were found to make an independent contribution to participation.

In the final step, the activity variable (i.e., ADL/IADL capacity) was entered into the regression analysis. The addition of the variable accounted for a significant amount of additional variance in participation scores beyond that explained by the demographic covariates, personal characteristics, environmental influences, and mental functioning factors entered in previous steps, $R^2 = .206$, $\Delta R^2 = .010$, F (1, 174) = 2.53, $p = .001$. However, the measure did not make an independent contribution to participation.

The final regression model accounted for 22% of the variance in QOL, which according to Cohen's standards for the behavioral sciences is considered a small effect size (Cohen, 1988; 1992). Although no specific measures independently contributed to predicting participation, each predictor set as a whole was significant in predicting participation.

Model to predict QOL. The second HRA identified QOL as the criterion variable and six sets of ICF variables entered as predictors in sequential steps: (a) demographic covariates, i.e., age, gender (the reference group is female), race/ethnicity (the reference group is white, non-Hispanic), education level, employment status (the reference group is unemployed), and cash benefits (the reference group is no SSDI nor SSI); (b) personal characteristics, i.e., self-stigma, disability acceptance, resilience, empathy, social competency, and insight; (c) environmental influences, i.e., social support and societal stigma; (d) mental functioning, i.e., primary diagnosis (the reference group is mood disorder), age at onset, psychological distress, and cognitive dysfunction; (e) activities, i.e., ADL/IADL capacity; and (f) participation in various life activities.

For this study, demographic covariates were separated from and not entered with personal characteristics. The rationale was that demographic factors are more static and less amenable to change. As with the participation model, dichotomous variables were used to evaluate individual contributions to the QOL model while maintaining overall power. HRA was used to examine the relative contributions of the six sets of ICF variables as predictors of QOL in persons with severe mental illness. The results of the analysis, including values of change in R^2 (ΔR^2), along with unstandardized regression coefficients (B), standard errors (SE B), and standardized coefficients (β) for the predictor variables at each step and in the final model are presented in Table 4.3.

In the first step of the regression analysis, demographic covariates (i.e., age, gender, race/ethnicity, education level, employment status, and cash benefits) were entered. This set of demographic covariates did not significantly account for variance in QOL scores, $R^2 = .061$, F (6, 187) = 2.02, $p = .065$.

Personal characteristics (i.e., self-stigma, disability acceptance, resilience, empathy, social competency, and insight) were entered in the second step of the regression analysis. This set of variables accounted for a significant amount of additional variance in QOL scores beyond that explained by the demographic covariates entered in step one, $R^2 = .355$, $\Delta R^2 = 2.94$, F (6, 181) = 8.31, $p < .001$. Self-stigma, disability acceptance, resilience, and social competency were found to significantly contribute to the change in variance in QOL scores, with $\beta = –.227$, t (193) = –2.78, $p < .006$; $\beta = .203$, t (193) = 2.28, $p = .024$; $\beta = .169$, t (193) = 2.11, $p = .036$; and $\beta =$

.251, t (193) = 2.92, p = .004, respectively. The results indicate that disability acceptance, resilience, and social competency were positively associated with QOL, suggesting that higher disability acceptance, resilience, and social competency were associated with greater QOL. Conversely, self-stigma was negatively associated with QOL, indicating that higher self-stigma was associated with lower QOL.

Environmental influences (i.e., social support and societal stigma) were entered in the third step of the regression analysis. This set of variables accounted for a significant amount of additional variance in QOL beyond that explained by the demographic covariates and personal characteristic variables entered in previous steps, $R^2 = .502$, $\Delta R^2 = .147$, F (2, 179) = 8.31, $p < .001$. Social support and societal stigma were found to each independently and significantly contribute to the change in variance in QOL scores, with $\beta = .401$, t (193) = 6.03, $p < .001$; and $\beta = –.184$, t (193) = –2.75, p = .007, respectively. The results indicate that social support was positively associated with QOL, suggesting that higher social support was associated with greater QOL. Conversely, societal stigma was negatively associated with QOL, indicating that higher societal stigma was associated with lower QOL.

Table 4.3
Hierarchical Multiple Regression Analysis for Prediction of QOL (*N* = 194)

			At Entry into Model			Final Model		
Variable	R^2	ΔR^2	B	SE B	β	B	SE B	β
Step 1	.061	.061						
Age			2.13	1.22	.148	0.76	1.07	.053
Gender			2.13	2.32	.066	0.20	1.74	.006
Race/ethnicity			-2.64	2.65	-.075	1.32	2.12	.037
Education level			0.72	0.63	.089	-0.60	0.57	-.106
Employment status			5.11	2.68	.154	3.39	2.10	.102
Cash benefits			-0.11	2.98	-.003	2.91	2.27	.091
Step 2	.355	.294‡						
Self-Stigma			-0.53	0.19	-.227†	0.01	0.18	.003
Disability Acceptance			0.25	0.11	.203*	0.02	0.10	.016
Resilience			0.44	0.21	.169*	0.12	0.18	.047
Empathy			0.15	0.27	.048	-0.17	0.24	-.056
Social Competency			0.83	0.28	.251†	0.69	0.24	.209†
Insight			0.05	0.34	.009	0.14	0.30	.028
Step 3	.502	.147‡						
Social Support			1.00	0.17	.401‡	0.88	0.16	.351‡
Societal Stigma			-0.25	0.09	-.184†	-0.20	0.09	-.150*
Step 4	.554	.052‡						
Primary Diagnosis			0.30	2.30	.008	1.06	2.25	.029
Age at Onset			-0.24	0.51	-.031	0.02	0.50	.000
Psychological Distress			-0.60	0.14	-.312‡	-0.65	0.14	-.341‡
Cognitive Dysfunction			0.80	0.08	.075	0.17	0.08	.162*
Step 5	.570	.016‡						
ADL/IADL Capacity			-0.20	0.08	-.187*	-0.18	0.08	-.168*
Step 6	.581	.011‡						
Participation			0.07	0.03	.120*	0.07	0.03	.120*

Note: ***** $p \le .05$; **†** $p \le .01$; **‡** $p \le .001$

Mental functioning variables (i.e., primary diagnosis, age at onset, psychological distress, and cognitive dysfunction) were entered in the fourth step of the regression analysis. This set of variables accounted for a significant amount of additional variance in QOL scores beyond that explained by the demographic covariates, personal characteristics, and environmental influences entered in step three, $R^2 = .554$, $\Delta R^2 = .052$, F (4, 175) = 12.069, $p < .001$. Psychological distress was found to significantly contribute to the change in variance in QOL scores, with $\beta = –.312$, t (193) = –4.16, $p < .001$. The results indicate that psychological distress was negatively associated with QOL, indicating that higher psychological distress was associated with lower QOL.

In the fifth step, the activity variable (i.e., ADL/IADL capacity) was entered into the regression analysis. The addition of the variable accounted for a significant amount of additional variance in QOL scores beyond that explained by the demographic covariates, personal characteristics, environmental influences, and mental functioning factors entered in previous steps, $R^2 = .570$, $\Delta R^2 = .016$, F (1, 174) = 12.14, $p < .001$. Activity was found to significantly contribute to the change in variance in QOL scores, with $\beta = –.187$, t (193) = –2.56, $p = .011$. The results indicate that difficulty with completing activities was negatively associated with QOL, indicating that greater difficulty with completing activities was associated with lower QOL.

In the final step, the participation (in various life activities) variable was entered into the regression analysis. The addition of the variable accounted for a significant amount of additional variance in QOL scores beyond that explained by the demographic covariates, personal characteristics, environmental influences, mental functioning factors, and activity variables entered in previous steps, $R^2 = .581$, $\Delta R^2 = .011$, F (1, 173) = 12.01, $p < .001$. Participation was found to significantly contribute to the change in variance in QOL scores, with $\beta = .120$, t (193) $= 2.17$, $p = .032$. The results indicate that participation was positively associated with QOL, indicating that higher participation in life activities was associated with higher QOL.

The final regression model accounted for 58% of the variance in QOL. According to Cohen’s standards for the behavioral sciences, this is considered a large effect size (Cohen, 1988; 1992). Once all other factors were controlled, social competency ($\beta = .209$), social support ($\beta = .351$), societal stigma ($\beta = –.150$), psychological distress ($\beta = –.341$), cognitive dysfunction ($\beta = .162$), activity ($\beta = –.168$), and participation ($\beta = .120$) were found to be significant predictors of QOL in adults with severe mental illness. Social competency, social support, cognitive dysfunction, and participation were positively associated with QOL, and societal stigma, psychological distress, and activity were negatively related to QOL.

CHAPTER FIVE

Summary, Discussion, and Implications

In this chapter, a summary of the findings from this study, followed by a discussion and possible explanations for the major findings, is provided. Limitations of this study that might impact the interpretation and generalizability of research results are then considered. Finally, implications and suggestions for clinical practice and future research are discussed.

Major Findings

This study used the ICF model as a framework to predict participation and QOL for adults with severe mental illness. Specifically, the relationships among the variables of different ICF components (i.e., personal factors, environmental factors, mental functioning, and activities) were examined as they apply to adults with severe mental illness and their engagement in life activities (i.e., participation). Subsequently, the ICF components (i.e., personal factors, environmental factors, mental functioning, activities, and participation) and their relationships to QOL were examined in adults with severe mental illness. Based on the research design and questions, instruments were selected to measure the components in the proposed models, and suitable data analysis techniques were utilized to describe sample characteristics and observed variables of the proposed full and expanded model models. Several major results are discussed.

Relationships Between ICF Predictors and Participation

A correlational analysis was conducted in this study to evaluate the relationships between the 19 predictor variables and the outcome variable from the ICF model. Some significant relationships were found. Small-to-medium positive relationships were observed between participation and the following ICF predictors: disability acceptance, resilience, empathy, social competency, insight, and social support. Some small negative relationships were observed between participation and these ICF predictors: societal stigma, cognitive dysfunction, and ADL/IADL capacity. Also notable were small-to-large relationships involving the personal and environmental factors of self-stigma, disability acceptance, resilience, empathy, social competency, insight, social support, and societal stigma. It seems logical that people with greater participation have higher social competency and insight and perceive less societal stigma in the environment. The findings indicated that some variables may overlap but not to such a degree that the variables appeared to measure the same construct.

Factors Contributing to Participation

In the primary analyses, HRA was used to investigate how different ICF variable sets may contribute to participation for adults with severe mental illness. The predictor variables of the ICF model were divided into four major groups, matching the different components of the model, and HRA was used to assess the contribution of each construct. Specifically, it was hypothesized that the five sets of variables—demographic covariates, personal characteristics, environmental influences, mental functioning variables, and ADL/IADL capacity—would each contribute significantly to a prediction of participation. Overall, the final regression model only accounted for 22% of the variance in participation scores, which is considered a small effect size according to Cohen’s (1988) standards. In addition, no variables were significant independent predictors of participation in the final model. The ICF variables found to be significant contributors to prediction of participation over others are discussed in the following sections.

Demographic covariates. The first step of the regression model consisted of demographic covariates—specifically, age, gender, race/ethnicity, education level, employment status, and cash benefits (SSDI and/or SSI)—that have shown associations with participation and severe mental illness in the literature. The results indicated that demographic characteristics accounted for 10% of the variance in participation scores for this sample of adults with severe mental illness. At the initial entry into the model, race/ethnicity (i.e., Caucasian/white versus non-white) and education level, independently accounted for the participation variance over and above the other demographic covariates. Specifically, being Caucasian/white was associated with lower levels of participation compared to non-white (i.e., African American/Black, Native American/Alaska Native, Asian/Pacific Islander, Bi-Racial/Multi-Racial, Hispanic/Latino) individuals. Education level was positively associated with participation, indicating that higher levels of education are associated with a higher degree of participation in life activities.

Personal characteristics. In the second step of the analysis, personal characteristics—self-stigma, disability acceptance, resilience, empathy, social competency, and insight—were entered into the regression equation. This group of variables accounted for a significant amount of additional variance in participation (6%) over and above that already explained by demographic covariates. In the preliminary analyses, the correlation matrix (see Table 4.1) showed small-to-medium positive correlations between participation and personal characteristics, i.e., disability acceptance, resilience, empathy, social competency, and insight (r = .128 to .317). However, only social competency independently accounted for a significant amount of the variance in participation over and above all the other variables entered into the model, suggesting that increased social competency was related to higher levels of participation.

Environmental influences. In the third step of the analysis, environmental influences—societal stigma and social support—were entered into the regression equation. This group of variables accounted for an additional amount of variance in participation (3%) over and above that already explained by demographic and personal factors. In the preliminary analyses, the correlation matrix (see Table 4.1) showed small positive correlations between participation and social support (*r* = .415), whereas the relationship between participation societal stigma (*r* = –.243) was negative. Neither social support nor societal stigma independently accounted for a significant amount of the variance in participation.

Mental functioning. In the fourth step of the analysis, disability-related variables—primary diagnosis, age at onset, psychological distress, and cognitive dysfunction—were entered into the regression equation. The results indicated that disability-related characteristics accounted for 2% of the variance in participation beyond that accounted for by demographic, personal, and environmental characteristics. In the preliminary analyses, the correlation matrix (see Table 4.1) showed small negative correlations between participation and disability-related characteristics, including primary diagnosis (i.e., psychotic versus mood disorder) and cognitive dysfunction (*r* = –.156 to –.189). None of the mental functioning variables independently accounted for the participation variance over and above the other disability-related characteristics.

ADL/IADL capacity. In the final step, measures of skills/abilities—communication, mobility, self-care, interpersonal interaction and relationships, and live activities—were entered into the regression equation. These variables accounted for 1% of additional variance in participation over and above that already explained by previous sets of variables. In the preliminary analyses, the correlation matrix (see Table 4.1) showed a small negative correlation between participation and ADL/IADL capacity (*r* = –.228). ADL/IADL capacity did not independently account for the participation variance.

Full participation model. Although there were no individual significant predictors of participation at the final regression model, each construct or set of variables was successful at predicting participation throughout the model. Specifically, it accounted for 22%, which is considered a small, but significant, effect size.

Discussion. Attempting to evaluate the ICF model posed numerous challenges. For instance, when attempting to limit the number of items in the survey so as not to overwhelm participants, shorter measures were usually selected; however, when they were not readily available, available measures were utilized and shortened for this study. Some items within the selected measures were extremely similar (if not identical) to items in other measures, in which case it was only included in one, not both instruments for use in this study. In addition, the variables of two of the ICF constructs, *activities* and *participation*, were not as clearly defined as other variables in the model, which presented some challenges regarding the lack of available reliable measures for them. Hence, it may be that the measures do not fully capture the intended constructs or measure all the aspects under the different constructs. This study provided limited support for the structure of the ICF as a predictor of participation. One of the ICF constructs, i.e., personal factors was able to predict participation, initially; however, no ICF constructs were able to independently predict participation in the final model.

Relationships Between ICF Predictors and QOL

In this study, a correlational analysis was conducted to evaluate the relationships between the 20 predictor variables and one outcome variable from the ICF model. Some significant relationships were found. Small-to-large positive relationships were observed between QOL and the following ICF predictors: disability acceptance, resilience, empathy, social competency, social support, and participation. Some medium-to-large negative relationships were observed between QOL and these ICF predictors: self-stigma, societal stigma, psychological distress, cognitive dysfunction, and ADL/IADL capacity. Also notable were small-to-large relationships involving the personal and environmental factors of self-stigma, disability acceptance, resilience, empathy, social competency, insight, social support, and societal stigma. It seems plausible that people with a higher degree of disability acceptance and resilience, who report less societal and internalized stigma, and participate to greater degree within their community, would experience a higher quality of life. According to the study findings, although some variables overlapped, it was not enough to indicate that the variables appeared to measure the same construct.

Factors Contributing to QOL

In the primary analyses, HRA was used to investigate how different ICF variable sets may contribute to QOL for adults with severe mental illness. The predictor variables of the ICF model were divided into five major groups, matching the different components of the model, and HRA was used to assess the contribution of each construct. Specifically, it was hypothesized that the six sets of variables—demographic covariates, personal factors, environmental factors, mental functioning variables, ADL/IADL capacity, and participation—would each contribute significantly to a prediction of QOL. Overall, the final regression model accounted for 58% of the variance in QOL scores, which is considered a large effect size according to Cohen's (1988) standards and provided good support for the use of the ICF model in predicting QOL for adults with severe mental illness. The results suggested that personal characteristics (social competency), environmental influences (social support and societal stigma), mental functioning variables (psychological distress and cognitive dysfunction), ADL/IADL capacity (activities), and participation (in various life activities) accounted for the variance in QOL; however, demographic covariates were not found to be significant factors. The various reasons why several variables in the ICF were found to be significant contributors to prediction of QOL over others for this study are discussed in the following sections.

Demographic covariates. The first step of the regression model consisted of demographic covariates—specifically, age, gender, race/ethnicity, education level, employment status, and cash benefits (SSDI and/or SSI)—that have shown associations with participation and severe mental illness in the extant literature. The results indicated that demographic characteristics accounted for 6% of the variance in QOL scores for this sample of adults with severe mental illness. At the initial entry into the model, no demographic variables accounted for a significant amount of variance over and above the other demographic characteristics. One explanation could be that when looking at a person as a whole, other variables, such as personal and environmental factors become more important than demographics. This is an important factor, as demographics are often difficult, if at all possible, to change.

Personal characteristics. In the second step of the analysis, personal characteristics—self-stigma, disability acceptance, resilience, empathy, social competency, and insight—were entered into the regression equation. This group of variables accounted for a significant amount of additional variance in QOL (29%) beyond that explained by demographic factors. In the preliminary analyses, the correlation matrix (see Table 4.1) showed small-to-medium positive correlations between QOL and personal characteristics, i.e., disability acceptance, resilience, empathy, and social competency (r = .243 to .447) and a medium negative correlation between QOL and self-stigma (r = -.403), which independently accounted for a significant amount of the variance in QOL beyond the other variables entered into the model, suggesting that increased disability acceptance, resilience, empathy, and social competency, and decreased self-stigma were related to higher levels of QOL. Overall, this study supported the finding that psychosocial factors play a significant role in the relationship between severe mental illness and QOL. Previous studies (e.g., Ferrin et al., 2010) have shown that disability acceptance helps people transcend the psychosocial consequences or effects of having a disability, such as severe mental illness. Literature has also shown that disability acceptance and resilience are highly correlated.

Environmental influences. In the third step of the analysis, environmental influences—social support and societal stigma—were entered into the regression equation. This group of variables accounted for a significant amount of additional variance in QOL (15%) over and above that already explained by demographic and personal characteristics. In the preliminary analyses, the correlation matrix (see Table 4.1) showed large positive correlations between QOL and social support ($r = .539$), whereas the relationship between QOL and societal stigma ($r = –.391$) was negative. Both social support and societal stigma independently accounted for a significant amount of the variance in QOL over and above all the other variables entered into the model, suggesting that increased social support and decreased societal stigma were related to higher levels of QOL.

As expected, social support was found to be a significant predictor of QOL. The results of this study were consistent with other studies that have found that social support contributed unique variance in psychosocial adaptation to CID (e.g., Livneh & Wilson, 2003). Positive associations between social support and rehabilitation-related outcomes have been shown in previous studies, such as QOL in people severe mental illness (Baker et al., 1992; Greenberg et al., 2006; Hanson et al., 1999; M. Smith & Greenberg, 2007). In this study, the set of societal stigma also accounted for unique variance in QOL after controlling for the variance explained by other ICF variables. As expected, societal stigma was found to be a significant predictor of QOL. Societal stigma is so prevalent that adults with severe mental illness may experience difficulty integrating into society, including finding and maintaining employment and experiencing lower QOL (Link, 1987). On a positive note, studies have suggested that the negative effects of stigmatization were moderated by social support.

Mental functioning. In the fourth step of the analysis, disability-related variables—primary diagnosis, age at onset, psychological distress, and cognitive dysfunction—were entered into the regression equation. The results indicated that disability-related characteristics accounted for 5% of the variance in QOL beyond that accounted for by demographic covariates, personal characteristics, and environmental influences. With the addition of this predictor set, the independent contributions of social competency, social support, and societal stigma were reduced, and the contributions of education level and employment status were no longer significant in the overall regression model. In the preliminary analyses, the correlation matrix (see Table 4.1) showed small-to-large negative correlations between QOL and disability-related characteristics, including psychological distress and cognitive dysfunction (r = –.251 to –.508). Only psychological distress independently accounted for the QOL variance over and above the other disability-related characteristics, suggesting that increased psychological distress was related to lower QOL. Similar to previous studies (Browne et al., 1996; Ho et al., 1998), this found that psychiatric symptoms are inversely correlated with QOL.

ADL/IADL capacity. In the fifth step, a measure of skills/abilities was entered into the regression equation. These variables accounted for an additional amount of variance (2%) in QOL beyond that already explained by previous sets of variables. In the preliminary analyses, the correlation matrix (see Table 4.1) showed a medium negative correlation between QOL and ADL/IADL capacity (i.e., incapacity; r = –.456). ADL/IADL capacity was found to contribute significantly to the variance in QOL. Greater difficulty with the ability to complete ADLs/IADLs was associated with lower QOL. Studies have shown an inverse effect between activities (incapacity) and QOL (Heinrichs, Hanlon, & Carpenter, 1984).

Participation. In the final step, a measure of participation in life activities was entered into the regression equation. These variables accounted for 1% of additional variance in QOL over and above that already explained by previous sets of variables. Participation was found to contribute significantly to the variance in QOL.

Full QOL model. There were several factors that independently contributed to the variance in predicting QOL, primarily social competency, social support, societal stigma, psychological distress, cognitive dysfunction, activity, and participation. The final regression model accounted for 58% of the variance in QOL, which is a large effect size. It is particularly interesting that although the participation model accounted for a small effect size, when put into the QOL model it remains significant.

Discussion. As previously stated, there were a number of challenges in trying to evaluate the ICF, including the use of shorter measures, shortening measures for this study, and working with constructs that were not clearly defined or differentiated (e.g., *activities* and *participation*). This study provided support for the structure of the ICF as a predictor of QOL. All of the ICF constructs, i.e., personal factors, environmental factors, mental functioning, activities, and participation predicted QOL.

Limitations

There are several limitations that should be taken into consideration when interpreting the results of this study. The present study has several limitations related to the methodology, including sampling method, research design, and instruments utilized.

Sampling method. Generalizability of the findings was limited by the use of a non-random convenience sample through clubhouses. This survey was conducted at each clubhouse during regular work hours (i.e., Monday through Friday from 9 a.m. to 5 p.m.), when the clubhouse was open, and members were present. As a result, this study may have excluded clubhouse members who were otherwise engaged in employment- or education-related activities. In addition, clubhouse members may be different from other individuals with severe mental illness within the community. For example, clubhouse members may engage in more community participation than those who receive services from other agencies (e.g., ACT, CSP) in their homes.

Research design. By using a cross-sectional design, directionality of the effects of causality among variables cannot be determined. One reason is that no variables were manipulated; rather, variables were examined at a specific point in time.

Instruments. The surveys relied on self-report data, making the results vulnerable to "affective bias, poor insight, and recent life events," especially with regard to QOL (Atkinson, Zibin, &Chuang, 1997, p. 99). Conversely, however, self-report measures were reported as useful in predicting functional outcomes (Eisen et al., 2011). In addition, adults with severe mental illness often experience cognitive dysfunction (Martinez-Arán et al., 2004), which may adversely affect the reliability or validity of survey responses. One reason may be that positive mixed with negative wording on items may confuse individuals with severe mental illness. This may further impact their ability to accurately assess factors within the ICF constructs such as their personal characteristics, environmental influences, mental functioning, activity, participation, and overall QOL, when compared to corroboration reporters, such as their family members or service providers (Wang, 2011). Finally, survey length may have negatively affected the quality of the data and rate of response (Frede, 2010). This study maintained 190 total survey questions; therefore, participants' responses to questions may have been tainted.

Implications

Implications for Clinical Practice

The findings from the present study, suggest several relevant implications for directing and informing clinical practices in psychiatric rehabilitation as well as other allied fields. To promote rehabilitation outcomes, including psychosocial adjustment, full community integration, and overall QOL for adults with severe mental illness, more evidence-based treatments should be developed and utilized.

The ICF model was successful in predicting participation for adults with severe mental illness. Although no individual measures remained significant predictors of participation in the full model, some notable associations surfaced during the initial steps of HRA, specifically, between social competency and participation. This is not a novel finding, as the literature is rich with findings that individuals with severe mental illness often lack social skills which in turn appears to hinder their ability to fully integrate (or participate) in society (e.g., Gittelman-Klein & Klein, 1969). Social competency was also a significant predictor of QOL in the final expanded model. Thus, clinical interventions that focus on social competency training seem warranted. Ways that this could be addressed might include, initial skill training in therapy, followed by skill practice in therapy and with natural supports (e.g., family, friends), and finally generalizing these skills to everyday life. In order to assess for generalization, the recipient might keep a journal and detail responses to interactions or record the interactions and review them in subsequent therapy sessions. Liberman et al. (1982) have long advocated for the use of social skills training to enhance social competency in individuals with severe mental illness. As a result numerous agencies, including clubhouses attempt to foster a safe environment where individuals with severe mental illness can develop the necessary social skills to be successful in obtaining and maintaining employment (ICCD, 2010).

The ICF model was also successful in predicting QOL for adults with severe mental illness, with numerous variables contributing independently to QOL in the final expanded model. Specifically, social competency, social support, societal stigma, psychological distress, cognitive functioning, ADL/IADL capacity, and participation contributed significantly to the variance in predicting QOL for adults with severe mental illness. Ways to promote social competency was previously discussed; the other variables will be addressed individually below.

Social support has been associated with QOL (Greenberg et al., 2006; Hansson et al., 1999; M. Smith & Greenberg, 2007) in adults with severe mental illness. In addition to social competency training, which may in turn increase one's potential to obtain and maintain adequate social support, interventions directed at enhancing social support might prove beneficial for individuals with severe mental illness. As societal stigma has been shown to negatively impact QOL (Link, 1987), efforts to reduce stigma would seem beneficial for individuals with severe mental illness. Social supports appear to mediate the negative effects of societal stigma. Social skills training with the focus of self-advocacy could serve to decrease societal stigma as well.

Adults with severe mental illness experience varying levels of psychological distress (Browne et al., 1996; Ho et al., 1998), which negatively impact QOL. Treatment focusing on ameliorating symptoms of distress (i.e., depression, psychosis, mania) could assist with increasing levels of QOL. Interestingly, cognitive dysfunction was directly related to QOL, suggesting that greater cognitive dysfunction is associated with greater QOL. However, it could be that cognitive dysfunction distorts the individual's negative perceptions and in turn allows the individual to view other aspects of his or her life in a more positive light, or it may be that other factors ameliorate cognitive dysfunction. Regardless, treatment efforts aimed at decreasing psychological distress via medication, therapy, and other intervention methods seem appropriate.

Finally, QOL was inversely related to ADL/IADL capacity (i.e., incapacity) and positively related to participation. Interventions aimed at increasing community participation in meaningful activities and decreasing the barriers to participation (i.e., incapacity) could serve to promote QOL in adults with severe mental illness. Agencies, such as clubhouses could promote peer support to encourage participation in life activities. This type of intervention would serve to promote participation for all individuals. Those members who are more independent could serve to assist those members that require assistance. In turn, both individuals would be participating more in the community, as well as socializing more.

Implications for Future Research

The findings from this study provide support for the use of the ICF model as a framework to predict participation and QOL for adults with severe mental illness. Important to note is that this study is a descriptive, correlational study; therefore, the causality of the relationships between predictor and outcome variables could not be verified. In order to ascertain actual causal relationships, longitudinal research is necessary. It can also be utilized to evaluate prediction of QOL for other CID populations. Subsequent to assessing QOL, more specific rehabilitation outcomes could be evaluated for adults with severe mental illness, such as HRQOL.

The ICF model is considered a comprehensive model and worthy of empirical research; however, to date, the research has focused primarily on conceptual and theoretical studies. There are some notable overlaps and ambiguities within the ICF constructs, which require clarification, validation, and operationalization. Valid measures for the ICF constructs would also be useful, especially for the differentiation between activities and participation. Linking future ICF-based studies to the existing literature is also suggested.

Conclusion

This study is novel in that it was the first to apply the ICF model to a sample of adults with severe mental illness in order to better understand their participation in the community and subsequent QOL. The study was partially successful in utilizing the ICF model to predict participation for adults with severe mental illness. Although some individual factors surfaced as significant contributors to variance in the initial steps of HRA, none maintained significance in the full model. Overall, the study provides good support for the usefulness of the ICF model as an interactive and holistic framework for predict QOL for adults with severe mental illness, suggesting that the concept of QOL outcome needs to rely on multiple factors, including demographics, personal characteristics, environmental influences, mental functioning, activities, and participation. Demographic, personal, environmental, and mental functioning factors accounted for 55% of the variance in QOL scores in this study. In particular, social support (β = .351) was the strongest independent predictor of QOL in the final regression model. However, it was the set of personal characteristics (ΔR^2 = .294) variables that accounted for the highest amount of variance in the QOL scores. This finding supports the validation of the model as a predictor of QOL for adults with severe mental illness and supports the use of this model in the development of effective interventions for adults with severe mental illness. Further research is needed to explain the complex relationships of factors impacting participation and QOL for adults with severe mental illness.

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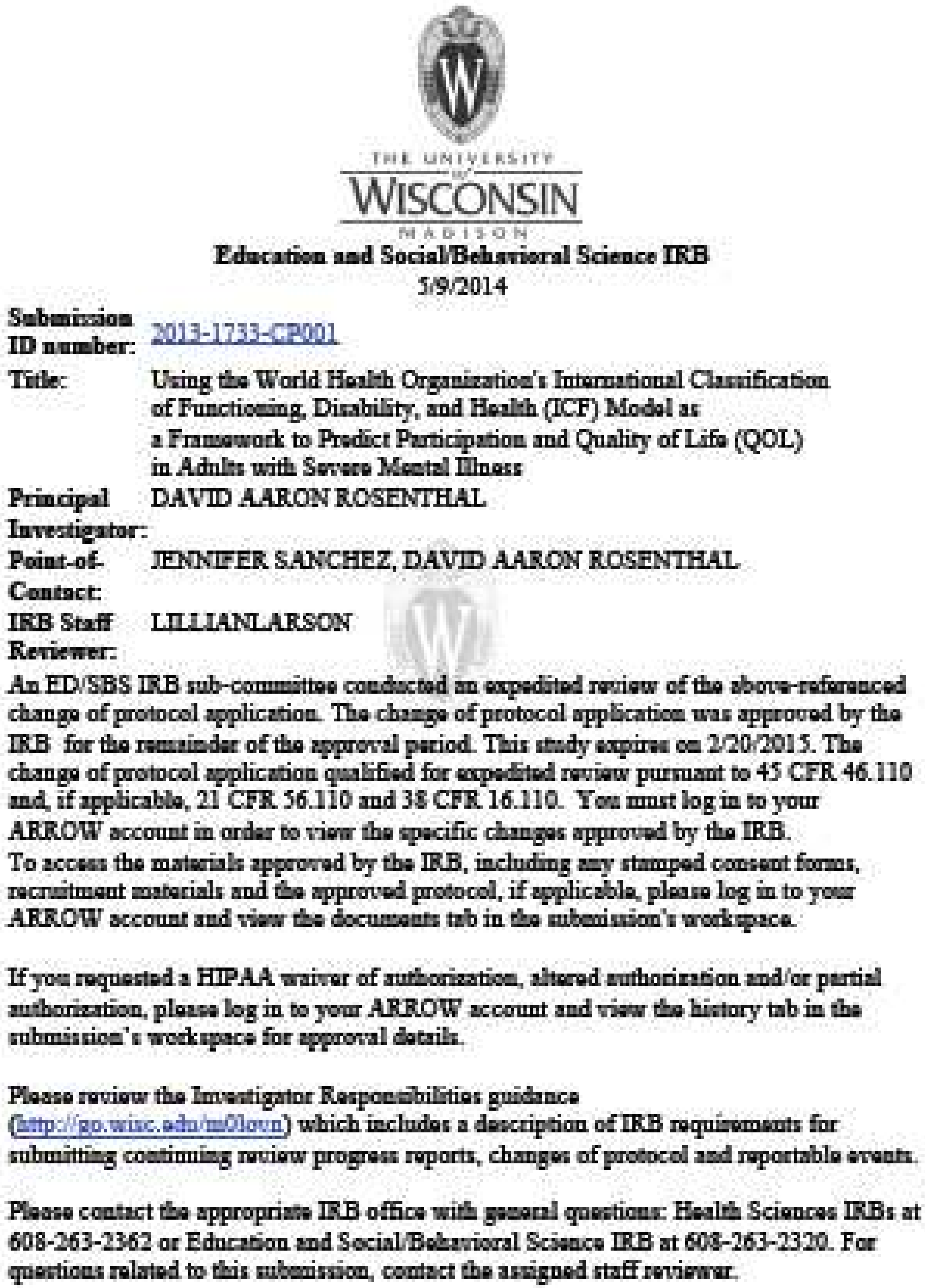
APPENDIX A:

INSTITUTIONAL REVIEW BOARD (IRB) NOTICE OF APPROVAL



THE UNIVERSITY OF WISCONSIN MADISON

Education and Social/Behavioral Science IRB
5/9/2014

Submission ID number: 2013-1733-CP001

Title: Using the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) Model as a Framework to Predict Participation and Quality of Life (QOL) in Adults with Severe Mental Illness

Principal Investigator: DAVID AARON ROSENTHAL

Point-of-Contact: JENNIFER SANCHEZ, DAVID AARON ROSENTHAL

IRB Staff Reviewer: LILLIANLARSON

An ED/SBS IRB sub-committee conducted an expedited review of the above-referenced change of protocol application. The change of protocol application was approved by the IRB for the remainder of the approval period. This study expires on 2/20/2015. The change of protocol application qualified for expedited review pursuant to 45 CFR 46.110 and, if applicable, 21 CFR 56.110 and 38 CFR 16.110. You must log in to your ARROW account in order to view the specific changes approved by the IRB.
To access the materials approved by the IRB, including any stamped consent forms, recruitment materials and the approved protocol, if applicable, please log in to your ARROW account and view the documents tab in the submission's workspace.

If you requested a HIPAA waiver of authorization, altered authorization and/or partial authorization, please log in to your ARROW account and view the history tab in the submission's workspace for approval details.

Please review the Investigator Responsibilities guidance (http://go.wisc.edu/m0lovn) which includes a description of IRB requirements for submitting continuing review progress reports, changes of protocol and reportable events.

Please contact the appropriate IRB office with general questions: Health Sciences IRBs at 608-263-2362 or Education and Social/Behavioral Science IRB at 608-263-2320. For questions related to this submission, contact the assigned staff reviewer.

APPENDIX B:

CONSENT FORM

UNIVERSITY OF WISCONSIN-MADISON

Research Participant Information and Consent Form

Title of the Study: Using the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) Model as a Framework to Predict Participation and Quality of Life (QOL) in Adults with Severe Mental Illness

Principal Investigator: Dr. David Rosenthal (608-262-4776; drosenthal@education.wisc.edu)

Student Researcher: Ms. Jennifer Sánchez (email: jsanchez5@wisc.edu)

DESCRIPTION OF THE RESEARCH

You can participate in the study if you:

(1) are an adult (aged 18 years or older),
(2) have a severe mental illness, and
(3) can read or write at a 6th grade level or above.

We want to know about your:

(1) mental health,
(2) skills and abilities,
(3) social supports,
(4) beliefs about societal attitudes,
(5) independent living skills,
(6) community participation, and
(7) life satisfaction.

WHAT WILL MY PARTICIPATION INVOLVE?

Your participation is completely voluntary. You will be asked to complete one (1) survey packet. It will take about 45 minutes.

ARE THERE ANY RISKS TO ME?

There are no risks associated with this research.

ARE THERE ANY BENEFITS TO ME?

There are no direct benefits to you.

WILL I BE COMPENSATED FOR MY PARTICIPATION?

You will receive a $10 Wal-Mart gift card for participating in this study.

HOW WILL MY CONFIDENTIALITY BE PROTECTED?

Your responses will be completely confidential. We are not requesting any identifying information. Place the completed survey in the provided envelope. Return the envelope to the researcher. The researcher will then hand you the gift card.

Only the investigators will manage the dataset. If published, only group information and aggregated results will be included.

WHOM SHOULD I CONTACT IF I HAVE QUESTIONS?

You may ask any questions about the research at any time.

If you have questions after you leave today, you should contact:
(1) Ms. Jennifer Sánchez (Student Researcher) at jsanchez5@wisc.edu or
(2) Dr. David Rosenthal (PI) at (608) 263-5941 or email drosenthal@education.wisc.edu

Contact the Education and Social/Behavioral Science Institutional Review Board (IRB) Office at the University of Wisconsin-Madison at (608) 263-2320 if you:
(1) are not satisfied with the responses from the research team, or
(2) have questions regarding your rights as a research participant

If you have questions about your mental health, please contact:
- Local mental health care provider information provided

Check the box below to indicate that you:
(1) have read and understand the consent form,
(2) had an opportunity to ask any questions about your participation in this research, and
(3) voluntarily consent to participate in this research study.

☐ **** Please check the box before starting the survey.***

Survey Number	Date

Thank you very much for your time and participation in this study!

You will receive a copy of this form for your records.

APPENDIX C:

RESEARCH SURVEY

SECTION 1: Demographic Information

General Socio-Demographic Questions:

Instructions: Please select the response that best describes you for each question.

1.	Age *(in years)*:	o 18-25 o 26-37 o 38-49 o 50-64 o 65+
2.	Gender:	o Male o Female o Transgender
3.	Race:	o Caucasian/White o African American/Black o Native American/Alaska Native o Asian/Pacific Islander o Bi-Racial/Multi-Racial
	Ethnicity:	o Hispanic/Latino o Not Hispanic/Latino
4.	Education *(highest level completed)*:	o Up to 8th grade o Some high school, no diploma o High school graduate, diploma, or the like (for example: GED) o Some college credit, no degree o Trade/technical/vocational training o Associate’s degree o Bachelor’s degree o Graduate degree
5.	Marital status:	o Single, never married o Married/domestic partnership o Separated or divorced o Widowed
6.	Employment status:	o Employed for wages o Self-employed o Unemployed, looking for work o Unemployed, not looking for work o Homemaker o Student o Military o Retired
	Hours worked *(average per week)*:	o 1-14 o 15-34 o 35-40 o 40+

7.	Cash benefits:	○ Social Security Disability Insurance (SSDI) ○ Supplemental Security Income (SSI)
	Health benefits:	○ Employer-based ○ Self-insured ○ Medicare ○ Medicaid ○ No insurance
8.	Religious affiliation:	○ Christian (for example: Catholic, Baptist, Protestant) ○ Jewish ○ Muslim ○ Hindu ○ Buddhist ○ Other ________________________________ *(Please fill-in above)* ○ None

Disability-Related Questions:

Instructions: Please select the response that best describes your situation.

9.	Age, in years, at onset *(when first diagnosed)*:	○ Under 10 ○ 10-14 ○ 15-19 ○ 20-24 ○ 25-29 ○ 30-40 ○ 40+
10.	Primary Diagnosis:	○ Schizophrenia ○ Schizoaffective Disorder ○ Bipolar Disorder ○ Major Depression
	Secondary conditions *(all that apply)*:	○ Learning disability ○ Anxiety ○ Traumatic Brain Injury (TBI) ○ Spinal Cord Injury (SCI) ○ Posttraumatic Stress Disorder (PTSD) ○ Obsessive-compulsive Disorder (OCD) ○ Substance Abuse ○ Hypothyroidism ○ Chronic Obstructive Pulmonary Disease (COPD) ○ Hepatitis C ○ Fluid/electrolyte disorders ○ Obesity ○ Other ________________________________ *(Please fill-in above)*

SECTION 2: 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.

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

EXAMPLE						
Ex.1	Body aches	5	4	3	2	1

HOW MUCH WERE YOU DISTRESSED BY:

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

SECTION 3: SSTICS

Below is a series of questions on memory and concentration problems that you may have experienced while going about your everyday activities. We would like you to estimate how often you have noted such problems recently.

Instructions: Circle the number that best describes your experience.

5 = very often **4 = often** **3 = sometimes** **2 = rarely** **1 = never**

1.	Have you noticed any difficulty remembering things?	5	4	3	2	1
2.	Do you have difficulty remembering information that is freshly received *and that must be used immediately*, such as a telephone number, an address, a room number, a bus route number or a doctor's name?	5	4	3	2	1
3.	Do you have difficulty memorizing things, such as a grocery list or a list of names?	5	4	3	2	1
4.	Do you ever forget things, such as a date with a friend or a doctor's appointment?	5	4	3	2	1
5.	Do you forget to take your medication?	5	4	3	2	1
6.	Do you have difficulty remembering information that you read in the newspapers or hear on TV?	5	4	3	2	1
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?	5	4	3	2	1
8.	Do you have difficulty remembering how to get to the hospital or the outpatient clinic or even to your own place?	5	4	3	2	1
9.	Do you have difficulty remembering the names of well-known people, such as the President?	5	4	3	2	1
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?	5	4	3	2	1
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.	5	4	3	2	1
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 nearby.	5	4	3	2	1
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.	5	4	3	2	1
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.	5	4	3	2	1

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.	5	4	3	2	1
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.	5	4	3	2	1
17.	Do you have difficulty changing your movements, decisions or ways of doing things if you are asked to do so *and you agree*? For example, you agree to do so but it is hard because it is no longer the same.	5	4	3	2	1
18.	Do you have difficulty finding your words, forming sentences, understanding the meaning of words, pronouncing words, or naming objects?	5	4	3	2	1

SECTION 4: IS

Instructions: Please read the following statements carefully. Circle the number which best applies to you.

3 = Agree 2 = Unsure 1 = Disagree

1.	Some of my symptoms were made by my mind.	3	2	1
2.	I am mentally well.	3	2	1
3.	I do not need medication.	3	2	1
4.	My stay in the hospital was necessary.	3	2	1
5.	The doctor is right in prescribing medication for me.	3	2	1
6.	I do not need to be seen by a doctor or psychiatrist.	3	2	1
7.	If someone says I have nervous or mental health problems, they would be right.	3	2	1
8.	None of the unusual things I experienced are due to my mental health problems.	3	2	1

SECTION 5: MSPSS

We are interested in how *you feel* about the following statements.

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

7 = Very Strongly Agree 6 = Strongly Agree 5 = Mildly Agree 4 = Neutral
3 = Mildly Disagree 2 = Strongly Disagree 1 = Very Strongly Disagree

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

SECTION 6: PDD

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.

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

1.	Most people would willingly accept a person with mental health problems as a close friend.	6	5	4	3	2	1
2.	Most people believe that a person who has received mental health treatment is just as intelligent as the average person.	6	5	4	3	2	1
3.	Most people believe that a person with mental health problems is just as trustworthy as the average citizen.	6	5	4	3	2	1
4.	Most people would accept a fully recovered person with mental health problems as a teacher of young children in a public school.	6	5	4	3	2	1
5.	Most people feel that seeking mental health treatment is a sign of personal failure.	6	5	4	3	2	1
6.	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.	6	5	4	3	2	1
7.	Most people think less of a person who has received mental health treatment.	6	5	4	3	2	1
8.	Most employers will hire a person with mental health problems if he or she is qualified for the job.	6	5	4	3	2	1
9.	Most employers will pass over the application of a person with mental health problems in favor of another applicant.	6	5	4	3	2	1
10.	Most people in my community would treat a person with mental health problems just as they would treat anyone.	6	5	4	3	2	1
11.	Most young people would be reluctant to date someone who has received mental health treatment for serious mental health problems.	6	5	4	3	2	1
12.	Once they know a person has received mental health treatment, most people will take his or her opinions less seriously.	6	5	4	3	2	1

SECTION 7: SSS-S

Instructions: Read each statement below and circle the number that describes to what extent you agree or disagree with the statement.

4 = Strongly Agree **3 = Agree** **2 = Disagree** **1 = Strongly Disagree**

1.	My identity as a mental health consumer is a burden to me.	4	3	2	1
2.	My identity as a mental health consumer incurs inconvenience in my daily life.	4	3	2	1
3.	The identity of being a mental health consumer taints my life.	4	3	2	1
4.	I feel uncomfortable because I am a mental health consumer.	4	3	2	1
5.	I fear that others would know that I am a mental health consumer.	4	3	2	1
6.	I feel like I cannot do anything about my mental health consumer status.	4	3	2	1
7.	I estrange myself from others because I am a mental health consumer.	4	3	2	1
8.	I avoid interacting with others because I am a mental health consumer.	4	3	2	1
9.	I dare not to make new friends lest they find out that I am a mental health consumer.	4	3	2	1

SECTION 8: BRS

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

Use the following scale:

5 = Strongly Agree 4 = Agree 3 = Neutral 2 = Disagree 1 = Strongly Disagree

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

SECTION 9: ADS-R

Instructions: Read each statement below. Circle the number that describes to what extent you agree or disagree with the statement.

4 = Strongly Agree **3 = Agree** **2 = Disagree** **1 = Strongly Disagree**

1.	With my mental health problems, all areas of my life are affected in some major way.	4	3	2	1
2.	Having my mental health problems, I am unable to do things like people without mental health problems do.	4	3	2	1
3.	Mental health problems or not, I am going to make good in life.	4	3	2	1
4.	Because of my mental health problems, I have little to offer people.	4	3	2	1
5.	A person with mental health problems is restricted in certain ways, but there is still much s/he is able to do.	4	3	2	1
6.	No matter how hard I try or what I accomplish, I could never be as good as the person who does not have my mental health problems.	4	3	2	1
7.	Because of my mental health problems, other people’s lives have more meaning than my own.	4	3	2	1
8.	Because of my mental health problems, I feel miserable much of the time.	4	3	2	1
9.	Though I have mental health problems, my life is full.	4	3	2	1
10.	The kind of person I am and my accomplishments in life are less important than those of persons without mental health problems.	4	3	2	1
11.	Since my mental health problems interfere with just about everything I try to do, they are foremost in my mind practically all of the time.	4	3	2	1
12.	There are many things a person with mental health problems like mine is able to do.	4	3	2	1
13.	Almost every area of life is closed to me.	4	3	2	1
14.	My mental health problems prevent me from doing just about everything I really want to do and from becoming the kind of person I want to be.	4	3	2	1
15.	I feel like an adequate person regardless of the limitation of my mental health problems.	4	3	2	1
16.	My mental health problems affect those aspects of life that I care most about.	4	3	2	1
17.	Having mental health problems such as mine is the worst possible thing that can happen to a person.	4	3	2	1
18.	If I didn’t have mental health problems, I think I would be a much better person.	4	3	2	1
19.	When I think of my mental health problems, it makes me so sad and upset that I am unable to do anything else.	4	3	2	1
20.	People with mental health problems are able to do well in many ways.	4	3	2	1
21.	I feel satisfied with my abilities and my mental health problems do not bother me too much.	4	3	2	1
22.	In just about everything, my mental health problems annoy me so that I can’t enjoy anything.	4	3	2	1

23.	I know what I can’t do because of my mental health problems, and I feel that I can live a full life.	4	3	2	1

SECTION 10: PESE & PSSE

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

5 = Very Well 4 = Well 3 = Moderately Well
2 = Slightly Well 1 = Not Well at All

How well can you…

1.	read your friends' needs?	5	4	3	2	1
2.	recognize when someone wants comfort and emotional support, even if (s)he does not overtly exhibit it?	5	4	3	2	1
3.	recognize whether a person is annoyed with you?	5	4	3	2	1
4.	recognize when a person is inhibited by fear?	5	4	3	2	1
5.	recognize when a companion needs your help?	5	4	3	2	1
6.	recognize when a person is experiencing depression?	5	4	3	2	1
7.	express your opinion to people who are talking about something of interest to you?	5	4	3	2	1
8.	work or study well with others?	5	4	3	2	1
9.	help someone new become part of a group to which you belong?	5	4	3	2	1
10.	share an interesting experience you had with other people?	5	4	3	2	1
11.	actively participate in group activities?	5	4	3	2	1

SECTION 11: WHO-DAS-2

This questionnaire asks about difficulties due to health conditions.

Instructions: Think back over the past 30 days and answer these questions. Think about how much difficulty you had doing the following activities. For each question, please circle only one response.

5 = Extreme or cannot do 4 = Severe 3 = Moderate 2 = Mild 1 = None

In the past 30 days, how much difficulty did you have in:

1.	Analyzing and finding solutions to problems in day-to-day life?	5	4	3	2	1
2.	Learning a new task, for example, learning how to get to a new place?	5	4	3	2	1
3.	Generally understanding what people say?	5	4	3	2	1
4.	Starting and maintaining a conversation?	5	4	3	2	1
5.	Getting out of your home?	5	4	3	2	1
6.	Bathing/showering?	5	4	3	2	1
7.	Getting dressed?	5	4	3	2	1
8.	Eating?	5	4	3	2	1
9.	Dealing with people you do not know?	5	4	3	2	1
10.	Maintaining a friendship?	5	4	3	2	1
11.	Getting along with people who are close to you?	5	4	3	2	1
12.	Making new friends?	5	4	3	2	1
13.	Engaging in sexual activities?	5	4	3	2	1
14.	Taking care of your household responsibilities?	5	4	3	2	1
15.	Doing most important household tasks well?	5	4	3	2	1
16.	Getting all the household work done that you needed to, as quickly as needed?	5	4	3	2	1

If you work (paid, non-paid, self-employed) or go to school, complete questions 17–19, below. Otherwise, skip to the next section: Section 12: ILSS-SR.

Because of your health condition, in the past 30 days, how much difficulty did you have in:

17.	Your day-to-day work/school?	5	4	3	2	1
18.	Doing your most important work/school tasks well?	5	4	3	2	1
19.	Getting all the work done that you need to do, as quickly as needed?	5	4	3	2	1

SECTION 12: ILSS-SR

Instructions: Please indicate how often you performed each of these tasks **during the past 30 days.** Circle ONLY ONE number or "X" for each task. Some tasks cannot be performed because there is **No Opportunity** to do them.

5 = Always 4 = Usually 3 = Often 2 = Sometimes 1 = Never
X = No Opportunity

In the **last 30 days, how often** did you?

1.	Wash your clothes by hand or machine using the proper amount of detergent, dry your clothes in a dryer or on a clothes line, and then fold, hang up, and store your clothes?	5	4	3	2	1	X
2.	Store your dirty clothes separate from your clean clothes?	5	4	3	2	1	X
3.	Change your underwear at least twice a week?	5	4	3	2	1	X
4.	Buy your own clothes the last time you needed some?	5	4	3	2	1	X
5.	Bathe or shower using soap for your body and shampoo your hair at least twice a week?	5	4	3	2	1	X
6.	Perform daily hygiene tasks (i.e., use deodorant daily, brush or comb your hair, brush your teeth or dentures with toothpaste)?	5	4	3	2	1	X
7.	Regularly clean your nails?	5	4	3	2	1	X
8.	Clean, including dusting, vacuuming, and/or mopping?	5	4	3	2	1	X
9.	Pick up your "clutter" and put back items where they belong?	5	4	3	2	1	X
10.	Wipe up spills on your furniture or carpet such as coffee?	5	4	3	2	1	X
11.	Prepare simple foods that did not require cooking (e.g., sandwiches, cold cereal, etc.), or required only a small amount of cooking (e.g., fried eggs, TV dinners)?	5	4	3	2	1	X
12.	Discard spoiled foods?	5	4	3	2	1	X
13.	Wash dishes after meals by hand or in a machine and put away the dishes after they'd dried?	5	4	3	2	1	X
14.	Buy your own nutritional groceries - more than snacks (candy and soda)?	5	4	3	2	1	X
15.	Take your medication every day exactly as prescribed? *(If not on medication, in the past when you were taking medication, did you take the medication every day exactly as prescribed?)*	5	4	3	2	1	X
16.	Contact the appropriate person to renew your prescription? *(If not on medication, did you contact the appropriate person to renew your prescription when you last took it?)*	5	4	3	2	1	X
17.	When you were last ill with a minor physical problem such as a cold, did you correctly take care of yourself?	5	4	3	2	1	X
18.	Cash your paycheck or SSI check, make a deposit, or withdrawal at a bank?	5	4	3	2	1	X
19.	Budget your money (plan how your funds were to be spent) responsibly: pay for essential items (e.g., rent, utilities, phone, and transportation) prior to spending money on luxuries?	5	4	3	2	1	X

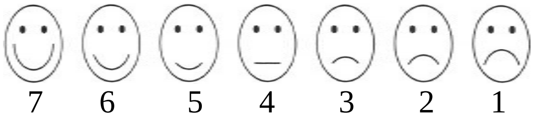
20.	Have a current, valid driver's license?	5	4	3	2	1	X
21.	Use public buses, trains, or subway?	5	4	3	2	1	X
22.	Read a bus schedule or call for information the last time you needed the information?	5	4	3	2	1	X
23.	Have and use your own car?	5	4	3	2	1	X
24.	Have a hobby on which you worked regularly?	5	4	3	2	1	X
25.	Attend religious services?	5	4	3	2	1	X
26.	Write letters or visit friends/relatives?	5	4	3	2	1	X
27.	Attend movies, theater, and/or a spectator sport?	5	4	3	2	1	X
28.	Read books, newspapers, or magazines?	5	4	3	2	1	X
29.	Attend meetings of civic organizations or organizations such as NAMI, VFW, etc.?	5	4	3	2	1	X
30.	Listen to the radio or watch TV?	5	4	3	2	1	X
31.	Bowl, play pool, or other sports?	5	4	3	2	1	X
32.	Play cards/table games?	5	4	3	2	1	X
33.	Maintain your voter’s registration current?	5	4	3	2	1	X
34.	Read the classified ads one or more times per week to look for jobs?	5	4	3	2	1	X
35.	Contact potential employers, friends, and/or others such as employment agencies to determine potential job openings/obtain job leads?	5	4	3	2	1	X
36.	Participate in job interviews?	5	4	3	2	1	X

On your current job or when you were last employed, how often did you?

37.	Get along with your coworkers?	5	4	3	2	1	X
38.	Get along with your supervisors?	5	4	3	2	1	X
39.	Arrive on time for work and follow a daily work and break schedule?	5	4	3	2	1	X

SECTION 13: SLDS

Instructions: Read the statements below. Please circle the number that most closely represents how you feel about the following statements (7 = most happy, 1 = most unhappy).



1.	Which face comes closest to expressing how you feel about your house/apartment/place of residence?	7	6	5	4	3	2	1
2.	Which comes closest to expressing how you feel about this particular neighborhood as a place to live?	7	6	5	4	3	2	1
3.	Which comes closest to expressing how you feel about the food you eat?	7	6	5	4	3	2	1
4.	Which face comes closest to expressing how you feel about the clothing you wear?	7	6	5	4	3	2	1
5.	Which comes closest to expressing how you feel about your health?	7	6	5	4	3	2	1
6.	Which face comes closest to expressing how you feel about the people you live with?	7	6	5	4	3	2	1
7.	Which comes closest to expressing how you feel about your friends?	7	6	5	4	3	2	1
8.	Which comes closest to expressing how you feel about your relationship with your family?	7	6	5	4	3	2	1
9.	Which comes closest to expressing how you feel about how you get on with other people?	7	6	5	4	3	2	1
10.	Which comes closest to expressing how you feel about your job/work/day programming?	7	6	5	4	3	2	1
11.	Which face comes closest to expressing how you feel about the way you spend your spare time?	7	6	5	4	3	2	1
12.	Which comes closest to expressing the way you feel about what you do in the community for fun?	7	6	5	4	3	2	1
13.	Which comes closest to expressing how you feel about the services and facilities in this area?	7	6	5	4	3	2	1
14.	Which comes closest to expressing how you feel about your economic situation?	7	6	5	4	3	2	1

End of survey