SOCIAL SUPPORT AND QUALITY OF LIFE IN ADULTS WITH SEVERE AND PERSISTENT MENTAL ILLNESS

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Dedication

In the two years this research project has taken to complete, the universe compelled me to give much more respect to the basic human need for social nourishment. In celebration of that, I dedicate this thesis to my beautiful friend--

Judith López-Damián

--who personified social support. In her composed yet determined way, she strained to teach me its value. I trust she knows now, that I understand.

You can kiss your friends good-bye

and put miles between you,

but at the same time you carry them with you

in your heart, your mind, your stomach...

because you do not just live in a world--

a world lives in you.

Frederick Buechner

Abstract

The current study investigated the relationship between social support and quality of life (QoL) as well as social support and community functioning among persons with severe and persistent mental illness (SPMI). Empirical data from Phase II of the Continuity of Mental Health Services (COMHS) Study of Alberta (Adair, Wild, Joyce, McDougall, Gordon, et al., 2003) were used to comprehensively examine these variables among a broad-based sample of 301 people with SPMI receiving a mix of inpatient, outpatient, and community services. Multiple measures administered in Phase II of the COMHS research program provided comprehensive data on QoL (i.e., disease-specific and generic QoL), functioning (i.e., community ability), and objective (OSS) and subjective (SSS) measures of social support. Higher ratings of both OSS and SSS were associated with better QoL and functioning at outcome. Participant ratings of objective dimensions of their own social support were shown to be most important in determining life quality and functioning at outcome. Of the two SSS variables, the one most predictive of life quality was the participants' sense of the provision and receipt of social support. Clinician-rated OSS was a significant predictor of QoL only for participants who rated social support availability as poor. The results of this study may inform policy development, planning, and resource allocation for community treatment programs in Alberta and elsewhere, as there is widespread support both provincially and nationally for increasing community support services and decreasing the number and length of inpatient admissions (Kirby & Keon, 2006). A better understanding of the relative impact of social support variables is essential for further development of effective psychosocial rehabilitation programming.

Acknowledgements

This research project was neither linear nor swift in its completion. Suddenly, it seemed, the person known for her efficiency... was not. I am grateful to all of my committee members for their patience when other priorities blocked my progress, time and time again. Thank you for remaining available--as well as confident in my competence.

My heartfelt appreciation to Dr. Carol Adair of the Departments of Psychiatry and Community Health Sciences, Faculty of Medicine, University of Calgary and the Centre for Health Promotion Studies, University of Alberta. Thank you, Carol, for your enthusiastic, consistent support--provided, always, with impeccable aptness. Your expertise and wise direction from beginning to end of this research project were invaluable. It is no overstatement to suggest that I would not have accomplished this project without you. I strive to emulate the high standards you maintain both professionally and personally.

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This project was successful due to the broad perspectives of my committee members. I hope that their eagerness to establish a collaborative atmosphere will foster more inter-university research projects in this province.

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Chapter 1: Introduction

Positive social relationships may be associated with happiness and wellbeing (Cohen, Gottlieb, & Underwood, 2000; Kawachi & Berkman, 2001; Rogers, Anthony, & Lyass, 2004). Inclusion in a social network may provide a source of generalized positive affect, and this positive psychological state may contribute to overall health (Cohen et al., 2000). Deterioration in mental health may result in changes in social relationships (Beach & Kaslow, 2006; Goldberg, Rollins, & Lehman, 2003; Macdonald, Hayes, & Baglioni, 2000). People with severe and persistent mental illness (SPMI) may experience network shrinkage as contacts are lost during periods of acute illness and hospitalization (Green, Hayes, Dickinson, Whittaker, & Gilheany, 2002). Some symptoms of SPMI are associated with social withdrawal and the side effects of some medications indicated for SPMI may hinder social activities, e.g., by restricting driving a vehicle (Green et al., 2002). Individuals with SPMI may become increasingly dependent so that relationships are less reciprocal, which may also contribute to network decline (Green et al., 2002). The concept of social support for SPMI has gained considerable attention over the past four decades (Hupcey, 1998; Hutchison, 1999), since treatment advances have enabled quality of life (QoL) to be the goal of mental health care in place of the traditional emphasis on custodial care (Diamond & Becker, 1999; Dowdall, 1999; Monroe-DeVita & Mohatt, 1999). The notion of social support has been prominent among the factors associated with facilitating health and wellness in the community (Macdonald et al., 2000; Yanos, Rosenfield, & Horwitz, 2001). Treatment in community settings strives to optimize QoL for the individual patient, often by providing some manner of social support (Dowdall, 1999; Monroe-DeVita & Mohatt, 1999). The prevailing view is that increasing sources of social support for patients will correspondingly enhance clinical functioning and ultimately QoL, which has been identified as an important outcome (Diamond & Becker, 1999; Korr & Ford, 2003).

Many new programs and interventions in the last decade offer support as their primary service, e.g., supportive housing, supported employment, etc. (Anthony, Cohen, Farkas, & Gagne, 2000; Yanos et al., 2001). Yet little is known about various aspects of social support domains and how they relate to QoL in people with SPMI (Corrigan & Phelan, 2004; Goldberg et al., 2003). Social support is a multidimensional concept, and the associations between social relationships and health are complex (Cohen, Gottlieb, & Underwood, 2001; Corrigan & Phelan, 2004). Increases in social contact, social interaction, and the provision of social resources are not always associated with better health (Cohen et al., 2001; Lincoln, 2000; Yanos et al., 2001). Work remains in elucidating characteristics of social support that lead to the maintenance or improvement of QoL. It is important that researchers and clinicians gain a better understanding of the differential effects and characteristics of social support with respect to the life quality of persons with SPMI. Often, researchers have used unclear conceptualizations of social support (Froland, Brodsky, Olson, & Stewart, 2000) and they have tended to find weak or contradictory associations between objective and subjective social support variables and QoL (Bengtsson-Tops & Hansson, 2001; Brunt & Hansson, 2002; Caron, Tempier, Mercier, & Leouffre, 1998; Graham-Bevan, 2006; McCormick, 1999). These links must be better understood; the lack of empirical knowledge makes it challenging to design effective social support interventions alone or in conjunction with other elements of mental healthcare such as psychopharmacologic treatment, individual therapy, crisis intervention, and substance abuse treatment (Gottlieb, 1995). The purpose of this study was to describe the relationship between social support (including objective and subjective social support) and QoL in persons with SPMI.

Study Rationale

Empirical data from Phase II of the Continuity of Mental Health Services (COMHS) Study of Alberta (Adair, Wild, Joyce, McDougall, Gordon, et al., 2003) were used to comprehensively examine the variables of interest among a broad-based sample of people with SPMI receiving a mix of inpatient, outpatient, and community services. Phase II of the COMHS research program was a 17-month follow-up study of the care patterns of people with SPMI that began in the spring of 2001 and ended in the autumn of 2002. The current study investigated the relationship between social support and life quality in the COMHS sample. Further clarification of this association was facilitated by also investigating the relationship between objective features of social support (e.g., network size, frequency of contact), subjective features of social support (e.g., perceived quality of relationships) and QoL. These relationships were examined using a set of empirically derived hypotheses, with objective social support and then subjective social support variables serving as the predictors of QoL.

Research Questions and Objectives

Given the prevalence of the view that social support is an important contributor to the wellbeing of people with SPMI, and given its role as a cornerstone of community therapy, the primary objective for this research was to clarify whether or not social support impacts life quality among adults with SPMI. Though research in this area is increasing, the results are inconsistent and prospective studies using large samples are lacking. These relationships were investigated using measures of the number and objective quality of the functioning of social relationships as well as the subjective experience of those relationships, and whether these variables, combined, predict life quality. Specifically, the first research question was: Does social support influence the QoL or functioning of individuals with SPMI? Multiple measures administered in Phase II of the COMHS research program provided comprehensive data on QoL (i.e., disease-specific and generic QoL), functioning (i.e., community ability), and objective and subjective measures of social support.

A secondary but key question that this research examined was: Do subjective dimensions of social support moderate the relationship between objective dimensions of social support, life quality and functioning in SPMI? There has been some suggestion that the *experience* of social support (i.e. subjective or perceived social support) is a primary influence in the functioning and QoL of individuals with SPMI (Hall & Nelson, 1996). However, research remains at an early stage of development. The links between characteristics of social support and QoL are poorly understood. In the current study, these relationships were examined using responses to items specific to each form of social support (e.g., number of relationships and satisfaction with those relationships), and their differential impact on measures of life quality and community functioning.

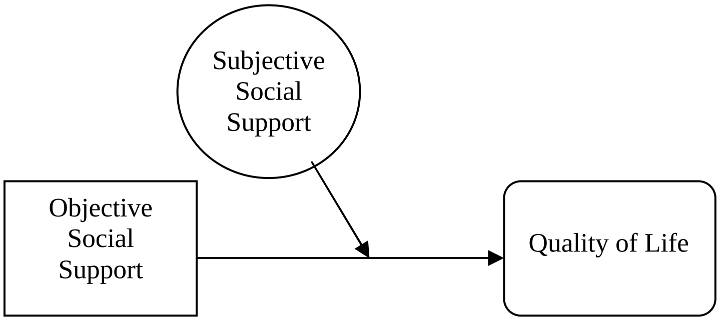

Figure 1. Causal Diagram for Research Question No.2.

The results of this study may inform policy development, planning, and resource allocation for community treatment programs in Alberta and elsewhere. An increasing number of Albertans are presenting for treatment of specific mental illnesses (M. Slomp, Information Management, Alberta Mental Health Board, personal communication, February 9, 2007), and there is widespread support both provincially and nationally for increasing community support services and decreasing the number and length of inpatient admissions (Kirby & Keon, 2006). This context makes the dynamics of social support in the QoL of individuals with SPMI a timely and compelling topic. A better understanding of the relative impact of social support variables is essential to further develop effective psychosocial rehabilitation programming. Information about the relationship between social support and QoL may also be useful to researchers and clinicians in fields outside of psychology. There is a growing literature indicating the important influence of psychosocial resources on psychological outcomes among the medically ill (Bohachick, Taylor, Sereika, Reeder, & Anton, 2002). The importance of the patients' experience of social support to life quality has been recognized in the process of recovery from breast cancer (Shannon & Bourque, 2005), myocardial infarction (Burg, Barefoot, Berkman, Catellier, Czajkowski, Saab et al., 2005), stroke (Tsouna-Hadjis, Vemmos, Zakopoulos, & Stamatelopoulos, 2000) and bone marrow transplants (Molassiotis, van den Akker, & Boughton, 1997). Clarification of the association between features of social support and QoL may add to the understanding that psychosocial resources are an important component in the rehabilitation of the severely ill, across a number of areas of medicine and health.

Organization of the Thesis: Chapter Descriptions

This thesis is divided into five chapters, according to the stages of the current research project. Chapter 2 presents contextual material on each topic relevant to the research questions, including SPMI, QoL, and social support. This is followed by a discussion of the systematic literature review conducted on the key relationship under investigation and the resultant contribution to knowledge this study set out to provide. The third chapter describes the research design, empirically-based hypotheses, and all methods specific to the current study. The fourth chapter outlines the data analysis and results, and the final chapter presents a comprehensive interpretation of the statistical results and consideration of their potential impact on knowledge and practice.

Chapter 2: Literature Review

This chapter provides overviews of the following topics: SPMI and its treatment approaches; the role and measurement of QoL as an indicator of wellbeing; and social support theory, dimensions, and measurement considerations. A systematic literature review was completed of published studies examining the relationship between objective social support (OSS), perceived or subjective social support (SSS), and QoL. The final section of the chapter presents an account of the methods used in the systematic literature review followed by a discussion of the selected studies that are directly relevant to the research question, and the gaps this study intends to address.

Severe and Persistent Mental Illness

Definitions and Diagnosis

The term “severe and persistent” as it is applied to people with long-term psychiatric conditions has replaced more pessimistic terminology that represented continuous and untreatable illness (Johnson, 1997). People who have severe and persistent functional disabilities resulting primarily from psychiatric illness often suffer partial or total impairment of instrumental role performance, symptomatic impairment, and social inadequacy (Schinnar, Rothbard, Kanter, & Jung, 1990). In 1987, the National Institute of Mental Health (NIMH) proposed a consensus definition of SPMI, which was based on a composite of three criteria: diagnosis, disability, and duration (Parabiaghi, Bonetto, Ruggeri, Lasalvia, & Leese, 2006; Schinnar et al., 1990). At the time, the diagnostic criterion described SPMI as consisting of non-organic psychoses or personality disorders while the disability criterion included dangerous or disturbing social behaviour, moderate impairment in work and non-work activities, and mild impairment in fulfillment of basic needs (Parabiaghi et al., 2006). The duration criterion stipulated a two-year or longer history of mental illness or treatment (Parabiaghi et al., 2006). In the field of mental health, the characteristics of diagnosis, disability, and duration continue to be used to define SPMI. Many operationalizations include a diagnosis of a major mental illness (e.g., schizophrenia, major depression), severe disability (e.g., according to required level of functional support), and duration of illness (e.g., at least one year) (Parabiaghi et al., 2006; Schinnar et al., 1990).

While SPMI can include a range of psychiatric diagnoses, people with schizophrenia, bipolar disorder, and major depression most frequently meet the criteria. In prevalence tests using the NIMH definition, Ruggeri and colleagues (Leese, Thornicroft, Bisoffi, & Tansella, 2000) found that more than one-third of patients with a diagnosis of functional psychosis would be considered to have SPMI (Ruggeri et al., 2000). Among the patients who were defined as having SPMI, about 40% were diagnosed with a non-psychotic mental disorder (Ruggeri et al., 2000).

People with SPMI primarily have emotional problems but cognitive deficits often exist, as well. For example, those with psychotic illnesses typically show impairments in insight, i.e., awareness of their illness, as well as in conceptualization, attention, and memory (Johnson, 1997; Holthausen, Wiersma, Cahn, Kahn, Dingemans, Schene et al., 2007). Johnson (1997) provides a striking example of a young man who was accepted to Harvard with SAT scores at the 99th percentile. He left Harvard following a diagnosis of schizophrenia and, two years later at a time that he was once again functionally well, he took another college entrance exam and scored at the 2nd percentile (Johnson, 1997).

“These cognitive and affective deficits contribute to the social skills problems...[that] are the essential parts of the definition of SPMI” (Johnson, 1997, p.249).

The heterogeneous group of individuals suffering from SPMI may experience acute episodes of symptoms--often requiring periods of re-hospitalization--interlaced with periods of less debilitating impairment. Nevertheless, individuals often require consistent availability of some degree of support (Drake, Green, Mueser, & Goldman, 2003; Spaulding, Sullivan, & Poland, 2003).

Prevalence and Societal Burden

The social and economic costs of mental illness are enormous, and the prevalence of several disorders in some age groups is increasing (Slomp, personal communication, February 9, 2007). Alberta Health and Wellness (AHW; 2006) reports that each year, about half a million Albertans--17% of the population--receive mental health services from physicians, based on billings for physician services for psychiatric disorders. This compares to treated prevalence of 13% to 14% in the early to mid-1990s (Slomp, personal communication, February 9, 2007). Considering diagnoses that typically meet SPMI criteria, in 2001, the prevalence of major depression among Canadians was estimated to be 4.1% to 4.8% (Institute of Health Economics; IHE, 2006), which corresponds to at least 135,000 Albertans (based on Alberta Municipal Affairs 2006 Official Population List, includes all ages; AHW, 2006). The same year, the prevalence of schizophrenia among Canadians was estimated at 0.3% (IHE, 2006) or nearly 10,000 Albertans (AHW, 2006), and bipolar disorder was estimated to have a prevalence of 0.2% to 0.6% (IHE, 2006) or as many as 19,000 Albertans (AHW, 2006).

Mental illness imposes a substantial economic burden on individuals and society. Using data from national surveys, Health Canada (2002) reports that in 1998 the total economic costs of mental illness were $7.87 billion (IHE, 2006). Of this total, direct treatment and support costs were $4.68 billion, or 5.4% of the total health care expenditures for all illnesses (IHE, 2006). Indirect costs, i.e., the value of reduced or lost productivity, amounted to a further $3.19 billion (IHE, 2006). These sums can be better appreciated by considering several of the constituent costs. In Alberta, for example, hospitalizations account for well over one third of the province’s mental health expenditures (IHE, 2006). The average stay in hospital for an individual with schizophrenia is 24.9 days with an aggregate cost of $13,080 (IHE, 2006). Hospital stays for major depression average 20 days with a cost of $9,553 per case (IHE, 2006). While these amounts are staggering, hospitalizations are typically periodic for stabilized and supported individuals with SPMI. The cost of providing supports through community mental health clinics and other outpatient services accounts for a further 24% of provincial mental health expenditures (IHE, 2006).

According to Stephens and Joubert (2001), limitations of the approaches used by Health Canada result in considerable underestimates of the costs of mental health. For example, estimates are based on publicly insured services, yet according to data from the 1996/97 National Population Health Survey, 79% of Canadians who consulted a psychologist in the year and 71% of those who consulted a social worker did so in the absence of any physician consultation (Stephens & Joubert, 2001). Due to these and other methodological considerations, Stephens and Joubert (2001) conclude “...with fair confidence that the economic burden of mental health problems--both medically treated and not--is $14.4 billion annually, at a minimum" (p.7). Assuming the same rates of care over the past ten years, estimates in current dollars would approach $23 billion (C. E. Adair, Departments of Psychiatry and Community Health Medicine, University of Calgary, personal communication, March 9, 2007).

Productivity losses due to mental illness are also a major economic consideration. Of Canadians age 35-49 who reported being unemployed for the year 2003, approximately 25% were not working due a diagnosed mental illness (IHE, 2006). Cost of unemployment due to mental illness is equivalent to .66% of Canada's Gross National Product; a further .22% is due to absenteeism (IHE, 2006). The World Health Organization (WHO) estimates an unemployment rate of 90% among persons with a serious psychiatric background (Ruesch, Graf, Meyer, Rossler, & Hell, 2004). While the burden to society is enormous, the centrality of work to human existence suggests that the damage to life satisfaction for these individuals may be a much greater cost.

Changes in Treatment Approaches in the 20th Century

For much of the 20th century, institutionalization was the primary response to SPMI (Dowdall, 1999). In 1911, six years after becoming a province, Alberta's first institution was constructed near Ponoka to house people with SPMI, many of whom had previously been confined in jails in an effort to segregate them from a frightened public (LaJeunesse, 2002). Additional institutions were built near Edmonton (1923) and Claresholm (1933), though patients received primitive treatment or custodial care, at best (LaJeunesse, 2002). Medications that were developed and introduced in the 1950s brought new hope by addressing some of the symptoms of psychiatric disorders (LaJeunesse, 2002). Despite debilitating side effects, these medications, along with social advocacy for the rights of the mentally ill and political agendas based on fiscal incentives, prompted a transformation in the scope of mental health care (Grob, 1983). Over the past 50 years, more effective medications with improved side effect profiles have increasingly become available (LaJeunesse, 2002).

The deinstitutionalization of psychiatric services began in approximately 1960 (LaJeunesse, 2002). Deinstitutionalization represents the removal of patients from institutions and their transfer into community-based settings, as well as the prevention of hospitalization for people with mental illness who might previously have been considered for admission (Bachrach, 1983). In the 1960s and 1970s, there was rapid movement of mental health patients out of hospitals and into the community, accompanied by a slow growth of community mental health services (Sealy & Whitehead, 2004). Evidence for the profoundness of this shift is provided by Health and Welfare Canada, which estimates that the number of inpatient beds in psychiatric hospitals decreased from just over 69,000 in 1964 to about 20,300 in 1980-81 (Sealy & Whitehead, 2004). In 1965, Alberta had the highest number of beds per capita in Canada with 4.1 per 1000 (Sealy & Whitehead, 2004). By 1980-1981, Alberta had closed the greatest number of beds per capita, resulting in 0.7 beds per 1000 capita (Sealy & Whitehead, 2004). This reduction in beds from nearly 6000 to just over 1600, denotes a decrease of 82.9% in psychiatric inpatient beds in Alberta (Sealy & Whitehead, 2004). Between 1985 and 1999, the process of deinstitutionalization in Canada continued. The average number of days of care in psychiatric hospitals and in psychiatric units decreased by 33.7% nationally, and by 48.9% provincially (Sealy & Whitehead, 2004).

In the decades following deinstitutionalization, more and more emphasis has been placed on providing community-based care that will meet the diverse needs of persons with SPMI, with the intention of increasing their wellbeing and offering them a better life. In the late 1980s, Alberta reported annual operating expenditures for community psychiatric services of $17.97 million (Sealy & Whitehead, 2004). By 1998-99, provincial operating expenditures in the community were $62.58 million (Sealy & Whitehead, 2004). While these figures are not adjusted for inflation, they do convey the increasing focus on community care for individuals with SPMI, many of whom became homeless or incarcerated due to insufficient community services following the downsizing and closing of psychiatric institutions (LaJeunesse, 2002).

Community support services may range from direct assistance with instrumental functioning (e.g., assistance with shopping) or entitlements (e.g., securing disability income, obtaining adequate housing) to skills development (e.g., vocational skills training; Monroe-DeVita & Mohatt, 1999). The goal of psychosocial rehabilitation is to enable individuals to compensate for functional deficits, and interpersonal and environmental barriers, to restore ability for independent living and effective life management (Test, 1998; Test & Stein, 2000). An example of community-based psychosocial rehabilitation is Assertive Community Treatment (ACT). ACT is an intensive approach to reducing symptoms and preventing relapse, often indicated for only a small proportion of those with SPMI, i.e., those who have multiple episodes of illness, drug non-compliance, and high use of psychiatric hospitalizations and other services (Test, 1998; Test & Stein, 2000). ACT teams provide continuous attention to facilitate access to needed services and resources. This may involve medication support, counselling and psychoeducation for family members, financial management, and assistance with social relationships, recreation, vocational skills, and self-care (Test, 1998; Test & Stein, 2000). In addition to its effectiveness in reducing hospitalizations, evaluations of ACT indicate that its patients spend more time in independent living situations, and show more favourable community adjustment in the areas of employment, social relationships, symptomatology, and satisfaction with their lives (Test, 1998; Test & Stein, 2000).

More and more, psychiatric services emphasize flexibility in care provision due to recognition of the need for a system that can respond to individuals who are entire persons (Drake et al., 2003) and who suffer from chronic illnesses that are by nature inconsistent (Spaulding et al., 2003). Comprehensive care is intended to address the unique mental, physical, social and spiritual needs of individuals, which is believed to be the most effective at minimizing disability and enhancing QoL (Cochrane, Goering, Durbin, Butterill, Dumas, & Wasylenki, 2000; Lafave, de Souza, & Gerber, 1996; McGrew, Bond, Dietzen, McKasson, & Miller, 1995).

Quality of Life in SPMI

An accompanying development to advancing deinstitutionalization was that the lack of medical knowledge to provide a means to cure SPMI created appeal for clinicians to focus on patients’ comfort as a more realistic goal (Baker & Intagliata, 1982; Holloway & Carson, 2002). At the same time, clinicians, researchers and administrators began increasingly to question to what extent community service alternatives actually provided a better life than hospitals had for people with SPMI (van Nieuwenhuizen, Schene, Boevink, & Wolf, 1997). The heightening complexity of interventions for SPMI required evaluation using a multidimensional and comprehensive construct such as QoL (van Nieuwenhuizen et al., 1997). QoL takes into account improvements in function or distress that fall short of complete cure, yet are consistent with the intricacies of life (Ruggeri, Gater, Bisoffi, Barbui, & Tansella, 2002). The shift in clinical practice and research from narrowly evaluating treatment effectiveness by symptom reduction, and the corresponding attention to QoL of persons with SPMI, proclaims their right to lead a decent life and to satisfy their physical and spiritual needs as human beings (Lefley, 1998). The basic philosophy behind QoL as an outcome measure is that by measuring QoL (along with symptoms and functioning), a full picture of the impact of treatment interventions can be gained (van Nieuwenhuizen et al., 1997). To reliably measure QoL in people with SPMI, the question of what determines QoL must be addressed.

Lehman (1996) notes that "at a minimum, QoL covers persons' sense of wellbeing; often it also includes how they are doing (functional status) and what they have (access to resources and opportunities)" (p. 78). Becker and colleagues (Diamond, Douglas, & Thornton,1997) and Lefley (1998) assert that QoL is a multidimensional construct encompassing physical health, psychological wellbeing, functional roles, and subjective sense of life satisfaction. The WHO frames QoL in a universal context, i.e., “individuals’ 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” (Korr & Ford, 2002, p.21). Each of these conceptualizations recognizes QoL as having both objective and subjective components (Diamond & Becker, 1999; Holloway & Carson, 2002; Nelson, Hall, Squire, & Walsh-Bowers, 1992). Objective QoL consists of observable facets of social functioning such as employment status, activities of daily living, and leisure activities (Diamond & Becker, 1999). Subjective QoL relates to individuals’ degree of satisfaction with their activities and lives in general (Diamond & Becker, 1999).

There are a variety of theoretical views on the proportionate impact of individuals’ subjective experience of life relative to objective circumstances, and how much each of these states and systems changes over time (Atkinson & Zibin, 1996). Pavot and Diener (1993) suggest that the subjective assessment of life circumstances is based on a comparison between standards and expectations that are relatively insulated from variable mood states. As a result, these authors concede that the construct of life satisfaction provides a relatively stable, global indicator of wellbeing (Pavot & Diener, 1993). Others assert that the quality of experience within each of the measured domains is affected by the internal states of physical functioning, emotional wellbeing and personal values (Atkinson & Zibin, 1996; Holloway & Carson, 2002). Like external conditions in the physical and social environments, these internal states and value systems may change and interact (Atkinson & Zibin, 1996). Likewise, there are contentions that factors specific to mental illness may impact subjective QoL (Holloway & Carson, 2002).

Concerns about the practical application of QoL outcome measures among people with SPMI center around arguments that QoL ratings may be contingent on adaptation of expectations to life circumstances (Evans, Banerjee, Leese, & Huxley, 2007) and may be closely related to depression (Moore, Hofer, McGee, & Ring, 2005). Evidence from a two-year comparison of life conditions along with subjective QoL ratings among individuals with SPMI, those with less severe mental illness, and the general population, suggests that these concerns may be misplaced (Evans et al., 2007). Not surprisingly, the SPMI group was disadvantaged in most objective lifestyle characteristics compared to the other two groups, and had lower subjective QoL ratings overall (Evans et al., 2007). However, life indicators were not significantly associated with subjective QoL in the SPMI group (Evans et al., 2007), suggesting that, over time, adaptation did not occur. Trompenaars and colleagues (Masthoff, Van Heck, Hodiamont, & De Vries, 2006) studied the relationship between depressive symptoms and QoL among 641 individuals with and without a diagnosed mood related disorder. These authors validated previous research suggesting that QoL is inversely related to depression (Angermeyer, Holzinger, Matschinger, & Stengler-Wenzke, 2002; Kuehner & Buerger, 2005; Moore et al., 2005), but found that this relationship "...was not caused by an overlap between the concepts depressive symptoms and QoL, shown by the relatively small common variance between depressive symptoms and QoL" (Trompenaars et al., 2006, p.353). There seems to be a general accord across the extant literature that symptoms of mental illness in general, regardless of particular diagnosis, are inversely related to QoL (Hansson & Bjorkman, 2007; Holloway & Carson, 2002; Wehmeier, Kluge, Schneider, Schacht, Wagner, & Schreiber, 2007). However, as Trempenaars et al. conclude, the experience of mental illness should be seen as a valid influence on QoL rather than as an impediment to its accurate measurement.

Given that QoL tends not to be strongly associated with current life conditions among individuals with SPMI (Evans et al., 2007), most recently, QoL models that place subjective life satisfaction as paramount are highly endorsed (WHOQOL Group, 1995). Ample research has observed that objective and subjective QoL are only minimally correlated, if at all (Barry & Zissi, 1997; Dickerson, Ringel, & Parente, 1998; Holloway & Carson, 2002). For example, patients often report themselves more satisfied with aspects of their lives than clinicians report them to be, perhaps because they have adjusted their expectations over time and become either more satisfied or more resigned to the objective circumstances of their lives (Barry & Zissi, 1997; Dickerson et al., 1998). In contrast, staff ratings may be based on their own requirements for self-satisfaction (Dickerson et al., 1998). The observation that subjective QoL is not necessarily reflected from objective indicators of life quality, stresses the need to consider objective life circumstances within the context of the perceived satisfaction with those circumstances when measuring QoL.

Regardless of theoretical bent, over the last two decades, QoL has become widely accepted as an outcome measure of the effectiveness of care provided (Korr & Ford, 2003). Therefore, improving QoL in the patient’s eyes has become the major goal of treatment for people with SPMI (Diamond & Becker, 1999).

Measurement of Quality of Life in SPMI

Despite the fundamental importance of QoL to patients and their families, and its accepted status for evaluating the effectiveness of treatments and programs, its measurement has remained somewhat elusive (Holley, 1998). One of the themes arising from a national workshop in 1997, which brought together patients, families, providers, researchers, and professionals from across Canada, was that the central requirements for QoL measures are that they be comprehensive, sensitive, and valid (Holley, 1998).

Many domains that can potentially impact QoL have been identified (Holloway & Carson, 2002), and a range of these domains needs to be reflected in comprehensive scales. In a review of 28 QoL instruments, Atkinson and Zibin (1996) found that most measures indeed cover a broad range of QoL dimensions, i.e., heath status, psychiatric symptomatology, financial situation, living arrangement, family, social/love relationships, leisure/creativity, community productivity, religion and self-esteem/ wellbeing. From this list, it is apparent that the comprehensive measurement of QoL encompasses many dimensions that are conceivably important to the target population.

Due in part to the lack of correlation between subjective and objective dimensions of QoL, some suggest using a frame of reference that is sensitive to the relative importance of different life areas for each individual (Barry & Zissi, 1997; Holley, 1998; Lefley, 1998). In this way, discrimination between individual variations in experiences, preferences and priorities may be captured, which would address the concern that Holloway and Carson (2002) raise when interpreting subjective QoL alone, "...that the salience of life domains will vary between individuals and over time within an individual depending on each person's expectations, aspirations, self-appraisal, coping strategies and current life experiences" (p. 178). Accordingly, instruments have been developed that allow respondents to identify and weight life domains. Diamond and Becker (1999) base their considerable body of research on QoL as a person's "...feeling of wellbeing according to the satisfaction or dissatisfaction with the dimensions of life that he or she considers the most important" (p. 29). Consistent with views such as these, incorporating that which the client holds most valuable may provide a more sensitive and valid indicator of wellbeing.

Other researchers propose that the practice of weighting the personal importance of items is unnecessary and even methodologically flawed (Trauer & Mackinnon, 2001).

Trauer and Mackinnon (2001) assert that involving patients in instrument development generates items that are already directed toward areas of importance. In addition, respondents tend to implicitly weight items as they complete the instrument, which makes explicit weighting redundant (Trauer & Mackinnon, 2001). These authors also note concerns about the selection of domains for instruments, and suggest that incorporating qualitative items into QoL scales would identify areas that are important to the individual rather than forcing respondents to rate their satisfaction with domains that may not be of personal importance (Trauer & Mackinnon, 2001). Another issue with the practice of weighting domains relates to the typical procedure for scoring weighted items, which is to multiply the rating of satisfaction by that of importance. Ambiguity may arise using this procedure in that the same composite score can be obtained from a high satisfaction/low importance rating or a low satisfaction/high importance rating (Trauer & Mackinnon, 2001).

In addition to selecting domains and assessing the importance of these domains, another area of QoL measurement concerns the validity of assessing multiple perspectives on client QoL (Diamond & Becker, 1999). The involvement of people with SPMI in the construction of outcome measurements has indicated that patients often have a world view different from clinicians, and that they may have different perceptions of therapeutic progress and treatment goals (Lefley, 1998). Assessing perspectives not only of the individual patient, but also of family members, friends, and clinicians, provides corroborative information and may increase validity (Diamond & Becker, 1999). Conversely, the recent focus on measuring the perceptions of the respondent over and above any objective dimensions, suggests that the assessment of multiple perspectives may also become controversial in QoL measurement.

While there is general agreement that the assessment of QoL should be comprehensive, sensitive and valid, the methods of striving for these standards encompass a range of perspectives. Employing multiple measures over time, as Barry and Zissi (1997) suggest, may increase confidence in results. While QoL is widely recognized as the goal of treatment for SPMI, measurement of this multidimensional construct continues to evolve. The value of assessing QoL lies in the widening of the scope of outcome assessment from symptoms to issues of concern such as functioning, subjective appraisal of side effects, and wellbeing (Barry & Zissi, 1997). The limitations of QoL measurement lie in the heterogeneity of the construct (Barry & Zissi, 1997).

Generic and disease-specific assessment of QoL. There are two basic types of instruments used to measure QoL (Basu, 2004). Disease-specific instruments are designed to assess particular patient populations or range of diagnostic groups and to measure the aspects of life impacted by the illness only (Basu, 2004; Patrick & Deyo, 1989). These instruments may be more sensitive for detecting and measuring small but clinically important change or responsiveness to treatment (Patrick & Deyo, 1989). Generic measures are intended to be applicable across disease types and severities, across treatments and interventions, and across cultural subgroups (Basu, 2004). Generic QoL instruments are necessary to compare outcomes across different populations and interventions (Patrick & Deyo, 1989).

Generic measures of QoL include concepts of “health-related” QoL, or HRQoL. This is a broad term that generally contains five categories: Duration of life, impairment, functional state, perception, and social opportunities (Patrick & Deyo, 1989). These categories are health-related to the extent that disease, injury, treatment, or policy influences them. There are many accepted generic health status measures such as the Quality of Wellbeing Scale (QWS; Anderson, Kaplan, Berry, Bush, & Rumbaut, 1989), the Sickness Impact Profile (SIP; Bergner, Bobbitt, Carter, & Gilson, 1981), the EuroQol (EQ-5D; EuroQol Group, 1990), and the WHOQOL (WHOQOL Group, 1994). Each has been tested extensively with different patient populations and demonstrates acceptable validity, reliability, and responsiveness (Patrick & Deyo, 1989; QWS: Kaplan, Anderson, Wu, Mathews, Kozin, & Orenstein, 1989; Erickson, Kendall, Anderson, & Kaplan, 1989; SIP: Follick, Smith & Ahern, 1985; Hart & Evans, 1987; Ott, Sivarajan, Newton, Almes, Bruce, Bergner, et al., 1983; EQ-5D: Bolscher & Schulenburg, 1997; Yfantopoulos & Papagianopoulou, 2004; Glick, Polsky, Willke, & Schulman, 1999; McDowell & Newel, 1996; WHOQOL: The WHOQOL Group, 1994; 1998).

Numerous disease-specific QoL scales that are sensitive to psychiatric disorders have been developed over the past two decades. These scales meet the needs of clinicians and researchers because they are most responsive to clinical changes that occur over time (Patrick & Deyo, 1989). Disease-specific measurement scales are better able to discriminate between improved and unimproved patients, and accurately quantify minimal changes that are particularly important measurement objectives for clinical research and practice (Patrick & Deyo, 1989). Some of the most frequently referenced include the Lehman Quality of Life Interview (QOLI; Lehman, Ward & Linn, 1982), the Satisfaction with Life Domains Scale (SDLS; Andrews & Withey, 1976), and the Wisconsin Quality of Life Inventory (W-QLI; Diamond & Becker, 1999).

The relative advantages and disadvantages of generic and disease-specific measures depend primarily on the measurement context and the objectives of the research or clinical analysis (Patrick & Deyo, 1989). HRQoL measures may be used to discriminate among respondents at a point in time, to predict future outcomes or events, and to measure changes in the population over time (Patrick & Deyo, 1989). However, disease-specific measures with items that assess particular concerns or conditions of interest may be particularly sensitive to within-subject changes, and thus more responsive than generic measures (Patrick & Deyo, 1989). One approach is to use a generic health status instrument in addition to a disease-specific measure (Patrick & Deyo, 1989). Generic measures allow external comparisons; the disease-specific measures can validate the generic ones in certain studies.

Social Support

In community treatment settings that strive to enhance QoL for people with SPMI, a construct that has received increasing attention over the past two decades is that of social support (Dowdall, 1999; Monroe-DeVita & Mohatt, 1999; Yanos et al., 2001). Impairment in social functioning is one of the hallmarks of serious psychiatric illness (Goldberg et al., 2003; Macdonald et al., 2000). The social networks of people with SPMI have repeatedly been shown to be smaller than those of the general population (Cohen & Sokolovsky, 1978; Froland et al., 2000; Lipton, Cohen, Fischer, & Katz, 1981). Smaller networks have been associated with reduced QoL (Baker, Jodrey, & Intagliata, 1992; Becker, Leese, Clarkson, Taylor, Turner, Kleckham et al., 1998; Corrigan & Buican, 1995; Lam & Rosenheck, 2000), more frequent service utilization (Albert, Becker, McCrone, & Thornicroft, 1998; Lam & Rosenheck, 1999), greater clinical impairment, and more frequent episodes of acute illness (Cohen, Hammen, Henry, & Daley, 2004; Goldberg et al., 2003; MacDonald, Jackson, Hayes, Baglioni, & Madden, 1998; Meeks & Hammond, 2001). Some researchers, however, note that integration into social networks may have mixed effects (Malone, 1988; Nelson et al., 1992) and assert that conflict in relationships often exists along with support (Kawachi & Berkman, 2001). Moreover, interventions to improve functioning through social support have had mixed success (Cohen et al., 2001; Hasson-Ohayon, Kravetz, Roe, Rozencwaig, & Weiser, 2006) and evaluations of social support intervention programs have had disappointing results (Thompson & Ontai, 2000). In short, the associations between social support and mental health are complex, and providing effective social support interventions is challenging. This section begins with a summary of prevalent theoretical perspectives on social relationships and health. It then presents conceptualized dimensions of social support that may influence health, and discusses some of the challenges in social support measurement and in selecting a measurement tool.

Social Relationships and Health

Natural Law theory, rooted in the thought of Plato and Aristotle, holds that the person is naturally social and cannot be fully human outside of society (Morgan, 2002). We support one another, and we seek support from one another, because we believe that it is truly human to do so (Morgan, 2002). The focused study of social support as a factor in mental health began in the 1970s with the work of Cassel, Caplan, and Cobb (Chronister, Johnson, & Berven, 2006). Social support has been defined as *“verbal and non-verbal information, advice, tangible aid, or actions offered by others or drawn from their presence, which has a beneficial and sustaining effect for the recipient”* (Sheafor, Horejsi, & Horejsi, 2002). However, there is a general consensus among researchers that social support is a broad, multifaceted construct with no single or simple definition (Chronister et al., 2006). Instead, the diversity of what is subsumed under social support is often represented by conceptualizing different forms (e.g., networks, perceptions), sources (e.g., family, friends, professionals), or other expressions of the construct (e.g., stigma).

In general, social support is thought to affect mental health through its influence on emotions, cognitions, and behaviours, by preventing extreme responses associated with dysfunction (Cohen et al., 2001). Support may alleviate the impact of stress by providing a solution to a problem, reducing the perceived importance of the problem, or providing a distraction from it (Cohen et al., 2001). It is possible that isolation itself prompts illness by increasing negative affect and alienation and decreasing feelings of control and self-esteem (Cohen et al., 2001). These negative psychological states may increase neuroendocrine response, suppress immune function, and interfere with health behaviours (Cohen et al., 2001).

Theoretical Models of Social Support

Two widely recognized models that identify conditions under which social support influences health are the stress-buffering model and the main-effect model (Cohen & Wills, 1985). The stress-buffering model proposes that support is related to health primarily for people under stress in that it moderates the effects of the stress (Cohen et al., 2000). The belief that others will provide necessary resources may re-define the potential for harm posed by a situation, bolster the perceived ability to cope, and prevent maladaptive behavioural responses (Cohen et al., 2000). Maladaptive responses to stressful events have also been found to be reduced if people are available to talk to about problems (Cohen et al., 2000). In this model, stress is conceptualized as having a more negative effect on health under conditions of low support than under conditions of high support (Chronister et al., 2006).

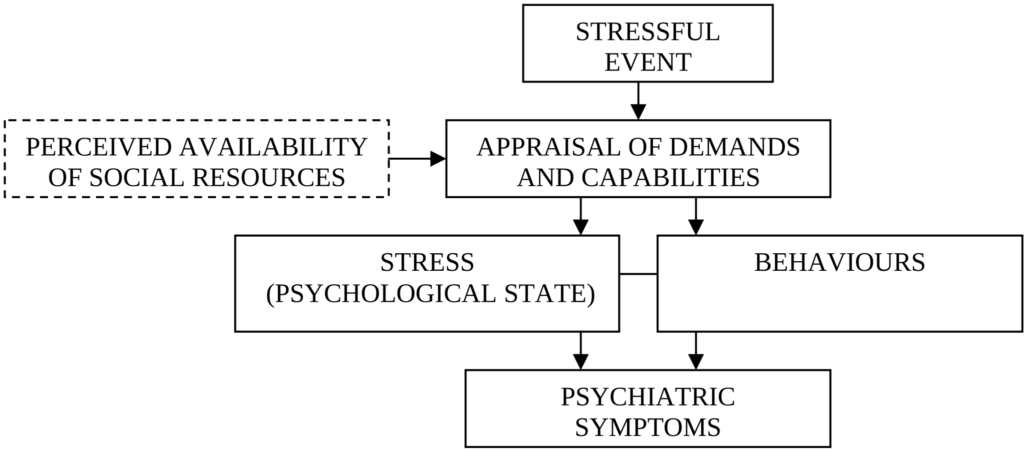

Figure 2. Stress-Buffering Model. (Adapted from Cohen et al., 2000).

The main-effect model proposes that high levels of support promote wellbeing regardless of the level of stress. Integration in a social network is thought to provide a sense of predictability, purpose, belonging, security, and self-worth (Cohen et al., 2000). These positive psychological states are presumed to be beneficial because they reduce despair and result in greater motivation for self-care (Cohen et al., 2000). This model also holds that those who participate in a social network are subject to peer pressures that influence health behaviours, i.e., exercise, diet, or smoking (Cohen et al., 2000).

Research supports both models but each model seems to reflect different dimensions of social support (Chronister et al., 2006). Evidence for stress-buffering is found when the social support measure assesses individuals’ subjective evaluation of the adequacy of their support systems (Cohen et al., 2000; Thoits, 1992). The main-effect model holds true when measuring social support by the objective number and frequency of individuals’ social contacts (Chronister et al., 2006).

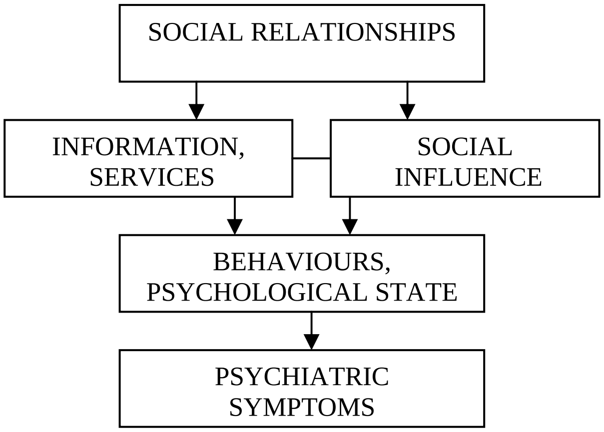

Figure 3. Main-Effect Model. (Adapted from Cohen et al., 2000).

Objective Dimensions of Social Support

Objective measures of social support typically represent the number of discrete persons in the support network overall or in key subgroups of the support network, such as family, friends, or co-workers (Corrigan & Phelan, 2004). Social networks involve *structural characteristics*, e.g., size and composition of the network, frequency of contact; *interactional characteristics,* e.g., the extent to which social network members interact with or know one another; and *functional characteristics*, e.g., purposes served by network members such as provision of companionship or advice (Goldberg et al., 2003; Marsella & Snyder, 1981). Having a wide range of network ties provides multiple resources and thereby increases the probability of having access to an appropriate resource (Cohen et al., 2000). This may influence health behaviours or minimize stressful situations (Cohen et al., 2000). A network may also provide tangible services that result in better health for network members, i.e., by providing food, clothing, and housing (Cohen et al., 2000).

An important source of network members for many individuals is their workplace. Work is positively related to mental health in part because it promotes opportunities for social contacts (Tausig, 1999). Most people with SPMI are unable to function in a standard work environment; some estimates suggest that as few as 10% of these individuals are employed (Ruesch et al., 2004). This can have effects on personal identity and QoL, and it eliminates a rich source of social relationships thereby increasing the potential for isolation. Ruesch and colleagues (2004) examined the relationship between work status and QoL in 261 psychiatric inpatients. As expected, participants with an occupation had a larger social network (Ruesch et al., 2004). Using structural equation modelling, the authors found that these supportive relationships primarily explained better subjective QoL due, conceivably, to the opportunities for social interaction at work (Ruesch et al., 2004).

While some studies have demonstrated an association between the size of a patient's social network and QoL (Corrigan & Buican, 1995; Lam & Rosenheck, 2000), a number of researchers have found that larger social networks are not necessarily associated with better network function or with more reciprocity in relationships (Macdonald et al., 1998; Nelson et al., 1992; Pickens, 2003). Perhaps one of the participants in the Pickens (2003) study accounted for these findings most aptly when she explained that "...the more relationships she had, the more there was to go wrong" (p. 121). Kawachi and Berkman (2001) suggest that social support can promote a sense of self-efficacy and self-esteem but it may also become "disabling" by reinforcing dependence (p. 461). Appreciation of the complex nature of social support comes from Vaux (1988): "Social support phenomena involve both objective and inherently subjective elements: both actual events and activities and the participants' perceptions and appraisal of these. Both must be addressed for a complete understanding of social support." (p. 17).

Subjective Dimensions of Social Support

Subjective factors of social networks include the perceived quality of the network and of social interactions. Assessment of subjective social support frequently includes satisfaction with the network, mutuality between the person and the network, and obligation toward network members (Corrigan & Phelan, 2004). In 1985, Cohen and Wills reviewed over 40 studies testing the hypothesis that social support provided protection from the negative psychological consequences of stress. They concluded that whether or not one actually receives support is less important for health and adjustment than one's beliefs about its availability (Cohen & Wills, 1985). These findings are consistent with those of more recent studies. Macdonald et al. (2000) studied the social networks and perceived social support of people with early psychosis and those without a mental illness. These authors found no differences between the two groups in the amount of perceived social support, even though the psychosis group identified significantly smaller networks with fewer friends, fewer people to turn to in a crisis, and a higher likelihood of service providers as social network members (Macdonald et al., 2000). This led the authors to propose that people with early psychosis could derive high levels of support from one or two relationships (Macdonald et al., 2000), which seems to demonstrate the influence of perception and interpretation on the level of satisfaction with social support mechanisms and availability.

Negative social support. Among persons with SPMI, research has shown that negative social interactions, i.e., stigma, criticism, ridicule and rejection, are inversely associated with QoL (Link & Phelan, 2001; Nelson et al., 1992; Yanos et al., 2001) and predict adverse outcomes such as increased psychiatric admissions and depressive symptoms (Calsyn & Winter, 2002; Chinman, Weingarten, Stayner, & Davidson, 2001; Wright, Gronfein, & Owens, 2000). Support may be perceived as negative in a variety of ways, all of which cause the recipient to have reservations about the relationship (Lincoln, 2000). From the recipient’s perspective, support may entail indebtedness and obligation (Dressler & Badger, 1985; Thompson & Ontai, 2000), or supporters may cause stress by making demands or violating privacy (Lincoln, 2000; Thompson & Ontai, 2000). Support that is not reciprocated may also be considered negative support (Thompson & Ontai, 2000). Perhaps the recipient is not ready to accept the support, or the support is provided in a clumsy or detrimental way (Rook & Dooley, 1985). Regardless of the context for negatively perceived support, it is important to note that negative relationships may have a stronger effect on wellbeing than positive relationships (Lincoln, 2000), which seems to further demonstrate an essential role for perception in social support.

Measurement of Social Support in SPMI

Despite an increasing number of studies in the area, there is no standard theoretical model and there continues to be a lack of uniformity with respect to the definition of social support (Cohen et al., 2001; Hupcey, 1998; Winemiller, Mitchell, Sutlife, & Cline, 1993). The complex and multifaceted nature of social support accounts for much of the ongoing diversity in conceptualization and measurement of the construct.

One issue that is evident in social support literature is the use of unstandardized instruments, which may be developed specifically for a particular study and may not have established psychometric properties (Winemiller et al., 1993). This practice diminishes the ability to make comparisons between studies and ultimately undermines the findings of these studies (Winemiller et al., 1993).

Another primary issue is that global measures of social support are sometimes used, which overlook the multidimensional nature of the construct (Winemiller et al., 1993). Hupcey (1998) underscores the importance of clarifying support characteristics, specifically in terms of the number of people available or potentially available, frequency of contact, nature of relationships (e.g., spouse, friend, confidante, community), and actual source of support. Additional recommended areas of measurement include the type of support available or potentially available, and whether the support is provided or received (Hupcey, 1998; Winemiller et al., 1993).

While some researchers argue that measures of perceived social support may be inaccurate and therefore not a viable source of information (Antonucci & Israel, 1986; Dunkel-Schetter & Bennett, 1990), others assert that perceptions, though not always accurate, are extremely influential in determining satisfaction with and outcome of support (Heller, Swindle, & Dusenbury, 1986; Hupcey, 1998). Vaux (1988) stated that "actuality and perception may diverge... supportive acts may go unrecognized; affection may be taken for granted. In some cases, even unrecognized support may be influential .... but, in most cases, the perception of support or its absence would seem likely to have an effect regardless of actuality" (p. 16). Neglecting to clarify aspects of the construct such as perceived support, utilization of support or satisfaction with support, precludes important determinations of the differential effects of each of the network characteristics (Winemiller et al., 1993).

A number of instruments measuring social support have been developed over the several decades that this concept has been studied. Some have little psychometric support, and all vary in the number and type of dimensions assessed (Chronister et al., 2006). Evaluation of existing measures and systematic development of new measures is necessary to provide empirical support for their use in research and practice (Chronister et al., 2006). Cohen and colleagues (2001) state that a critical area of research that can be addressed with existing measures is the simultaneous measurement of network structures (i.e., objective social support) and functions (i.e., subjective social support), in an effort to clarify underlying processes for persons with chronic illnesses.

Social Support Instrument Selection. Existing measures of social support have been categorized in numerous ways, once again underscoring the variety of conceptualizations and measurements of social support. For example, in testing the suitability of two social support instruments among marginal populations, Bates and Toro (1999) applied categories formed according to four dimensions of support: structural, functional, perceived, and enacted. Structural support measurement tools typically assess network size, frequency of contact, or marital status. Functional measures of support assess the availability of certain types of support, such as tangible aid, advice, support for positive self-esteem, emotional support, and a sense of belonging (Bates & Toro, 1999). In Bates and Toro’s taxonomy, perceived measures of support assess either the perception that support is available if needed, or its adequacy if it has already been obtained. Tools measuring enacted support assess support that has been received in the past (Bates & Toro, 1999).

Winemiller and colleagues (1993) designed a comprehensive system to organize social support instruments by type of support measured. These authors adapted category identifiers originally proposed by Cohen and Wills (1985): esteem support (i.e., emotional support), information support (i.e., education, advice or referral), social companionship (i.e., leisure activity), and instrumental support (i.e., provision of tangible resources). Winemiller et al. added a fifth category to classify measures that also provided a global measure of social support. Measurement scales were further classified according to identifiers such as whether the support assessed was perceived or behaviourally referenced (i.e., objective), whether or not the instrument assessed network structure and orientation, and whether provision or receipt of support was assessed. Table 1 provides the classification of three scales according to criteria utilized by Winemiller et al. (1993). The three scales are those selected in studies detailed in the systematic literature review in the next section, as well as the scale used in the study providing data for the current study (i.e., Social Provisions Scale).

Table 1

*Categorization of Social Support Instruments**

Measure	Category	Support Type
Social Support Questionnaire	Esteem Informational Global	Perceived Provision Structure
Interview Schedule for Social Interaction	Social Companionship Esteem Instrumental Global	Perceived Provision Structure
Social Provisions Scale	Social Companionship Esteem Instrumental Global	Perceived Provision Orientation

*Adapted from Winemiller et al., 1993

In general, social support researchers may select from a number of reasonably sound measures (Cohen et al., 2001). Established instruments differ less in terms of psychometric properties than in adherence to particular theories and constructs. In selecting a measure, the essential criteria is that it reflect the theoretical basis for the study (Cohen et al., 2001). The continuing diversity of study objectives, as well as specific operationalizations and measures, allows for a rich body of cumulative evidence.

Systematic Literature Review

A systematic literature review, described next, was conducted to identify studies directly relevant to the relationship between OSS and SSS in the QoL and functioning of individuals with SMPI.

Parameters of the Review

The literature search was designed to comprehensively review a wide range of definitions and measures of SPMI, social support, and QoL. Databases were sourced according to the likelihood that they would provide an inclusive sample of mental health literature, medical literature, social psychology literature, and health administration literature. Searches were conducted in the following online databases: Academic Search Premier, Clinical Pharmacology, Econlit, ERIC, Evidence Based Medicine Reviews, HealthSTAR, Health Source (Nursing/Academic Edition), Medline, PsycINFO, Psychology and Behavioural Sciences Collection, CINAHL, Family and Society Studies Worldwide, Sociological Collection, and SocINDEX. In each database, searches were limited to articles that were peer-reviewed and that were published from January, 1996 to January, 2007. Each search was further restricted by language (i.e., English) and by participant type (i.e., human).

The key words and phrases selected for the initial search terms (i.e., “severe and persistent mental illness”, “social support” and “quality of life”) were entered in all combinations of several search fields in each database. Search fields included “title”, “subject”, “abstract” and “all text”. Options for branching of terms were employed such as thesaurus and Medical Subject Headings (MeSH), and these additional search terms were likewise entered in all combinations of the four search fields. For example, the term “severe and persistent mental illness” was expanded to other relevant search terms including: “chronic mental illness”, “serious mental illness”, “psychiatric disorders”, and “mental illness”.

The literature search yielded 126 citations, of which 44 were duplicates. A total of 82 abstracts, including empirical research and literature reviews, were examined for their relevance to the current study. Inclusion criteria are summarized in the abstract assessment form (Appendix A) and covered population (i.e., SPMI, adult), variables under study (i.e., specific measures of OSS, SSS, and QoL), data (i.e., quantitative), and design (i.e., quasi-experimental, experimental). Once the full text articles for selected abstracts were obtained, the references of all articles were reviewed as a means of generating additional relevant articles. Studies that did not *empirically* examine (i.e., collect and analyze data) the relationship between social support and QoL in the SPMI population were excluded. All of the final five selected articles were studies conducted in Canada, the United States, or the United Kingdom. The literature review process is summarized in Figure 4 (next page), and the selected articles are summarized in Tables 3 and 4, following a critical analysis. The tables are in chronological order and highlight features of the reviewed studies including author(s), terms used to describe OSS and SSS, sample description, data collection methods, statistical analyses and results.

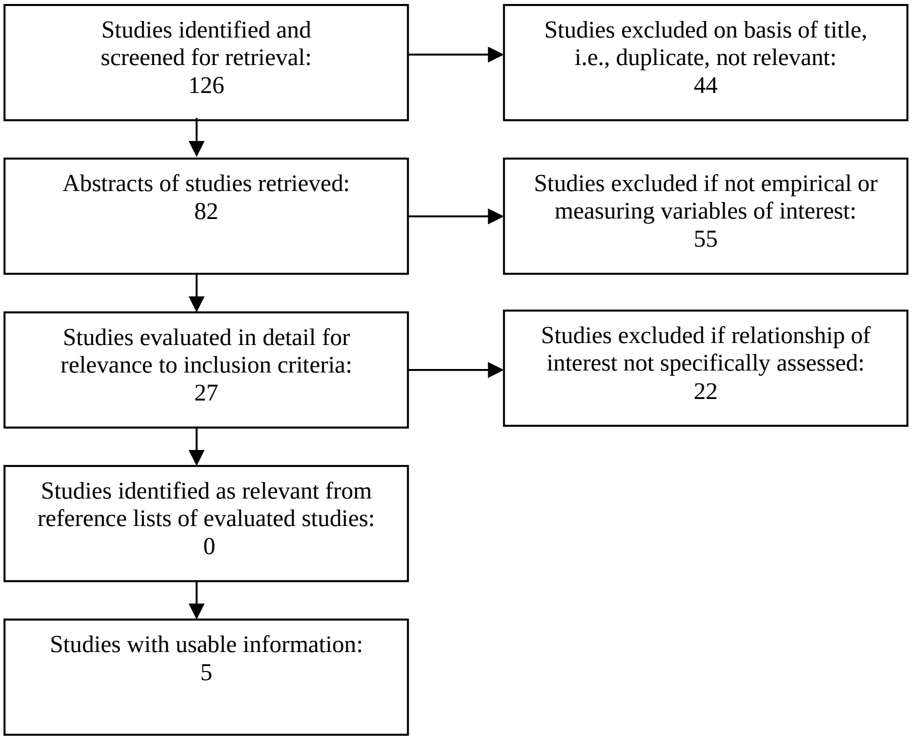

Figure 4. Flowchart of Systematic Literature Review Results (adapted from Petticrew & Roberts, 2006).

The systematic literature review resulted in only five studies that examined the relationship of interest from 1996 through 2007, and that met selection criteria. All five studies examined the relationship between OSS, SSS and QoL, often including functioning as an outcome variable as well. Four of the studies were cross-sectional. One of the studies was longitudinal, with a follow-up of 18 months. The following analysis critically examines the strength of the evidence reported within each of the five studies. All of the reviewed studies make important contributions to the literature on the questions surrounding social support and QoL in people with SPMI. The discussion is intended to reflect each study's ability to support causal inferences, and to identify gaps remaining in the knowledge base of this topic. Strength of evidence is rated according to the criteria outlined in Table 2 (Thomson, Petticrew, & Morrison, 2001). The discussion that follows corresponds to the assessment format developed by Zaza and colleagues (2000) for systematically evaluating study quality. This assessment format includes five components of quality including study descriptions, sampling, measurement, data analysis, and interpretation of results (Zaza et al., 2000).

Table 2

Strength of Evidence Assessment Criteria

Rating	Criteria
1: Very Weak	Cross-sectional studies No control of confounding variables Biased measurement of health outcomes
2: Weak	Prospective and retrospective studies; limited or no control of confounding variables Cross-sectional studies with a control group Appropriate measurement of health-related outcomes
3: Medium	Prospective and retrospective studies with >80% follow-up for >/= 6 months No control or comparison group Some control of confounding variables Appropriate measurement of health-related outcomes
4: Strong	Prospective study with noncomparable control group; >80% follow-up >/= 6 months Some control of confounding variables
5: Very Strong	Prospective study with >80% follow-up for >/= 6 months Randomized controlled trial or controlled study with comparable control group Objective measures of health-related outcomes

Critical Analysis of Cross-sectional Studies

One of the four studies that used a cross-sectional design was rated as very weak (McCormick, 1999). The generalizability of the sample and any sampling bias is difficult to confirm due to reporting deficiencies. The author provided support for measurement validity but used group administrations, which may have weakened the validity of responses. Methods of analysis were not sufficient to assess the strength of the evidence. Therefore, both internal and external validity are questionable in this case.

McCormick (1999). This author used a cross-sectional, single group design to survey adults (M = 42 years old) with SPMI from three treatment programs in a community mental health center. The diagnoses, illness durations, and levels of functioning were not reported for the 77 participants. Therefore, generalizability must be determined from indirect indicators, including marital status (71% were never married), employment status (86% were unemployed), education (54% did not complete high school), and housing status (66% lived in supervised living arrangements). While the study sample was reported to be a convenience sample, details of the methods used for sampling and characteristics of individuals who did not participate were not provided. This makes it difficult to determine if any bias was introduced at this point in the study. All scales were compiled into a survey presented by way of 10 group administrations during which the author and research assistants aided participants individually or in pairs to read the questionnaires. This method of collecting information has the potential of introducing bias, depending on the level of aid that was offered to participants and the degree of communication that occurred between participants. The author used primarily bivariate correlational analyses, which did not adjust for the possibility of confounding variables such as diagnosis, symptoms, and gender. The choice of multivariate regression analysis would typically have strengthened the results but, in this case, the positive correlation between satisfaction with social support and life satisfaction was not reproduced in regression analysis.

The other three studies that used cross-sectional designs were rated as weak. In all three studies, there was a lack of precision in determining SPMI, thereby weakening generalizability and external validity. However, two of the studies used comparison groups (Brunt & Hansson, 2002; Caron et al., 1998), and two studies used multivariate data analysis methods (Caron et al., 1998; Graham-Bevan, 2006). Sample selection varied in rigor. Though the extent of reporting also varies, each of the three studies seems to have used a form of convenience sampling. All of the studies used valid and reliable measurements for all variables of interest to this research.

Graham-Bevan (2006). This author used a cross-sectional single-group design. All 147 individuals in the study sample were homeless or lived in inadequate housing, and were in receipt of case management services. A diagnosis was recorded when the case manager of a participant communicated any information the worker had come across in the past about formally administered diagnoses, at any point during participants' life histories. Systematic collection of diagnoses would have strengthened the ability of the study to sufficiently describe the sample. In any case, the state of homelessness along with a current substance disorder (reported for 27.9% of the sample), may reduce the generalizability of this study to the population of people with SPMI who are supported in their living arrangement. The sampling method consisted of potential eligible participants being identified and contacted by their support worker to assess interest. If the client was interested, he/she met with a research assistant, who determined whether or not the client was capable of informed consent. Figures were not reported for either the number of eligible clients in the organization or the number of individuals who met with the research assistants but were determined to be incapable of consent. This method of sampling introduces the possibility of bias, i.e., the case managers may have selected according to a criteria distinct from the study criteria. Measurement and statistical analysis methods were a source of strength in this study. Graduate students trained on the measures administered interviews to clients in single sessions averaging 1.8 hours. A support worker familiar with each client's functioning completed the community ability scale (i.e., Multnomah Community Ability Scale). Hierarchical regression analyses were completed, adjusting for appropriate variables such as gender and symptom levels.

Brunt and Hansson (2002). These authors used a cross-sectional, comparison group design. The study sample included 74 adults (age 21-55) with SPMI who were inpatients in psychiatric hospitals or general hospital psychiatric units, residents of group homes, or individuals living independently with at least four hours per week of specialized support. The groups were reported to be similar across demographic, psychopathology and psychosocial functioning, with two exceptions. Inpatients (M = 34) were significantly younger than the other two groups (M = 41; p = 0.003), and had a shorter duration of illness (M = 8, M = 19, respectively, p = 0.001) (Brunt & Hansson, 2002). A diagnosis of psychosis was reported for approximately 68% of the entire sample. The generalizability of the sample is questionable based on diagnostic information alone. The sample was drawn from all individuals residing in the three forms of housing in a selected county at the time of the study. Six-nine percent of the population took part: 70% of inpatients, 73% of group home residents, and 63% of those living in supported individual residences. No data were collected on the individuals who declined participation. The administration process for the instruments is not reported, so it is impossible to evaluate the quality of the measurement component of this study. It is essential to determine the training level of those who rated participants on the Brief Psychiatric Rating Scale (BPRS) and the Global Assessment of Functioning (GAF), as the latter in particular is reported to have poor reliability in the absence of training (Bates, Lyons & Shaw, 2002). Generalizability of the sample is dependent on these assessments of symptom severity and functioning level, because a diagnosis of psychosis is insufficient on its own to determine SPMI. Correlational analyses and chi-squared tests were the methods of choice for data analysis, both of which are appropriate but do not adjust for variables such as the significant differences reported among groups for age and duration of illness.

Caron, Tempier, Mercier, and Leouffre (1998). These authors used a cross-sectional, comparison group design with 60 psychiatric patients, 79 welfare recipients, and 266 people of the general population. The sample consisted of outpatients with SPMI, for whom the most frequent diagnosis was schizophrenia (73.7%). The majority of participants in the sample was receiving antipsychotic medications (86%) and averaged 2.2 hospitalizations in the seven years previous to the study. Generalizability of the sample must be determined according to these factors because details of diagnoses, symptom severity and level of functioning are not provided. The mean age of participants was 46.9 years; the range was not reported. Details of the methods used for sampling and characteristics of individuals who did not participate were not provided, which makes it difficult to determine if any bias was introduced at this point in the study. Measurement and statistical analysis methods strengthened the reported evidence for this study. Social science graduates, using valid and reliable measures collected data from the client sample in one-to-one interviews. Multiple regression and discriminant analysis supported preliminary correlations, and adjusted for appropriate variables such as age.

Critical Analysis of the Longitudinal Study

One of the five studies was longitudinal and was rated as medium in strength of evidence due to the stronger study design (Bengtsson-Tops & Hansson, 2001). However, the strength of evidence was somewhat weakened since the data were collected at baseline and follow-up only rather than at more frequent intervals. Although the study included a normal control group, data were collected on the control group for only the social support measure so it was not useful in strengthening the evidence for the relationship of interest to the current study. Sampling included a stratified randomly selected procedure and cluster sampling. The study used measures that have empirical support for validity and reliability. Multivariate analyses were used, allowing for adjustment of variables as appropriate.

Bengtsson-Tops and Hansson (2001). These authors used a longitudinal design with 120 participants enrolled and 94 completing the 18-month follow-up (78%). The authors report that there were no differences between completers and dropouts in age, gender, duration of illness, psychiatric symptoms or psychosocial functioning. The study sample included individuals having schizophrenia or schizoaffective disorder and maintaining contact with an outpatient unit. Determination of SPMI was supported using severity of symptoms and level of functioning via BPRS (*M* = 35, range 18-59, *SD* NR) and GAF (*M* = 41, range 10-90, *SD* NR) scores. Participants' age varied widely (*M* = 47, range 19-81, *SD* NR); confidence in the sample's generalizability might be strengthened with a reported median and/or mode. Sample selection employed a stratified randomized procedure, using gender and diagnosis. The same individual, i.e., the first author, administered structured interviews at baseline and follow-up. Preliminary correlational analyses were supported by multiple regression, adjusting for appropriate variables such as symptom change and baseline scores.

Table 3

Summary of Studies: Sample, Design, Results

Author	Sample Size, Description	Design, Method	Type of Analysis, Main Results
Graham-Bevan. 2006. Canada.	Size: 147 (of clients contacted by support worker interested/ eligible/capable of consent--population NR). Description: Clients of outreach program; SMPI interfering with ADLs; living on streets, in shelters or inadequate housing. Mood Disorder (51.7%) Schizophrenia (47.6%) Substance Disorder (27.9%) Mean age of onset: 24. Mean age: 38.1 (16-66). 51.7% Male.	Cross-sectional. Graduate students trained on the measures administered interviews. MCAS completed by support worker familiar with client's functioning.	Hierarchical regression adjusting for gender and symptoms: OSS did not predict QoL *F*change(1,137)=0.78, *p*=0.38 and OSS did not predict Functioning *F*change(1,136)=0.00, *p*<.98 and SSS predicted QoL *F*change(1,122)=23.82, *p*=.00 and SSS did not predict Functioning *F*change(1,122)=0.21, *p*=.65 Pearson bivariate correlations: Gender associated with QoL (females reported lower QoL) *r*(141)=-.16, *p*<.05 and Gender associated with OSS (females reported higher OSS: *r*(141)=.20, *p*<.01 and Gender associated with Functioning (female's reported higher Functioning) *r*(143)=.21, *p*<.01
Brunt, Hansson. 2002. Sweden.	Size: 74 (of 108 meeting criteria). Description: SMPI, 3-month continuous inpatient admission (23) OR group home (27) OR independent living with 4+ hours/week home support (24). Psychotic Disorder (68%). Mean age of onset: 23. Mean age: 39 (21-55). 55% Male.	Cross-sectional. "Structured interviews were held" (administration process NR).	Correlational analyses: SS (Full Scale) inversely associated with Symptoms and Needs NR, *p*=.037 and SS (Full Scale) directly associated with QoL NR, *p*=.001 Stepwise regression: Better SS associated with higher QoL, accounting for 17.6% of variance in SS. Low "OSS" accompanied by higher "SSS" for all groups (NR).

Bengtsson-Tops, Hansson. 2001. Sweden.	Size: 94 (of 120 at baseline, of 155 eligible, of 253 stratified randomly selected). Description: Ongoing contact with outpatient unit. Schizophrenia / Schizoaffective (100%). Mean age: 47 (19-81). 53% Male. Normal control group: 340.	Longitudinal: 18-month follow-up. First author administered structured interviews at baseline and follow-up.	Mann Whitney U-test: SS (Full Scale) directly associated with Functioning z=-2.85, p=.004 Multiple regression: SSS directly associated with QoL F=16.07, p=.000 Multiple regression adjusting for symptoms: Increased SSS related to higher improvement in QoL at follow-up F=13.89, p=.000
McCormick 1999. U.S.A.	Size: 77 (convenience sample). Description: SMPI in community programs, living independently or in supported housing. Mean age: 42 (range NR). 61% Male.	Cross-sectional. Scales were administered in groups: author and assistants aided 1-2 participants at a time to read the surveys.	Bivariate correlational analysis: OSS directly associated with SSS r=-.30, p<.01 and SSS directly associated with QoL r=-.26, p<.05 and OSS not associated with QoL. and Age directly associated with QoL r=.26, p=<.05
Caron, Tempier, Mercier, Leouffre. 1998. Canada.	Size: 60. Description: Outpatients with SMPI. Schizophrenia (74%) Mean age: 47 (range NR). 50% Male. Control groups: Welfare recipients (79). General population (266).	Cross-sectional. Data obtained in one-to-one interviews with clients by social science graduates.	Correlational analyses: SSS directly associated with QoL r=.45, p=<.01 Multiple regression: SS (Full Scale; Reassurance of Worth) most predictive of QoL r^2=.28, p NR. Discriminant analysis: SS (Full Scale) and QoL combination correctly classified psychiatric group (75%).

NR = Not Reported.

Table 4

Summary of Studies: Variables

Author	Predictor Variables (SSS)	Outcome Variables (Functioning)	Outcome Variables (QoL)	Intervening Variables (OSS)
Graham-Bevan. 2006. Canada.	Social Provisions Scale (SPS): "Perceived Social Support". *8 items only. Lehman Quality of Life Interview (QoLI): "Satisfaction with Family Relations, Social Relations".	Multnomah Community Ability Scale (MCAS): "Community Adaptation".	Satisfaction with Life Scale (SWLS): "Life Satisfaction"	Social Network Scale (SNS): "Network Size"
Brunt, Hansson. 2002. Sweden.	Interview Schedule for Social Interaction (ISSI): "Satisfaction with" social interactions, attachment.	Global Assessment of Functioning (GAF): "Psychosocial Functioning." Camberwell Assessment of Needs (CAN): "Care Needs."	Lancashire Quality of Life Profile (LQoLP): "Subjective QoL" "Average Wellbeing."	ISSI: "Availability of" social interactions, attachment.
Bengtsson-Tops, Hansson. 2001. Sweden.	ISSI: "Satisfaction with" social interactions, attachment.	GAF: "Psychosocial Functioning."	LQoLP: "Objective QoL", "Subjective QoL"	ISSI: "Availability of" social interactions, attachment.
McCormick. 1999. U.S.A.	Social Support Questionnaire Short Form – Revised (SSQSR): "Average Satisfaction with Social Support."	Not assessed.	SWLS: "Overall Life Satisfaction."	Social Support Questionnaire Short Form – Revised (SSQSR): "Average Network Size."

Caron, Tempier, Mercier, Leouffre. 1998. Canada.	SPS: “Satisfaction with” attachment, social integration, reassurance of worth, reliable alliance, guidance, opportunity.	Not assessed.	Satisfaction with Life Domains Scale (SLDS): “QoL” *<u>20 QoL domains clustered into 5 factors</u>.	SPS: “Provision of” attachment, social integration, reassurance of worth, reliable alliance, guidance, opportunity.

Existing Knowledge of Social Support as a Contribution to QoL

As described earlier, research on the relationship between social support, as a global construct, and QoL have often provided contradictory results (Baker et al., 1992; Cohen et al., 2001; Corrigan & Buican, 1995; Corrigan & Phelan, 2004; Goldberg et al., 2003; Lam & Rosenheck, 2000; Lincoln, 2000; Macdonald et al., 1998; Nelson et al., 1992; Pickens, 2003; Yanos et al., 2001). Several of the studies that were selected for the systematic literature review report on the relationship between full scale social support (i.e., OSS and SSS combined) and QoL (Bengtsson-Tops & Hansson, 2001; Brunt & Hansson, 2002; Caron et al., 1998). With respect to the relationship between the dimensions of OSS and SSS, evidence to date indicates that these facets are only minimally related (Barrera, 1986; Heller et al., 1986; Lakey & Cassady, 1990). Accordingly, just one of the reviewed studies reported a significant relationship between the two dimensions (McCormick, 1999). When considering OSS alone, positive correlations have been reported with QoL (Baker et al., 1992; Cohen et al., 2001; Corrigan & Buican, 1995; Lam & Rosenheck, 2000), yet there are also reports that OSS is not associated with several factors that are closely linked to QoL (Macdonald et al., 1998; Nelson et al., 1992; Pickens, 2003). Two of the reviewed studies examined the relationship between OSS and QoL, and reported no significant relationships (Graham-

Bevan, 2006; McCormick, 1999). However, in keeping with the evidence already discussed that seems to demonstrate the importance of the experience of social support on life quality (Cohen et al., 2001; Macdonald et al., 2000), four of the reviewed studies reported significant relationships between SSS and QoL (Bengtsson-Tops & Hansson, 2001; Caron et al., 1998; Graham-Bevan, 2006; McCormick, 1999).

Social support and QoL. Three studies reported several significant, though conflicting, relationships between social support as a whole, i.e., OSS and SSS combined, and QoL or functioning. Brunt and Hansson (2002) found that full-scale social support was directly associated with subjective QoL (statistics not reported, p=.001). This relationship was supported in regression analysis: Higher QoL was associated with better social support, accounting for 17.6% of the variance in social support. Using a similar cross-sectional design to these researchers, Caron and colleagues (1998) examined factors within full-scale social support, and found the factor most predictive of QoL was that of “reassurance of worth” (r^2=.28, p NR). Bengtsson-Tops and Hansson (2001) strengthened the reported results on QoL by considering functioning as a corresponding facet of wellbeing. Using an 18-month longitudinal design, the authors found that participants’ social support positively correlated with their level of functioning (z=-2.85, p=.004). Using a cross-sectional design, Brunt and Hansson (2002) reported contradictory results. These authors found that full-scale social support at baseline was inversely associated with symptoms and needs at baseline (statistics not reported, p=.037). Hence, as social support increases, symptoms decrease and functioning improves.

OSS and QoL. Separating the social support variables, two studies reported that investigations resulted in no significant relationships between OSS and QoL. Using regression analysis (adjusting for gender and symptoms), Graham-Bevan (2006), found that OSS alone, (i.e., size of support network) did not predict QoL (Fchange(1,137)=0.78, p=0.38) or functioning (Fchange(1,136)=0.00, p<.98). McCormick (1999) also reported that the size of participants' network was not correlated with their life satisfaction (statistics not reported).

OSS and SSS. Just one study reported a significant relationship between OSS and SSS. Using bivariate correlational analysis, McCormick (1999) reported that OSS was directly associated with SSS (r=-.30, p<.01). Brunt and Hansson (2002) reported an inverse, though not significant, association between the two dimensions of social support. Participants in this study resided in three different housing arrangements, and the authors found that a low OSS was accompanied by higher SSS in all three groups.

SSS and QoL. Studies using both cross-sectional and longitudinal designs reported significant relationships between SSS and QoL. McCormick (1999) reported a direct association between SSS and QoL (r=-.26, p<.05). Caron et al. (1998) also found that SSS was directly associated with QoL. These authors applied a factor analysis to the measure of QoL used in their study, and identified subscales of QoL including Daily Life/Social Relationships, Autonomy, Spare-time Activities, Housing/Neighbourhood, and Personal/Intimate Relationships. After examining the relationships between SSS and each of these subscales, they reported direct associations among participants with SPMI between SSS and the QoL factors of Autonomy (r=.43, p<.01), Housing/Neighbourhood (r=.41, p<.01), and Personal/Intimate Relationships (r=.56, p<.01). Further analysis using multiple regression indicated that the SSS factor most predictive of the total QoL score among participants with SPMI was Reassurance of Worth (r^2=.28, p<.05). Graham-Bevan (2006) used hierarchical regression (adjusting for gender and symptoms) and reported that SSS significantly predicted QoL (*F*change(1,122)=23.82, p=.00), but did not predict functioning (i.e., community adaptation) (*F*change(1,122)=0.21, p=.65). There is some evidence suggesting that this relationship may change over time. Bengtsson-Tops and Hansson (2001) first used multiple regression (adjusting for symptoms), and found that SSS was directly associated with QoL at baseline (F=16.07, p=.000). After the 18-month follow-up period, multiple regression using residual change scores (and adjusting for symptom change and baseline scores), indicated that increased SSS related to higher improvement in QoL (F=13.89, p=.000).

Limitations of Previous Studies and Gaps in Research

Although researchers over the past decade have made progress in describing the role of social support in the life quality of persons with SPMI, there is still a limited understanding of this relationship. The systematic literature review established that there are few studies in this area, and those have tended to have weakly supported or contradictory findings. Previous research has often been characterized by unclear conceptualizations of the variables in addition to several methodological weaknesses. Generally, studies have lacked precision in determining SPMI among samples. Some form of convenience sampling has frequently been used and studies have involved relatively small numbers of participants. (None of the reviewed studies recruited participants from more than three programs, and two of the studies recruited from a single program.) Measurement of social support has often relied on a unidimensional instrument. The majority of studies have been cross-sectional; measurement of variables occurred at a single point in time. Data analysis often did not adjust for potentially confounding variables such as diagnosis, symptoms, and gender. These limitations emphasize the continuing ambiguity regarding the predictive value of social support in the QoL of people living with SPMI.

To better understand the links between characteristics of social support and QoL, further research is required using longitudinal designs for increased confidence when proposing causal direction. It is essential to study these constructs in large samples to effectively analyze data using multivariate analyses. Increasing objectivity in recruitment methods likewise would increase generalizability of results. It is also important to measure and adjust for the impact of other variables such as age, gender and diagnosis. In this way, research may provide key insights concerning the impact of network size, the relative importance of subjective evaluations of social support, and the life quality and adaptive functioning of individuals with SPMI. Ultimately, these insights may inform program development for individuals with SPMI.

Goals for the Current Study

The literature review established that research in the area of interest remains at an early stage of development, and that the knowledge base would be best advanced by studies addressing several limitations. The current study used data from a prospective cohort study that addressed many of these limitations. Phase II of the COMHS Study of Alberta provided data from a large sample of individuals with SPMI who were recruited from 70 clinical sites over a broad geographical area. Trained study staff confirmed diagnosis at baseline using a standard neuropsychiatric interview. The longitudinal design allowed for measurement of the independent variable of interest to the current study (social support, measured at an average of three months from baseline) prior to the measurement of outcome (QoL, both disease-specific and generic, which was measured at an average of 17 months from baseline).

As described earlier, the current study had two main objectives supported by the literature. The first goal was to examine if the combination of objective and subjective features of interpersonal relationships is related to the life satisfaction and community functioning of individuals with a history of SPMI. A second key objective was to clarify if subjective dimensions of social support moderate the relationship between objective dimensions of social support, life quality and functioning among persons living with SPMI. The COMHS research program provided comprehensive data on QoL, community functioning, and objective and subjective characteristics of social support. Through quantitative analyses of secondary data, the associations under study were investigated using multiple measures of the number and type of social relationships as well as the satisfaction with those relationships, and whether these variables predicted life quality and functioning.

A review of the literature on the impact of age, gender and diagnosis on the relationships under study determined that it was necessary to adjust for these variables in the analyses. There is research suggesting that age may contribute to social integration among individuals with severe mental illness (DeSisto, Harding, McCormick, Ashikaga & Brooks, 1995). For young adults with psychotic disorders, relationships may be more challenging than they are for older adults with schizophrenia (Randolph, Lindenberg, & Menn, 1986). There is also evidence for an association between age and life satisfaction.

Among 165 individuals with SPMI (age range 21 to 64 years, *M* = 40.4), Mercier, Péladeau and Tempier (1998) reported that age was systematically related to QoL in that older adults were more satisfied with their lives than younger adults. Caron, Mercier, Diaz, and Martin (2005) found that individuals between 40 and 49 years of age with schizophrenia reported higher levels of QoL than those under 30. Due to the research among adults with severe mental illness that demonstrates significant associations between age and social support, and age and life satisfaction, the current study adjusted for age when analyzing the relationships under study. It is possible that younger adults feel dissatisfied with their lives because of the more recent onset of symptoms and difficulties with social integration whereas older adults have found a place for themselves in society and adapted their expectations to fit the perceived limitations of their illness (Mercier et al., 1998).

Regardless of age, research among adults with SPMI suggests that women tend to have larger social support networks than men (Baker & Intagliata, 1992; Sanders, 1999). However, women may be more likely to experience interpersonal conflict *because* they have larger networks and thus more opportunities for both positive and negative social interactions (Hall & Nelson, 1996; Pickens, 2003). Indeed, studies have found that social support may be of greater benefit to the mental health of men than women (Brugha, Weich, Singleton, Lewis, Bebbington, Jenkins et al., 2005), and social connections may actually increase levels of mental illness symptoms among women with low resources, especially if these connections entail obligations to provide social support to others (Kawachi & Berkman, 2001). Research among individuals without mental illness suggests that there may also be an association between gender and QoL, in that women tend to report lower satisfaction with life than men (Gallicchio, Hoffman, & Helzlsouer, 2007; Gamma & Angst, 2001). Based on the research demonstrating associations between gender and social support, and gender and QoL, the current study adjusted for gender in the multivariate analyses. Gallicchio and colleagues (2007) found that the level of social support among nearly 11,500 adults without mental illness did not explain the gender difference in health-related QoL.

Although several studies present results on the impact of social support on psychoses (Goldberg et al., 2003; Macdonald et al., 2000; Rogers et al., 2004), bipolar disorder (Cohen et al., 2004) and depression (Barnett & Gottlieb, 1988; Choenarom, Williams, & Hagerty, 2005; Kaiser, Snyder, Corcoran, & Drake, 2006; Skarsater, Langius, Agren, Haggstrom, & Dencker, 2005), few studies have compared characteristics of social support *across* diagnoses. One exception looked at 342 outpatients with SPMI, aged 40 and over, and reported that people with schizophrenia were at greater risk for poorly developed networks than those with affective disorders (Meeks & Hammond, 2001). Caron and colleagues (2005) examined the relationship between subclass diagnoses of schizophrenia and QoL, and found that individuals with a diagnosis of paranoid schizophrenia tended to report lower QoL than other subtypes. The reports of associations between clinical characteristics of SPMI and QoL, as well as demographic features of individuals and their QoL, suggested the need to adjust for the impact of these variables in the current study, in order to more rigourously clarify the relationships between social support and QoL or functioning.

Research Questions

In order to meet the goals as described, a set of questions was developed to guide the current study.

Research question 1. After adjusting for age, gender, and baseline clinical condition, does social support (as a whole) influence the QoL or community functioning of individuals with SPMI?

Research question 2. After adjusting for age, gender and baseline clinical condition, do subjective dimensions of social support moderate the relationship between objective dimensions of social support, and life quality or functioning in SPMI?

Chapter 3: Methods

This chapter details the design of this study, including participant eligibility and recruitment as well as data collection methods used in the source study (COMHS Study of Alberta). Descriptions and psychometric evidence are presented for each of the instruments used in the COMHS Study and selected for the current study. These data elements provide context for the detailed plan for data analysis that follows. The empirically-derived hypotheses and ethical considerations conclude this chapter.

Study Design

Data for this study were obtained from Phase II of the COMHS Study of Alberta. COMHS was a three-phase multi-year research program, which operated between October 1999 and August 2003 in three health regions in Alberta (i.e., Capital Health Region, Calgary Health Region, and David Thompson Health Region). Phase II of the COMHS Study began in March 2001, and was an observational study employing a longitudinal, prospective cohort design. The purpose of this phase was to describe continuity of care (COC) in three parallel cohorts of patients with SPMI and the relationship of COC with clinical and economic outcomes. The advantage of using data from the COMHS research program for the current study was that a broad range of health-related outcomes was collected from a large sample longitudinally. The relatively large sample size of over 400 participants allowed for good power in the regression analyses.

Participants were telephoned or visited by study staff every two to three months during the study period (i.e., approximately 17 months). Each time, they were asked to report their use of all mental health services including both directly and indirectly funded community-based care, inpatient hospital services, emergency services, and telephone calls to distress lines. Diagnoses were confirmed at baseline and several potential confounding variables were measured including social support, severity of psychopathology, and level of functioning. These data form the basis of the current study.

Sample

Eligibility

Adults (18 to 64 years of age) who had a diagnosis of SPMI were the target population for this study. Eligibility required that patients have a diagnosis of schizophrenia, psychosis, bipolar disorder, or major depression, according to diagnostic criteria set out in the Diagnostic and Statistical Manual for Mental Disorders--Fourth Edition (DSM-IV; American Psychiatric Association, 1994). Eligibility criteria included individuals with or without significant Axis II co-morbidity and/or significant substance abuse complications, who were not under guardianship or receiving involuntary or forensic care at the time of enrolment. The entire cohort, consisting of over 400 participants, comprises the dataset made available for the current study.

Recruitment

Recruitment for the original study included individuals presenting for care between March and July, 2001 to 70 directly funded inpatient, outpatient, emergency department and community mental health service sites in three health regions. A standard recruitment protocol was followed for each site. Clinical service providers at each site identified potential participants among those presenting for care. A few participants self-referred by responding to information posted on the Internet and printed in newsletters. Patients who met inclusion criteria were introduced to the study by attending health professionals and names of interested individuals were forwarded to study staff. Study staff administered informed consent and baseline study measures. Information on eight additional variables was collected at the same time, including age, gender, education, housing status, current employment status, primary diagnosis, age first diagnosed, and number of hospital admissions for SPMI. The Mini International Neuropsychiatric Interview (MINI; Sheehan, Lecrubier, Sheehan et al., 1998; Appendix B) confirmed that participants met the diagnostic eligibility criteria. Study staff conducted the interview with each participant, which involved asking a cluster of closed questions (i.e., requiring a yes/no response) related to symptoms and behaviours in each major diagnostic category. The diagnosis was made based on responses to key questions in each category and reflected current, past, or recurrent illness episodes. There were 486 patients/clients recruited for Phase II of the COMHS Study in the three health regions. There was at least one source of end-point information obtained on 439/486 (90.3%) of participants, and end-point interviews on generic QoL on 401/486 (82.5%).

Data Collection

Data Elements

In the original study, the following instruments were used to collect participant information; these data were analyzed for the current study. Copies of all instruments are included in the appendices. Tables 5 through 8 summarize the operational definitions of each of the variables for the current study.

Baseline clinical condition. Along with demographic information, two measures were used in the current study to determine baseline clinical condition: The Brief Psychiatric Rating Scale (BPRS; Appendix C) and the Colorado Client Assessment Record (CCAR; Appendix D).

The BPRS is a measure of psychopathology developed in 1962 by Overall and Gorham (1988) and widely used in psychiatric research. It consists of 24 items that address a range of clinically relevant symptoms and behaviours such as anxiety, emotional withdrawal, conceptual disorganization, bizarre mannerisms, grandiosity, depressive mood, suspiciousness, hallucinatory behaviours, motor retardation, unusual thought content, blunted affect, and disorientation. Scores are based on information obtained in a semi-structured clinical interview, including participant self-report, interviewer observation, and clinical judgement. The time frame used for symptom assessment is typically the week before the evaluation. Items are scored on a seven-point scale according to the severity of presenting psychopathology; each item has a common set of descriptors from “not present” to “extremely severe”. A total psychopathology score is obtained by summing the ratings of all items. The BPRS is useful with different clinical syndromes because it provides a profile of current psychopathology rather than focusing exclusively on the symptoms of a particular disorder (Rhoades & Overall, 1988). In a review of 13 published studies, Hedlund and Vieweg (1980) found that reported inter-rater reliability for the total psychopathology score was generally .80 or greater. A study involving 154 concurrent ratings by trained clinicians demonstrated inter-rater reliability of .87 for the total psychopathology score (Bell, Milstein, Beam-Goulet, Lysaker, & Cicchetti, 1992). Evidence of the concurrent and construct validity of the BPRS is provided in a review of over 150 published drug treatment studies that systematically used the BPRS along with other measures to evaluate the treatment effects of 70 different drug compounds. With rare exception, BPRS change scores consistently reflected treatment changes that were corroborated by other clinical ratings (Hedlund &

Vieweg, 1980). More recently, Hafkenscheid (2000) demonstrated treatment efficacy based on BPRS ratings of intra-individual symptom change among 107 psychiatric patients, and provided updated evidence for acceptable inter-reliability when the instrument is administered by trained clinicians. A review of analyses of the BPRS factor structure and classification models across a diversity of patients, settings and types of analyses indicated general consistency in the data and confidence in the internal validity of the instrument (Hedlund & Vieweg, 1980). As a result of the widespread use of the BPRS, a substantial body of data has been accumulated, and perhaps “the strongest evidence of its adequacy derives from discriminant validity documented in literally hundreds of controlled clinical trials” (Rhoades & Overall, 1988, p.104). In the COMHS Study, scores were assigned to participants by staff who were trained to administer the BPRS; total scores of level of psychopathology were used for the current study.

The second measure of baseline clinical functioning in the current study, the CCAR, was developed in the 1970s and has undergone extensive utilization and improvement, supported by the Colorado Division of Mental Health (Ellis, Wilson, & Foster, 1984). The original instrument had broad empirical background, though much of it remains unpublished (Ellis et al., 1984). The CCAR is a multidimensional, comprehensive tool that assesses level of functioning, problem severity, and service needs. The assessment takes 45 to 60 minutes and does not require an interview with the participant, though the care provider must know the individual well. Thirty items are rated on a nine-point anchored scale; a rating of one designates that a client has “no problem” with the item dimension whereas a rating of nine designates that (s)he has an “extreme problem” in that area. Items cover a broad range of personal and social functioning such as emotional withdrawal, thought processes, resistiveness, role performance, medical illness, economic resources, and personal strengths. This instrument has been used in a range of clinical and research applications (Ellis, Wackwitz, & Foster, 1991), and has proven to be a reliable and valid measure of level of functioning and problem severity (Ellis et al., 1984). For example, separate factor analyses were performed on 10 different large, representative samples of mental health clients to demonstrate a stable factor structure that is generalizable to diverse client populations (Ellis et al., 1991). Discriminant function analysis led to a formula that correctly predicted client type for 98% of a cluster analysis of over 10,000 mental health clients (Ellis et al., 1991). With respect to the data used in the current study, the CCAR was mailed to the primary mental health care provider of each participant in the COMHS Study within three months of study enrollment. Those not returned (approximately 10%) were rated by the principal investigator of the COMHS study, using hospital and clinic charts. One component of baseline clinical functioning in the current study included clinicians' estimations of participants' need for services such as medication management, vocational, housing support, substance abuse programming, etc. Other components included clinicians' assessment of participants' overall problem severity as well as the presence and severity of any co-morbid medical illnesses.

Objective social support. Three questions that were asked of participants following administration of the SPS were used as indicators of OSS in the current study. These items included counts of those persons whom the participant "feels at ease with or can talk to about personal problems," frequency of contacts with friends in the previous month, and frequency of contact with family in the previous month.

Clinician ratings of participants' OSS were also included in this variable. Three items from the CCAR asked clinicians to provide ratings according to their knowledge of participants' "interpersonal problems," "person resources" and "Family problems." Interpersonal problems captured clinician ratings of participants' social functioning, from mostly fruitful and mutually satisfying relationships to an inability to form relationships. Person resources required clinician ratings of the number and quality of participants' social resources. Family problems required ratings of participants according to clinicians' knowledge of their relationships with other family members, i.e., from positive relationships within normal limits to a total breakdown in family relationships.

Subjective (perceived) social support. One measure of SSS was used for the current study. The Social Provisions Scale (SPS; Cutrona & Russell, 1987; Appendix H) was developed to assess six functions as posited by Weiss (1974; in Cutrona & Russell, 1987). The 24-item instrument has subscales termed attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance. Participants respond to items according to the degree to which their social relationships are currently supplying each of the provisions. Responses are provided on a 4-point Likert-type scale where a rating of one indicates that the participant "strongly disagrees" with the item and a rating of four indicates the participant "strongly agrees". Each provision is assessed by four items, two that describe the presence of the provision and two that describe its absence. The reliable alliance subscale, for example, asks participants to provide their level of agreement with the statement, "There are people who I can count on in an emergency." as well as its opposite, which states, "If something went wrong, no one would help me." For scoring purposes, the negative items are reversed and summed together with the positive items to form a score for each social provision. A total social support score is also formed by summing the six individual provision scores. Internal consistency for the total scale score is relatively high, ranging from .85 to .92 across a variety of populations, with reliabilities for the subscales ranging from .76 to .84 (Cutrona, Russell, & Rose, 1986). Evaluation of the factor structure of the SPS involving responses of nearly 1,800 participants from several smaller studies confirmed a six-factor structure that corresponds to the six social provisions (Cutrona & Russell, 1987). Further evidence of the construct validity of the SPS was demonstrated in primiparous women, where lack of social provisions predicted depression in the postpartum period (Cutrona, 1984), and in the elderly population, where lower levels of social support predicted more severe depressive symptoms 12 months later (Russell & Cutrona, 1991). It has been used in intervention research, where changes in SPS scores were predictive of positive outcome among members of a therapy group (Mallinckrodt, 1996). Cutrona (1982) reported in a study of first-year college students that the provisions of social integration, reassurance of worth, and guidance were all significantly related to scores on the UCLA Loneliness Scale: Deficits in these three social provisions, combined, accounted for 66% of the variance in loneliness scores (in Russell, Cutrona, Rose, & Yurko, 1984). Regression analysis demonstrated the ability of several of the subscales, separately, to predict specific forms of loneliness, i.e., the provisions of attachment, opportunity for nurturance, and reassurance of worth predicted either emotional or social loneliness (Russell et al., 1984). The discriminant validity of the SPS has been demonstrated against measures of mood (e.g., depression), personality (e.g., introversion-extroversion, neuroticism), and social desirability (Cutrona & Russell, 1987; Baron, Cutrona, Hicklin, Russell, & Lubaroff, 1990).

In the COMHS Study, an 8-item version of the SPS was administered by study staff to participants three months following their enrollment. (Social support was not a principal data element examined in the original study, so COMHS investigators opted for a shorter version of the instrument in an attempt to reduce participant burden.) The total SPS score using the first eight items of the shortened version were used as the SSS data element in the current study. These items comprise provisions of attachment, guidance and reliable alliance, though analyses on subscales were not performed for the current study. Indications of the psychometric integrity of the shortened version are provided by the significant associations between separate subscales and measures of loneliness (Russell et al., 1984) as well as by the original robust factor loadings (Cutrona & Russell, 1987), both of which evidence construct validity among the subscales.

To facilitate collecting information specific to the COMHS Study, several questions regarding social support were asked following the administration of the 8-item SPS. For clarity, these four items were considered part of the SPS for the current study. The ninth item of the shortened SPS version used for the COMHS Study asked participants to respond “yes” or “no” to the question, “Are there any people with whom you feel at ease and can talk to about personal issues/problems?” This item was included as an indicator of SSS for the current study.

QoL. Data from two measures were used to determine QoL among participants for the current study: The Wisconsin Quality of Life Index (W-QLI; Appendix F), which is designed to measure disease-specific QoL, and the EuroQol (EQ-5D; Appendix G), which is a measure of generic QoL.

The W-QLI client questionnaire is a 113-item instrument developed by Becker and colleagues (Diamond, Douglas & Thornton, 1997) for measuring QoL in persons with severe psychiatric illnesses. Nine dimensions of QoL from the patient's perspective are scored individually: life satisfaction, occupational activities, psychological wellbeing, physical health, social relations, economics, activities of daily living, symptoms, and the patient's own goals (Becker et al., 1997). The W-QLI has been shown to have construct validity (Diamond & Becker, 1999; Diaz, Mercier, Hachey, Caron & Boyer, 1999), test-retest reliability (Diaz et al., 1999), convergent and discriminant validity (Diamond & Becker, 1999; Diaz et al., 1999), and internal consistency (Diaz et al., 1999). Caron, Corbiere, Mercier, Diaz, Ricard, and Lesage (2003) verified the empirical bases of eight of the nine theoretical dimensions by factor analyses using two independent samples, most of whom had a serious mental illness yet differed with respect to many variables such as age, gender, and diagnosis. The authors concluded that their research supported both the multidimensionality of the instrument and its measurement of the general concept of QoL (Caron et al., 2003). Caron, Mercier, Diaz, and Martin (2005) assessed the clinical characteristics of the W-QLI, and concluded that its dimensions have differential predictive power and sensitivity to sociodemographic and clinical characteristics of severely mentally ill individuals. In the COMHS Study, the W-QLI was administered by study staff as part of the end-point interview at final follow-up. The total score was used in the current study as a measure of outcome, i.e., disease-specific QoL among participants at end-point.

The EQ-5D is a generic health-related QoL instrument that was also administered to COMHS Study participants during the end-point interview. It provided a measure of health-related QoL at outcome for the current study. The EQ-5D was developed by a multidisciplinary group of researchers from seven universities and research centers across five European countries. The EQ-5D is a standardized instrument that is applicable to a wide range of health conditions and treatments, including mental illnesses (Bolscher & Schulenburg, 1997; Yfantopoulos & Papagianopoulou, 2004). It was designed for self-completion by respondents and it is cognitively simple, taking only a few minutes to complete. However, when self-completion is not appropriate (e.g., due to reduced cognitive function), it is well suited for interviewer-supported administration (Coast, Peters, Richards, & Gunnell, 1998). The descriptive system of the EQ-5D covers five dimensions of health, i.e., mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each dimension comprises three levels, i.e., no problems, some/moderate problems, and extreme problems. Validation studies of the EQ-5D have demonstrated adequate psychometric properties, including significant associations with other generic QoL measures such as the Short Form-36 (SF-36) Health Survey (.50 to .83; McDowell & Newell, 2006), the Medical Outcomes Study (MOS) survey (.50 to .65; Wu, Jacobson, Frick, Clark, Revicki, Freedberg et al., 2002), and the Health Utilities Index (HUI-3; .69; McDowell & Newell, 2006). Other studies have similarly demonstrated convergent validity for the EQ-5D (Brazier, Jones, & Kind, 1993; Hurst, Kind, Ruta, Hunter, & Stubbings, 1997). The EQ-5D has also shown acceptable construct validity (Brazier et al., 1993; Wu et al., 2002), internal consistency (Yfantopoulos & Papagianopoulou, 2004), and test-retest reliability (Hurst et al., 1997; McDowell &

Newell, 2006). Analysis of EQ-5D ratings among patients with schizophrenia in 10 European countries led Prieto and colleagues (Novick, Sacristán, Edgell, & Alonso, 2003) to conclude that the instrument was an appropriate and valid measure of health-related QoL across European countries.

The EQ-5D includes a visual analogue scale (VAS), which measures participants' self-rated current perceived health status, and which was also included as a proxy for QoL in the current study. The VAS consists of a 20 cm. line that is marked from 0 to 100 (similar to a thermometer), where 0 represents "worst imaginable health state" and 100 represents "best imaginable health state". Participants were asked by COMHS Study staff to draw a line from a box labeled "your own health today" to the point on the scale that represented how good or bad their health was that day. The result was a continuous variable ranging from 0 to 100. The results of eligibility and validity testing are considered adequate (Glick, Polsky, Willke, & Schulman, 1999; McDowell & Newel, 2006). For example, the VAS correlated highly with the Health Assessment Questionnaire (.61; McDowell & Newell, 2006), the HUI-3 (.56; McDowell & Newell, 2006), and the health perceptions subscale of the MOS (.66; Wu et al., 2002).

Level of functioning. In addition to the outcome variable of QoL, the current study investigated relationships between predictor and intervening variables and participant level of functioning at outcome. The Multnomah Community Ability Scale (MCAS; Appendix E) was completed by study staff at the 12-month follow-up point of the COMHS Study and, again, at end-point. All study staff underwent comprehensive standardized training to ensure consistency. The MCAS is a 17-item instrument that is designed to measure the level of functioning of individuals with SPMI who live in the community (Barker, Barron, McFarland, & Bigelow, 1993). Items address problems and abilities in four areas: interference with functioning (e.g., thought processes), adjustment to living (e.g., ability to manage money), social competence (e.g., involvement in meaningful activity), and behavioural problems (e.g., medication compliance). For the current study, only the total MCAS score was used as a measure of overall community functioning at outcome. The MCAS was designed to be completed by clinicians who have knowledge of the client's functioning. As per protocol in the COMHS Study, it can be used reliably by raters after undergoing a standard, half-day training exercise (Barker et al., 1993). The scale may be completed every three to six months as a means of monitoring changes in clients' degree of ability. The psychometric properties of the scale are good. Test-retest and inter-rater reliability were assessed with clients of two community mental health agencies (Barker, Barron, McFarland, & Bigelow, 1994). For the total MCAS score, the reported inter-rater reliability coefficient is .85 and the test-retest reliability coefficient is .83 (Barker et al., 1994). Internal consistency is .90 (Barker et al., 1994). A strong association was demonstrated between MCAS total score and the criterion variable of clinicians' global ratings of consumer functioning (.78) (Barker et al., 1994). In a large scale study of community mental health programs across the state of Oregon, the MCAS demonstrated sound predictive validity: Lower MCAS scores were significant predictors of subsequent psychiatric hospitalization (Zani, McFarland, Wachal, Barker, & Barron, 1999). Two studies demonstrated that the MCAS is sensitive to change (in Malia, McFarland, Barker, & Barron, 2002). Normative data on the instrument as applied to mental health consumers is available (Barker et al., 1993).

Table 5

Data Elements: Individual Characteristics

Construct	Indicator	Variable Type	Source
Age	Age	Continuous	Demographics
Gender	Gender	Categorical	Demographics
Psychiatric Diagnosis	Psychiatric Diagnosis	Categorical	MINI - Primary diagnosis (major depression, bipolar, psychosis)
Baseline Clinical Condition	Duration of Illness	Continuous	Demographics - Years, months since first diagnosed
	Level of Service Need	Continuous	CCAR - Composite of estimate of all service needs (26 items)
	Severity of Problem	Continuous	CCAR - Overall problem severity (1 item)
	Severity of Psychopathology	Continuous	BPRS - Total score at baseline
	Medical Comorbidity	Continuous	CCAR - Degree of medical illness (1 item)

Table 6

Data Elements: Predictor Variable

Construct	Indicator	Variable Type	Source
Objective Social Support	Counts of Contacts	Continuous	SPS - Number with whom “feel at ease with or can talk to about personal problems” (Item 10)
	Frequency of Contacts with Friends	Continuous	SPS - Number of friends contacts in previous month (Item 11)
	Frequency of Contacts with Family	Continuous	SPS - Number of family contacts in previous month (Item 12)
	Clinician Rating of Family Problems	Continuous	CCAR – Family problems (Item 16)
	Clinician Rating of Social Functioning	Continuous	CCAR – Interpersonal problems (Item 17)
	Clinician Rating of Social Resources	Continuous	CCAR - Number and quality of social resources (Item 24)

Table 7

Data Elements: Intervening Variable

Construct	Indicator	Variable Type	Source
Perceived Social Support	Self-rating of Social Support Provisions	Continuous	SPS - Composite of first 8 items
	Self-rating of Social Support Availability	Categorical	SPS - Item 9

Table 8

Data Elements: Outcome Variables

Construct	Indicator	Variable Type	Source
Quality of Life	Disease-specific QoL	Continuous	W-QLI - Total score
	Generic QoL	Continuous	EQ-5D - 5-item weighted score
	Self-rated Current Perceived Health Status	Continuous	EQ-5D - VAS scale score
Level of Functioning	Community Ability	Continuous	MCAS - Total score

Data Analysis

Figure 9 illustrates the analytical model guiding the current study, which provides the basis for the data analysis plan.

Univariate Analysis

Descriptive statistics were used to summarize the individual characteristics of the sample (i.e., age, gender, diagnosis, and baseline clinical condition), as well as the distributions of the independent variable (i.e., objective social support), the dependent variables (quality of life, level of functioning), and the intervening variable (subjective social support) to confirm that each distribution approaches normality.

Bivariate Analysis

Variable preparation. Preliminary factor analysis was performed on the measures of baseline clinical condition, to see if the five indicators of this variable could be reduced. Preliminary factor analysis was also performed to potentially reduce the six indicators of the variable objective social support. Combining the indicators of each of these variables in this manner prepared each of the variables for bivariate analysis.

Correlation matrix. A correlation matrix of all study variables was computed and examined for significant relationships between each pair of variables.

Multivariate Analysis

Multiple linear regression was used to model the association between social support and outcomes of QoL and functioning. Separate models were derived for each outcome variable. Variables were selected for inclusion in regression models based on the results of bivariate analyses. Variables were retained in subsequent models based on alpha levels of .05.

Research question 1. This regression attempted to predict QoL (three indicators available) or functioning (one indicator available) as a linear function of respondent age, gender, baseline clinical condition (i.e., level of pathology; five indicators available), diagnosis, objective social support (six indicators available), and subjective social support (two indicators available).

$$\text{QoL/Functioning} = \beta_0 + \beta_1(\text{Age}) + \beta_2(\text{Gender}) + \beta_3(\text{Baseline Clinical Condition}) + \beta_4(\text{Diagnosis}) + \beta_5(\text{OSS}) + \beta_6(\text{SSS}) + e$$

Research question 2. This regression attempted the same prediction as above, with the addition of a new term. The latter is the <u>product</u> of the objective and subjective social support variables, and provided a test of the hypothesized moderator effect after adjusting for main effects of each social support variable.

$$\text{QoL/Functioning} = \beta_0 + \beta_1(\text{Age}) + \beta_2(\text{Gender}) + \beta_3(\text{Baseline Clinical Condition}) + \beta_4(\text{Diagnosis}) + \beta_5(\text{OSS}) + \beta_6(\text{SSS}) + \beta_7(\text{OSS} * \text{SSS}) + e$$

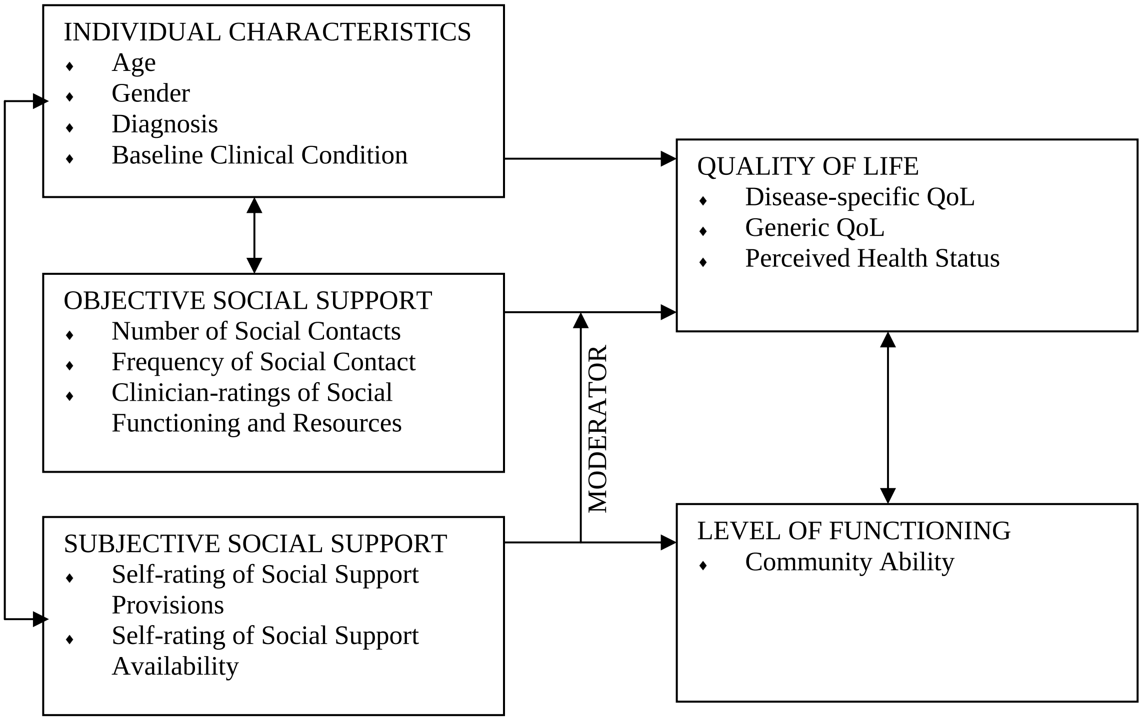

Figure 5. Analytical Model of Data Analysis Plan.

Hypotheses

Using the systematic literature review as a basis, empirically derived hypotheses were developed for each research question.

Hypothesis 1. After adjusting for age, gender, level of psychopathology, and diagnosis, it is predicted that objective dimensions of social support (i.e., a larger, better functioning social support network and greater contact with that network) and subjective dimensions of social support (i.e., greater perceived availability and provision of social support) will be related to higher levels of QoL and functioning of individuals with SPMI. The rationale for this hypothesis follows from previously described studies that have shown a correlation between social support, as a whole, and life satisfaction and/or functioning (Brunt & Hansson, 2002; Caron et al., 1998; Bengtsson-Tops & Hansson, 2001).

Hypothesis 2. After adjusting for age, gender, level of psychopathology, and diagnosis, and after adjusting for the main effects of OSS and SSS, it is predicted that the interaction of the two social support variables will be significant, i.e., that SSS will influence the relationship between OSS and the outcomes of QoL and functioning. The rationale for this hypothesis is based on previously discussed studies that have shown a relationship between SSS and life satisfaction and/or functioning (McCormick, 1999; Caron et al., 1998; Graham-Bevan, 2006; Bengtsson-Tops & Hansson, 2001) but not OSS and these outcome variables (McCormick, 1999; Graham-Bevan, 2006).

Ethical Considerations

The current study analyzed secondary data collected during Phase II of the COMHS Study of Alberta. When receiving data from a secondary source, it is important to ensure that study participants cannot be identified (LoBiondo-Wood & Haber, 1998). For these analyses, the principal investigator on the COMHS Study extracted the relevant data and saved it into a separate file before access was provided. The portion of the database that was provided included no identifying information. Following analysis of the data, the data was returned to the principal investigator of COMHS for preservation and protection, as per guidelines set out by the University of Calgary (i.e., destruction of file after five years). See Appendix I for the letter of ethics approval for the current study from the University of Lethbridge Faculty of Education Ethics Committee.

In terms of informed consent, the participants in Phase II of the COMHS research program consented to allow the information that was gathered for that study to be examined again in the future to help answer other research questions. (See Appendix J for a copy of the consent form used in Phase II of COMHS.)

All participants who have end-point data on the relevant measures were included in analyses for the current study. As described earlier, there were 486 participants recruited in the three health regions for Phase II of the COMHS Study, and at least one source of end-point information was obtained on 439 participants.

Chapter 4: Results

This chapter presents the findings of the data analysis, including a description of the participants in the current study, results of factor analyses (data reduction) for variables that included multiple indicators, a correlation matrix of all variables, and regression analyses of the relationships under investigation. Verification of distribution normality of each variable is included within the relevant sections.

Sample Description

There were 486 patients recruited for Phase II of the COMHS Study, and at least one source of end-point information was obtained on 439 participants. The dataset made available for the current study included 390 participants who provided end-point data on the QoL measures. Cases in this dataset were then excluded listwise if there were missing values on any of the other measures used in the current study. For all analyses, the study sample included 301 individuals who participated in the COMHS Study and had data on all of the measures used in the current study. Tables 9 and 10 summarize the individual characteristics of participants in the current study.

Age and Gender

Participants ranged in age from 18.5 to 64.6 years (*M* = 42.9, *SD* = 10.3). The majority of participants were female (59.8%; 180 individuals).

Diagnosis

The Mini International Neuropsychiatric Interview (MINI) confirmed that participants met the diagnostic eligibility criteria of SPMI. Participants frequently presented with symptoms and/or personal histories that described more than one diagnostic category. On entering the COMHS Study, the primary presenting symptoms of the participants selected for the current study reflected the following diagnoses: Seventy-five participants (24.9% of the sample) received a diagnosis of major depression with or without psychotic features, 117 (38.9%) bipolar disorder with or without psychotic features, and 109 (36.2%) psychotic disorder including schizophrenia.

Baseline Clinical Condition

The indicators for baseline clinical condition included duration of illness, level of service need, problem severity, severity of psychopathology, and medical comorbidity. Participant scores on all five indicators were reasonably normally distributed.

Duration of illness. Duration of illness was computed using the age of the participant at the end of followup and the age at which serious symptoms first appeared and/or when the participant first started receiving help for mental health problems of any kind. This information was collected through family interviews during approximately the second and third month of data collection in Phase II of the COMHS Study and/or from participants' health records at the end of the follow-up period. In some cases, there were reports of very early life onset of mental health concerns, i.e., as young as birth. Hence, the duration of illness of the current sample ranged from 0 to 64.6 years (M = 22.8, SD = 17.5).

Level of service need. Participants were assigned a level of service need based on their primary clinicians' rating of 26 items on the CCAR. Items addressed needs for physical health care such as dental care; mental health care such as medication management, substance abuse programming and crisis services; and rehabilitation supports such as assistance with activities of daily living, and vocational or housing supports. Clinicians rated their clients' need for the various services on a scale that ranged according to the frequency of need, i.e., “none”, “occasional”, “1-3 times/month”, “once/week”, and “2 or more times/week or daily”. These items were totaled and averaged. The range of service need for the current sample was 1.1 to 6.9 (*M* = 2.8, *SD* = 0.9).

Overall problem severity. The CCAR includes one item on which participants’ primary clinicians rated their overall problem severity. This item can range from one (“no problem”) to nine (“extreme problem”). The lowest rating indicates that the client’s functioning is consistently average or better than what is typical for the client’s age, sex, and subculture. The highest rating of the scale indicates that the client’s situation is posing an immediate problem and there is an urgent need for control due to unacceptable, out of control, and potentially life-threatening behaviour. Participants in the current study received ratings spanning the full possible range of 1 to 9 (*M* = 5.0, *SD* = 1.5).

Severity of psychopathology. Severity of psychopathology was assigned by trained staff using the BPRS, which assessed 24 symptoms of participants in the week prior to enrollment in the COMHS Study. The total psychopathology score is obtained by summing the ratings of all items, for a potential score range from 0 to 168, the higher number indicating a high degree of severity. The total psychopathology score for participants in the current study ranged from 24 to 89 (*M* = 45.3, *SD* = 10.6).

Medical comorbidity. The presence and severity of medical comorbidity was determined using the ratings of participants’ primary clinicians on one item of the CCAR, which indicated the degree of problem the client experiences with medical illness. Like the “overall problem severity” item of the CCAR, described earlier, this item can range from one (“no problem”) to nine (“extreme problem”). The lowest rating indicates that the client has generally good health with no physical problems interfering with daily life, and no life-threatening conditions. Alternatively, if a chronic medical condition exists, it is compensated for, or sufficiently controlled, so that it causes no more discomfort or inconvenience than is typical for the client's age. The highest rating would reflect a person in a general hospital intensive care unit, and indicates that the client has a critical physical condition requiring constant professional attention to maintain life. Participants in the current study received ratings ranging from 1 to 8 (*M* = 2.8, *SD* = 1.8).

Factor analysis. A factor analysis was performed to reduce the five indicators of baseline clinical condition, if possible. Principal component analysis with varimax rotation on these five indicators resulted in two factors that accounted for 65% of the total variance. The first four indicators loaded heavily on the first factor, "Severity," which included the level of service need (.89), problem severity (.86), degree of medical illness (.61), and severity of psychopathology (.46). The second factor, "Chronicity," had duration of illness (.93) as its main component, with some loading of medical illness (.47). This seems reasonable, considering that the presence of a medical illness would contribute to the severity of problems faced by a client; as well, the longer a client is ill, the more time there is to develop a medical illness. Table 10 summarizes the descriptive statistics of each of the five indicators, and displays the separation of the indicators into the resulting two factors. These two factors, severity and chronicity, were included with age, gender and diagnosis as control variables when performing the regression analyses that tested for relationships between the predictor, intervening and outcome variables.

Table 9

Individual Characteristics I

	N	*Proportion*	*Skewness*	*Kurtosis*
Gender			.40	-1.9
Female	180	59.8%		
Male	121	40.2%		
Psychiatric Diagnosis			-.20	-1.31
Major depression with or without psychotic features	75	24.9%		
Bipolar disorder with or without psychotic features	117	38.9%		
Psychotic disorder including schizophrenia	109	36.2%		

Table 10

Individual Characteristics II

	N	*M*	*SD*	*Range*	*Skewness*	*Kurtosis*
Age	301	42.9	10.3	18.5 – 64.6	-.25	-.52
Baseline Clinical Condition	301					
Factor 1, “Severity”:						
Level of Service Need		2.8	0.9	1.1 – 6.9	.72	1.0
Severity of Problem		5.0	1.5	1 – 9	-.19	-.04
Medical Comorbidity		2.8	1.8	1 – 8	.80	-.31
Severity of Psychopathology		45.3	10.6	24 – 89	.75	.95
Factor 2, “Chronicity”:						
Duration of Illness		22.8	17.5	0 – 64.6	.62	-.71

Predictor Variable

Objective Social Support

The indicators for the OSS variable included clinician-provided ratings of the social resources available to participants as well as any interpersonal and/or family problems. Indicators for OSS also included counts of social support and contact frequency with family and friends, as provided by the participants themselves. Scores on five of the six indicators were reasonably normally distributed with the exception of counts of contacts, which was very skewed. Table 11 summarizes the descriptive statistics on the OSS indicators.

Counts of contacts. Several questions regarding social support were asked at the same time the SPS was administered. These items were added to the SPS specifically for the COMHS Study. One of the additional items asked participants to provide counts of those persons whom the participant “feels at ease with or can talk to about personal problems”. When responding to these questions, participants were urged to think about their *current* relationships with friends, family members, co-workers, community members, and so on. Research staff also emphasized to participants that they should *not* think about their relationships with care providers. The responses of the 301 participants in the current study indicated a large range in the number of persons they felt they could talk to about personal problems, from 0 to 30 (M = 3.9, SD = 4.3).

Frequency of contact with friends. Another item included in the SPS measure asked participants how many times in the previous month they had been in contact with friends. Response options included “not at all” (1), “once or twice” (2), “once a week” (3), and “several times a week” (4). Participants were also provided the option to respond with "no answer". While naming the response options, research staff twice reminded participants that the question referred to the past month. Participants in the current study ranged in their responses from 1 to 4 (*M* = 2.9, *SD* = 1.2).

Frequency of contact with family. The same response options were repeated to participants when asked how many times in the previous month they had been in contact with family. Due to the possibility that participants may have been living with family, a fifth response option was offered, i.e., "continuous" (5). Again, participants were twice reminded that the question was referring to the past month. Participants in the current study ranged in their responses from 1 to 5 (*M* = 3.8, *SD* = 1.2).

Clinician rating of social functioning. Three items from the CCAR were included as indicators for the OSS data element. The first item addressed interpersonal problems, which clinicians rated according to their knowledge of participants' relationships. The lowest rating (one, "no problem") was assigned to participants who had good relationships with friends, and whose interpersonal relationships were mostly fruitful and mutually satisfying. Major conflicts were rare or resolved without great difficulty, and the participant formed good relationships with others; was able to relate well to peers, adults, or children without difficulty; and appeared to be held in esteem within his or her network. The highest rating (nine, "extreme problem") was assigned by clinicians if relationship formation and maintenance did not appear possible at that time for their patient. Participants in the current study were assigned ratings from their clinicians ranging from 1 to 9 (*M* = 3.4, *SD* = 1.6).

Clinician rating of social resources. Clinicians also rated participants according to their knowledge of the participants' "person resources." Participants given the lowest rating (one, “very high”) were considered by their clinician to have many and strong person resources, including a strong, caring family that was willing and capable of helping. Participants receiving the highest rating (nine, “very low”) were thought by their clinicians to have severely limited person resources, in that the people who might have been available to the patient were overburdened and unwilling to help. Clinicians rated participants in the current study from 1 to 9 (*M* = 4.7, *SD* = 2.1).

Clinician rating of family problems. The final item from the CCAR used as an indicator of OSS provided information on the problems participants may have experienced with their families. Clinicians gave their patients a low rating (one, “no problem”) if patients’ relationships with family members were usually positive and mutually satisfying. Major conflicts with family members were rare or resolved without real difficulty, and primary relationships were good within normal limits. Clinicians assigned a high rating (nine, “extreme problem”) if patients were experiencing a total breakdown in their relationships with family and any continuing relationship with family members posed considerable personal risk for the participant and/or one or more family members. Participants in the current study were assigned ratings by their clinicians that ranged from 1 to 9 (*M* = 3.1, *SD* = 1.8).

Note that there is a small degree of overlap between the latter two clinician-rated indicators of OSS. “Social resources” required clinicians to include family members when rating their patients’ social networks. “Family problems” required clinicians to rate any difficulties participants experienced with their families.

Factor analysis. Principal component analysis with varimax rotation was performed on the six indicators for OSS, resulting in three factors that accounted for 72% of the total variance. The three indicators from the CCAR loaded heavily onto the first factor, “Clinician Rating of OSS,” which included clinician ratings of family problems (.89), social functioning (.75), and social resources (.53). The second factor, “Patient Rating of OSS (Family),” included only the participant-provided indicator of frequency of contacts with family (.90), from the SPS. The other two indicators from the SPS loaded onto the second factor, “Patient Rating of OSS,” which included the counts of contacts (.74) and the frequency of contacts with friends (.85), as provided by participants. These three factors, i.e., Clinician Rating of OSS, Patient Rating of OSS, and Patient Rating of Family OSS, were included in the regression analyses as the predictor variables.

Table 11

Objective Social Support Factors

	N	*M*	*SD*	*Range*	*Skewness*	*Kurtosis*
Objective Social Support	301					
Factor 1, “Clinician Rating of OSS”:						
Clinician Rating of Family Problems		3.1	1.8	1 – 9	.75	.08
Clinician Rating of Social Functioning		3.4	1.6	1 – 9	.71	.27
Clinician Rating of Social Resources		4.7	2.1	1 – 9	.01	-1.1
Factor 2, “Patient Rating of OSS (Family)”:						
Frequency of Contact with Family		3.8	1.2	1 – 5	-.67	-.75
Factor 3, “Patient Rating of OSS”:						
Counts of Contacts		3.9	4.3	0 – 30	2.3	7.7
Frequency of Contact with Friends		2.9	1.2	1 – 4	-.49	-1.34

Intervening Variable

Subjective Social Support

The indicators for the SSS variable included participants' self-ratings of various provisions of social support as well as their perception as to whether or not social support was available to them. Both of the two indicators of SSS were reasonably normally distributed. Tables 12 and 13 provide a summary of descriptive statistics on the SSS indicators.

Self-rating of social support provisions. The first eight items on the SPS provided information on various characteristics of the social support networks of participants, from their own perspective. Some items related specifically to participants' social attachments, e.g., "I lack a feeling of closeness with another person" (reversed). Other items assessed participants' reliable alliances, e.g., "There are people I can count on in an emergency." and "If something went wrong, no one would help me" (reversed). Whether or not guidance was available through participants' relationships was also assessed, e.g., "There is a trustworthy person I could turn to for advice if I were having problems." and "There is no one I feel comfortable talking about problems with" (reversed). Each of the eight items was reasonably normally distributed and responses on each item ranged from one to four. The sum of all eight items was also reasonably normally distributed, and ranged from 11 to 32 (M = 23.9, SD = 4.4).

Self-rating of social support availability. The ninth item on the SPS asked participants if there were any people with whom they felt at ease and could talk to about personal problems. By far, the majority of participants responded in the affirmative; 81.7% of participants (246 individuals) said that they had one or more persons they could talk to besides their clinician. The other 18.3% (55 individuals) responded that they had no one they could speak to about their personal issues.

Table 12

Subjective Social Support I

	N	*M*	*SD*	*Range*	*Skewness*	*Kurtosis*
Perceived Social Support	301					
Self-rating of Social Support Provisions		23.9	4.4	11 - 32	-.23	-.08

Table 13

Subjective Social Support II

	N	*Proportion*	*Skewness*	*Kurtosis*
Self-rating of Social Support Availability			-1.7	.73
Yes	246	81.7%		
No	55	18.3%		

Outcome Variables

Quality of Life

Data from two instruments were used to describe QoL among participants for the current study: Disease-specific QoL was measured by the W-QLI and generic QoL was measured by the EQ-5D. The EQ-5D includes a visual analogue measure of participants' current perceived health status, which was also used as an indicator of QoL in the current study. Participants' responses on all three indicators were reasonably normally distributed. Table 14 summarizes the descriptive statistics on the QoL indicators.

Disease-specific QoL. The W-QLI client questionnaire measures QoL in persons with severe psychiatric illness by assessing nine domains of QoL from the patient's perspective: life satisfaction, occupational activities, psychological wellbeing, physical health, social relations, economics, activities of daily living, symptoms, and the patient's own goals. Participants in the current study were administered the W-QLI by study staff in the end-point interviews at the close of Phase II of the COMHS Study. Each of the item scores on the W-QLI can range from –3 (the worst things could be) to +3 (the best things could be). Each domain provides a separate score to indicate the clients' weighting of the importance of the domain. Raw scale scores were converted to weighted scores, which takes into account the weight that each participant placed on the importance of each domain. A score of 0 on the W-QLI is a middle range score and close to the normative value for the target population. Weighted scores for participants in the current study ranged from –1.5 to 2.6 (M = 0.83, SD = 0.92).

Generic QoL. The EQ-5D is a generic health-related QoL instrument that was also administered to COMHS Study participants by study staff during end-point interviews. The descriptive system of the EQ-5D covers five dimensions of health including mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each dimension comprises three levels, i.e., no problems, some/moderate problems, and extreme problems. In scoring the EQ-5D, a participant's health state is first summarized by a score on each of the five dimensions, and this score is then converted into a summary index using a utility-weighted scoring system. Scores are weighted according to established scale values. Scores on the EQ-5D for participants in the current study ranged from –0.5 to 1.0 (M = 0.58, SD = 0.31).

Self-rated current perceived health status. The visual analogue scale (VAS) on the EQ-5D measured participants' self-rated current perceived health status at end-point interviews. Participants were asked by COMHS Study staff to draw a line from a box labeled "your own health today" to the point on the VAS that represented how good or bad their health was that day. A score of 0 on the VAS represents "worst imaginable health state" and a score of 100 represents "best imaginable health state". VAS scores for participants in the current study ranged from 0 to 100 (*M* = 64.1, *SD* = 18.9).

Factor analysis. Principal component analysis with varimax rotation was performed on the three indicators for QoL, resulting in one factor that accounted for 71% of the total variance. All three indicators, i.e., W-QLI (.88), EQ-5D (.83) and EQ-5D VAS (.82) loaded heavily onto a single QoL factor.

Table 14

Quality of Life

	N	*M*	*SD*	*Range*	*Skewness*	*Kurtosis*
Quality of Life	301					
Factor 1, "Quality of Life":						
Disease-specific QoL (Weighted Score)		0.83	0.92	-1.5 – 2.6	-.44	-.48
Generic QoL (Weighted Score)		0.58	0.31	-0.5 – 1.0	-.84	.03
Self-rated Current Perceived Health Status		64.1	18.9	0 – 100	-.64	.19

Functioning

In addition to the outcome variable of QoL, the current study investigated relationships between predictor and intervening variables and participant level of functioning. The MCAS was completed by COMHS Study staff at end-point, and these scores were used as a measure of participant community functioning at outcome. Participant scores on the MCAS were approximately normally distributed. Table 15 provides a summary of the descriptive statistics on the MCAS.

Community ability. For the current study, the total MCAS score was used as a measure of overall community functioning at outcome. Scores on the MCAS are grouped according to normative data, so that levels of client ability can be compared to the larger population of chronically mentally ill persons in the community. Levels of ability based on normative scores can range from Severe Disability (17-47) through Medium (48-62) to Little Disability (63-85). Participant scores in the current study ranged from 34 to 85 (*M* = 71.4, *SD* = 8.1).

Table 15

Functioning

	N	*M*	*SD*	*Range*	*Skewness*	*Kurtosis*
Level of Functioning	301					
Community Ability		71.4	8.1	34 - 85	-.86	1.21

Bivariate Analysis

A correlation matrix of all study variables was computed and examined for significant relationships between each pair of variables (see Table 16). Presented in the following narrative are those significant correlations that provide insight into the specific relationships under study.

Baseline Clinical Condition and OSS

Severity. Clinician-rated OSS was positively associated with the severity factor of baseline clinical condition. Participants who were more severely ill at baseline received ratings of OSS from their clinicians that indicated they had less OSS and a more poorly functioning social network, $r(299) = .61$, $p < .01$.

A negative association was observed between patient-rated OSS and the severity factor of baseline clinical condition. Participants who were more severely ill at baseline tended to report that they had fewer people in their social network and less contact with friends than participants who were less severely ill at baseline, $r(299) = -.16$, $p < .01$.

The patient-rated OSS factor, “frequency of family contact,” was also inversely associated with the severity factor of baseline clinical condition, $r(299) = -.13$, $p < .05$. Participants who were more severely ill at baseline tended to report less frequent family contact than those who were less severely ill at baseline.

Chronicity. The clinician-rated OSS factor was inversely associated with the chronicity factor of baseline clinical condition, $r(299) = -.16$, $p < .01$. Participants who were ill for longer durations received ratings of OSS from their clinicians that indicated they had more OSS and a better functioning social network.

The patient-rated OSS factor, “frequency of family contact,” was significantly inversely associated with the chronicity factor of baseline clinical condition, $r(299) = -.20$, $p < .01$. Participants who had been ill for a longer time tended to report less frequent family contact than those who had been ill for lesser durations.

Baseline Clinical Condition and SSS

Severity. Negative relationships were observed between the severity factor of baseline clinical condition and both of the SSS indicators. Participants who were more severely ill at baseline tended to report lower provisions of SSS, $r(299) = -.24$, $p < .01$; and lower availability of SSS, $r(299) = -.12$, $p < .05$.

Chronicity. A negative relationship was also observed between the chronicity factor of baseline clinical condition and provisions of SSS, $r(299) = -.16$, $p < .01$. Participants who had been ill for a longer time tended to report lower provisions of SSS.

Baseline Clinical Condition and Outcome

Severity. The severity factor of baseline clinical condition was inversely associated with both outcome variables: QoL, $r(299) = -.46$, $p < .01$; and functioning, $r(299) = -.42$, $p < .01$. Participants who were more severely ill at baseline tended to report lower QoL at outcome and tended to receive lower ratings of functioning at outcome.

OSS and SSS

The clinician-rated OSS factor was inversely associated with both SSS indicators, i.e., provisions, $r(299) = -.22$, $p < .01$ and availability, $r(299) = -.13$, $p < .05$. Participants who received lower (more positive) ratings of OSS from their clinicians tended to report themselves as having higher provisions and availability of social support.

A significant association was also observed between the patient-rated OSS factor and both indicators of SSS. Participants who reported higher OSS tended to likewise report higher SSS provisions, $r(299) = .54$, $p < .01$ and availability, $r(299) = .40$, $p < .01$.

Similarly, participants who reported more frequent family contact reported significantly higher SSS provisions, $r(299) = .32$, $p < .01$ and availability, $r(299) = .16$, $p < .01$ than participants who reported less frequent family contact.

OSS and Outcome

The clinician-rated OSS factor was inversely associated with both QoL, $r(299) = -.24$, $p < .01$ and functioning, $r(299) = -.17$, $p < .01$. Participants who received lower (more positive) ratings of OSS from their clinicians tended to have better QoL and functioning than those who received higher (less positive) ratings of OSS from their clinicians.

The patient-rated OSS factor was also significantly associated with both outcome variables. Participants who reported higher OSS tended to likewise report higher QoL at outcome, $r(299) = .21$, $p < .01$, and tended to receive higher ratings of functioning at outcome, $r(299) = .32$, $p < .01$.

Similarly, participants who reported more frequent family contact had significantly better QoL, $r(299) = .16$, $p < .01$ and functioning, $r(299) = .19$, $p < .01$ than participants who reported less frequent family contact.

SSS and Outcome

Significant positive associations were observed between the SSS indicators and both of the outcome variables: SSS provisions and QoL, $r(299) = .27$, $p < .01$; SSS availability and QoL, $r(299) = .12$, $p < .05$; SSS provisions and functioning, $r(299) = .33$, $p < .01$; and SSS availability and functioning, $r(299) = .25$, $p < .01$. Participants who perceived higher provisions and availability of social support tended to likewise report better QoL and tended to receive better ratings of functioning at outcome.

QoL and Functioning

A significant positive association between the two outcome variables was observed, $r(299) = .46$, $p < .01$. Participants reporting higher QoL at outcome tended to likewise receive higher ratings of functioning at outcome.

Summary of Bivariate Analysis

Clinical functioning at baseline was associated with both objective and perceived social support, as well as with QoL and community functioning at outcome.

Relationships were also observed between the two social support constructs and between the two outcome variables. As hypothesised, each of the social support constructs was associated with outcomes. Higher ratings of both objective and perceived social support were associated with better life quality and functioning at outcome. Multivariate analysis was used to clarify the unique effects of each of the social support constructs on these outcomes.

Table 16

Intercorrelations Between All Variables in the Model

	2	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1. Age	-.089	.175**	.061	-.220**	-.015	.509**	-.114*	-.139*	-.163**	-.126*	-.064	-.046	-.032
2. Sex (Female=0, Male=1)	---	-.159**	-.056	.200**	.000	-.020	-.031	-.050	-.003	.002	.019	.100	-.136*
3. Diagnosis: Depression	---	---	-.459**	-.434**	.122*	.036	.143*	.045	-.115*	-.099	-.046	-.019	-.008
4. Diagnosis: Bipolar Disorder	---	---	---	-.601**	.017	.043	.014	.106	.114*	.136*	.112	-.067	.144*
5. Diagnosis: Psychosis	---	---	---	---	-.127*	-.076	-.143*	-.148**	-.013	-.048	-.073	.085	-.138*
6. Baseline Clinical Condition: Severity	---	---	---	---	---	.000	.611**	-.131*	-.163**	-.235**	-.120*	-.455**	-.421**
7. Baseline Clinical Condition: Chronicity	---	---	---	---	---	---	-.162**	-.201**	-.108	-.163**	-.067	-.097	-.106
8. OSS: Clinician Rating	---	---	---	---	---	---	---	.000	.000	-.219**	-.129*	-.241**	-.167**
9. OSS: Patient Rating (Family)	---	---	---	---	---	---	---	---	.000	.318**	.164**	.162**	.186**
10. OSS: Patient Rating	---	---	---	---	---	---	---	---	---	.542**	.396**	.212**	.324**
11. SSS: Provisions	---	---	---	---	---	---	---	---	---	---	.565**	.268**	.328**
12. SSS: Availability	---	---	---	---	---	---	---	---	---	---	---	.124*	.249**
13. QoL	---	---	---	---	---	---	---	---	---	---	---	---	.458**
14. Functioning	---	---	---	---	---	---	---	---	---	---	---	---	---

* $p<.05$ (2-tailed)
** $p<.01$ (2-tailed)

Multivariate Analysis

Multiple linear regression was used to model the association between OSS and SSS and the outcomes of QoL and functioning. Separate models were derived for each outcome variable. Table 17 indicates the steps at which each of the variables under study was introduced, for each outcome variable. Note that the categorical variable “diagnosis” introduced in Block 2 was converted into three sets of dichotomies, and one of these three dummy variables (i.e., schizophrenia) was left out of the model to avoid perfect multicollinearity. (The diagnostic category of psychotic disorder thus served as a reference category in the regression analyses, i.e., a significant coefficient for depressive or bipolar disorder is interpreted to mean a difference between patients with one of these conditions and those with a psychotic disorder.) Note, too, that a given analysis involved one of each type of indicator introduced in Block 3 (OSS or SSS), and one of the corresponding interactions introduced in Block 4.

The results of the regressions are presented in narrative and then summarized in table format for clarity (Table 18). The results of the multiple regression analyses clarified those associations observed in the bivariate analyses. Analyses determined that each of the regressions had a power of 1.0 (100%) to yield a statistically significant result, given the sample size (301) and the number of predictors (nine).

Table 17

Multiple Regression Model

Step	*Variables Introduced*
Block 1	Age, Sex, Baseline Clinical Condition (Factors 1, 2)
Block 2	Diagnosis (Depression, Bipolar)
Block 3	OSS (Factors 1, 2, 3), SSS (Indicators 1, 2)
Block 4	OSS (Factors 1, 2, 3) * SSS (Indicators 1, 2)

Stepwise Linear Regression Models: Hypothesis 1

The first set of six stepwise regressions attempted to predict QoL as a linear function of respondent age, gender, baseline clinical condition (two factors), diagnosis (two indicators), OSS (three factors), and SSS (two indicators). These regressions, taken together, explained 24% to 26% (R^2) of the variation in QoL; the overall relationship was significant, e.g., $F(9, 291) = 11.32$, $p < .01$.

The second set of six regressions attempted to predict functioning as a linear function of respondent age, gender, baseline clinical condition, diagnosis, OSS, and SSS. These regressions explained 28% to 31% (R^2) of the variation in community functioning. The overall relationship was significant, e.g., $F(9, 291) = 13.42$, $p < .01$.

Gender. When all other predictors were held constant, gender was a significant predictor of QoL in all six regressions, e.g., $\beta = .12$, $t(291) = 2.04$, $p < .05$. Male participants reported significantly higher QoL than female participants, holding age, severity of illness at baseline, diagnosis and social support constant.

Likewise, gender was a significant predictor of functioning for all six analyses, when all other predictors were held constant, e.g., β = -.11, *t*(296) = -2.10, *p* < .05. Male participants received significantly higher ratings of functioning than female participants, after accounting for age, baseline clinical condition, diagnosis and social support.

Baseline clinical condition (severity). When all of the other predictors were held constant, the severity factor of baseline clinical condition was a significant predictor of QoL in each of the six models, e.g., β = -.46, *t*(291) = -7.09, *p* < .01. The more severely ill a participant was at baseline, the lower QoL the participant reported at outcome, after accounting for age, gender, diagnosis and social support.

The severity factor of baseline clinical condition was a significant predictor of functioning when all other predictors were held constant in the six regressions, e.g., β = -.47, *t*(291) = -7.38, *p* < .01. When age, gender, diagnosis and social support were accounted for, participants with higher levels of severity at baseline had lower levels of functioning at outcome.

Psychiatric diagnosis. A diagnosis of bipolar disorder was a significant predictor of functioning in all six regressions, once the potential influence of the other predictors was adjusted for, e.g., β = .18, *t*(291) = 3.09, *p* < .01. Relative to participants diagnosed with psychosis, participants diagnosed with bipolar disorder demonstrated significantly better functioning when age, gender, baseline clinical functioning and social support were held constant.

Depression was a significant predictor of functioning in three of the six regressions. When the model included patient-rated dimensions of OSS as a whole and either of the two indicators of SSS, a diagnosis of depression was significantly associated with functioning. Relative to participants diagnosed with psychosis, participants diagnosed with depression demonstrated significantly better functioning when age, gender, baseline clinical functioning and specific dimensions of social support were held constant. This relationship was demonstrated in regression models that included patient-rated objective dimensions of social support and either perceived provisions of social support ($\beta = .14$, $t(292) = 2.34$, $p < .05$) or perceived availability of social support ($\beta = .13$, $t(292) = 2.29$, $p < .05$).

A similar relationship was demonstrated when the model included the patient-reported frequency of family contact as a specific objective dimension of social support and perceived provisions of social support, $\beta = .13$, $t(291) = 2.13$, $p < .05$. Relative to participants diagnosed with psychosis, participants diagnosed with depression demonstrated significantly better functioning when age, gender, baseline clinical functioning and these specific dimensions of social support were held constant.

OSS (clinician-rated). Clinician-rated OSS was a significant predictor of functioning at outcome once age, gender, baseline clinical condition, diagnosis, and perceived provisions of social support were accounted for, $\beta = .14$, $t(291) = 2.12$, $p < .05$. Participants who received higher ratings from their clinicians on objective dimensions of social support demonstrated higher levels of functioning at outcome when age, gender, baseline clinical functioning, diagnosis, and their own perceptions of social support provision were held constant.

OSS (patient-rated). Patient-rated OSS was significantly associated with QoL, once age, gender, baseline clinical condition, diagnosis, and perceived availability of social support were accounted for, $\beta = .14$, $t(292) = 2.47$, $p < .05$. Participants who reported higher numbers of contacts and/or more frequent contact with friends likewise reported higher life quality at outcome. when age, gender, baseline clinical functioning, diagnosis, and their own perceptions of the availability of their social support were held constant.

Patient-rated OSS was a significant predictor of functioning at outcome once age, gender, baseline clinical condition, diagnosis, and either perceived provisions of social support (β = .19, *t*(292) = 3.20, *p* < .01) or perceived availability of social support (β = .21, *t*(292) = 3.77, *p* < .01) were accounted for. Participants rating themselves higher on objective dimensions of social support (i.e., count of contacts and frequency of contact with friends) demonstrated significantly better functioning when age, gender, baseline clinical functioning, diagnosis, and their own perceptions of subjective dimensions of their social support were held constant.

SSS (provisions). Once age, gender, baseline clinical condition, and diagnosis were accounted for, perceived provisions of social support was a significant predictor of QoL in all three applicable regressions, e.g., β = .18, *t*(294) = 3.34, *p* < .01. Participants who reported more positive perceptions of social support provisions also reliably reported higher QoL when age, gender, baseline clinical condition, diagnosis and any of the indicators of objective dimensions of social support were held constant.

Perceived provisions of social support was a significant predictor of functioning in two of the three applicable regressions, e.g., β = .23, *t*(294) = 4.29, *p* < .01. Participants who reported more positive perceptions of social support provisions were more likely to demonstrate better functioning, holding constant age, gender, baseline clinical condition, diagnosis and either clinician ratings of objective dimensions of social support or patient ratings of the frequency of contact with their family.

SSS (availability). Perceived availability of social support was a significant predictor of functioning in two of the three applicable regressions, e.g., $\beta = .19$, $t(292) = 3.66$, $p < .01$. Participants who reported greater availability of social support were more likely to demonstrate better functioning, holding constant age, gender, baseline clinical condition, diagnosis and either clinician ratings of objective dimensions of social support or patient ratings of the frequency of contact with their family.

Results summary for hypothesis 1. The first hypothesis of this study predicted that, after adjusting for age, gender, baseline clinical condition, and diagnosis, objective dimensions of social support (i.e., a larger, better functioning social support network and greater contact with that network) and subjective dimensions of social support (i.e., greater perceived availability and provision of social support) would be related to higher levels of QoL and functioning in individuals with SPMI.

In the QoL analyses, participants providing higher ratings of objective dimensions of their social support (i.e., higher numbers of contacts and/or more frequent contact with friends) were indeed significantly more apt to likewise report higher life quality at outcome. Furthermore, participants reporting more positive perceptions of social support provisions were significantly more likely to report higher life quality at outcome. However, clinician ratings of objective dimensions of social support and participant reports of the frequency of contact with their family were not significantly associated with QoL, nor were participant perceptions of the availability of their social support. This suggests that specific forms of both objective and subjective social support (i.e., perceptions of social support provisions and participant ratings of objective aspects of their support system) are associated with QoL, and not social support in a more general sense. It is important to note that, in addition to participant ratings of subjective dimensions of their social support, it was their ratings of objective dimensions of their social support that were related to life quality. While participant reports of family contact were not significantly associated with QoL, their reports of numbers of contacts and/or frequency of contacts with friends do seem to have importance in life quality.

In the analyses of functioning, participants who received higher ratings from their clinicians on objective dimensions of social support and those rating themselves higher on similar objective dimensions demonstrated higher levels of functioning at outcome. However, participant reports of the frequency of contact with their family were not significantly associated with functioning. Greater levels of perceived social support provision and availability were significantly associated with higher functioning: Participants who reported more positive perceptions of support provisions and greater availability of support demonstrated better functioning at outcome. Again, it appears that certain forms of objective and subjective social support are associated with functioning and not others, such as the frequency of family contact as reported by participants. Like the QoL analyses, it is important to note that it is the participant ratings of both objective and subjective dimensions of their social support that were most reliably associated with functioning (see Table 18).

Stepwise Linear Regression Models: Hypothesis 2

These twelve regressions attempted the same predictions as those attempted in the first hypothesis, with the addition of a new term to each regression. This term was the product of the objective and subjective social support variables (OSS * SSS), and provided a test of the hypothesized moderator effect after adjusting for main effects of each social support variable.

OSS and SSS. After adjusting for age, gender, baseline clinical condition, diagnosis, and the main effects of OSS and SSS, it was predicted that the interaction of the two social support variables would be significant, i.e., that SSS would influence the relationship between OSS and the outcomes of QoL and functioning. This was the case in just one of the twelve regression models. After adjusting for the other predictors, the interaction of clinician-rated OSS and availability of SSS significantly predicted QoL, $\beta = -.59$, $t(291) = -2.40$, $p < .05$

In the bivariate analyses, the clinician-rated OSS factor was inversely associated with QoL. Participants who received lower (more positive) ratings of OSS from their clinicians tended to report better QoL than those who received higher (less positive) ratings of OSS from their clinicians. Conversely, significant positive associations were observed between SSS availability and QoL. Participants who perceived higher availability of social support tended to likewise report better QoL at outcome. In the multivariate regressions, neither clinician-rated OSS or participants’ perceived availability of SSS, on their own, were significantly associated with QoL. Yet the interaction of these two indicators was observed to be significantly related to QoL.

Post hoc analysis. In order to examine if this interaction might indicate that SSS is associated with life quality at particular levels of OSS, post hoc multiple regression analyses were conducted. Two stepwise regressions attempted to predict QoL as a linear function of respondent age, gender, baseline clinical condition (two factors), diagnosis (two indicators), and clinician-rated OSS. In each of the two analyses, the sample was determined by selecting for specific values of the dichotomous rating of SSS availability, i.e., one (participant perceives social support is available) or two (participant perceives social support is not available).

Once age, gender, baseline clinical condition, and diagnosis were accounted for, clinician-rated OSS was a significant predictor of QoL for participants who rated social support availability as poor, $\beta = .44$, $t(47) = 2.13$, $p < .05$. This model explained 20% (R^2) of the variation in QoL; the overall relationship was significant, $F(1, 47) = 4.5$, $p < .05$. Among participants who perceived themselves as having low levels of social support, those who received higher ratings (less positive) from their clinicians on objective dimensions of social support tended to report higher levels of QoL at outcome when age, gender, baseline clinical functioning, and diagnosis were held constant .

Once age, gender, baseline clinical condition, and diagnosis were accounted for, clinician-rated OSS was not a significant predictor of QoL for participants who rated social support availability as good, $\beta = -.012$, $t(239) = -.176$, $p = .86$. This model explained 0% (R^2) of the variation in QoL; the overall relationship was not significant, $F(1, 238) = .031$, $p = .86$.

These post hoc analyses suggest that when OSS is externally rated, it is predictive of QoL among participants who perceive themselves as having low levels of social support when age, gender, baseline clinical functioning, and diagnosis are held constant. Among participants who see themselves as having more access to social support, the external rating of objective levels of social support is of no significance.

Table 18

Summary of Multiple Regression Results

	QoL	Functioning
Control Variables		
Age	ns	ns
Gender	6/6 significant	6/6 significant
Baseline Clinical Condition: Severity	6/6 significant	6/6 significant
Baseline Clinical Condition: Chronicity	ns	ns
Psychiatric Diagnosis	ns	Bipolar: 6/6 significant Depression: 3/6 significant
Predictor Variables		
OSS: Clinician Rating	ns	1/2 significant
OSS: Patient Rating (Family)	ns	ns
OSS: Patient Rating	1/2 significant	2/2 significant
Intervening Variables		
SSS: Provisions	3/3 significant	2/3 significant
SSS: Availability	ns	2/3 significant
Interactions		
OSS Clinician Rating * SSS Provisions	ns	ns
OSS Clinician Rating * SSS Availability	significant	ns
OSS Patient Rating * SSS Provisions	ns	ns
OSS Patient Rating * SSS Availability	ns	ns
OSS Family Contact * SSS Provisions	ns	ns
OSS Family Contact * SSS Availability	ns	ns

Chapter 5: Discussion and Recommendations

The following sections discuss the results of this study according to each of the two objectives: (1) to clarify the impact of social support on life quality among adults with SPMI, and (2) to examine if the social experience moderates any association between the quantity and objective quality of social support and QoL. First, participant characteristics are reviewed, followed similarly by reviews of each of the variables measured in this study. These reviews lead into an interpretation and discussion of the results of key relationships observed through bivariate analyses. Particular attention is given to the relationships specific to the first objective. The findings of the multivariate analyses, which tested the hypothesis for the second objective, are then reviewed and discussed. Possible clinical and policy implications of this research are addressed, followed by a description of the strengths and limitations of this study and recommendations for future research directions.

Participant Characteristics

The average age of the 301 participants in this study was 43 years, and 60% were female. The higher proportion of females is somewhat atypical for research in severe mental illness, where the gender ratio is often relatively more balanced or favours a slight majority of males (53% males; Burke-Miller, Cook, Grey, Razzano, et al., 2006; 46% males; Schretlen, Jayaram, Maki, Park, Abebe, et al., 2000; 49% males; Lora, Bezzi, & Erlicher, 2007). However, a strong bias towards females as study participants has been demonstrated in nursing research. Data from 259 studies published in four leading nursing research journals from 2005 to 2006, indicated that 75.3% of study participants were female, and 38% of studies had all-female samples (Polit & Beck, 2008).

Severe and Persistent Mental Illness

Participants met the diagnostic eligibility criteria of SPMI set forth by Parabiaghi et al. (2006) and Schinnar et al. (1990), which cover diagnosis, duration of illness and severity of disability. All participants were diagnosed with a major mental illness, either major depression (25%), bipolar disorder (39%), or psychotic disorder (36%), and the duration of their illness averaged 23 years. All participants were severely disabled by their illness, as described through their baseline level of service need, problem severity, degree of medical illness, and severity of psychopathology.

Level of service need addressed both physical and mental health care needs as well as rehabilitation, vocational or housing support needs. Participants ranged from only occasionally needing services to requiring supports and services two or more times each week. It is estimated that participants needed service an average of one to three times each month. (This data point was derived during the principal study, and it was not possible to calculate a precise average frequency of service need for the current study.)

The severity of the average participant's overall problems was moderate, where the problem(s) required therapeutic intervention, and persisted at a moderate level or occasionally became severe. Participants ranged from those having severe problems where there was an urgent need for control of their behaviour to those where no problems were imminent.

While some participants demonstrated generally good health with no uncontrolled physical problems that were interfering with their daily lives, others suffered from critical physical conditions requiring constant professional attention or hospitalization. On average, participants had mild chronic physical conditions or disabilities that interfered with daily living, and required some level of care.

The authors of the BPRS argue against specific behavioural descriptions to anchor the rating scale for each of the items on the premise that such descriptors could alter the psychometric properties of the tool and might unnecessarily restrict the meaning of each item (Rhoades & Overall, 1988). The psychopathology score for participants ranged from 24 to 89 (*M* = 45.3, *SD* = 10.6) on the BPRS, which can potentially range from 0 to 168. Based on research with similar populations that observed comparable scores on alternate versions of the BPRS (Bell et al., 1992; Hafkenscheid, 2000), the scores observed in the current study reflect a level of psychopathology typically observed among individuals receiving treatment for SPMI.

Given the large sample size and the number and variety of recruitment sites, it is reasonable to conclude that the clinical profiles of participants in the current study were consistent with profiles of the full range of individuals seen for inpatient, outpatient or community treatment for SPMI in Alberta, providing support for the generalizability of the results. The average participant was a 43-year old person who had been ill for much of his/her life with a major mental illness, who suffered from a chronic but controlled physical condition that nonetheless interfered with daily life, who required services and support one to three times per month, and whose illness had the potential to deteriorate where acute symptoms necessitated hospitalization.

Objective Social Support

In accordance with the multidimensionality of the construct, a comprehensive set of indicators was used to measure OSS among participants in the current study. Measures included three characteristics of OSS that occur within social networks, *structural*, *interactional* and *functional*, each of which was described earlier (Marsella & Snyder, 1981; Goldberg et al., 2003).

Structural Characteristics

On average, participants indicated that there were three to four people to whom they could talk about personal problems. A particularly wide range was evident, where one participant indicated having as many as 30 such confidantes, whereas the support networks of 54 (18%) participants were wholly non-existent. Even existing networks were not necessarily accessible. Most participants indicated that they saw their friends up to once each week, others indicated that they had no contact at all with friends in the month prior to the study interview. Family members were seen more regularly: Most participants saw their families up to several times per week, though this figure may be skewed since it included those participants who lived with their families.

Interactional Characteristics

In addition to the structural characteristics of participants' social networks, clinician ratings of the quality of participants' relationships were examined. Most participants were considered by their primary clinicians to have relationships that were mildly unsatisfactory with occasional disruptions to the relationships. Although functioning was mostly appropriate, participants appeared lonely or alienated to their clinicians, and demonstrated some difficulty in developing or keeping friends. Again, a range was evident, where some participants enjoyed mostly fruitful and mutually satisfying relationships, while others were incapable of relationship formation and maintenance at the time of assessment.

Clinicians provided similar ratings when asked specifically about participants' family relationships. Most participants had only mildly unsatisfactory relationships where friction, discord and turmoil persisted at a low level and were not easily resolved. Again, some participants had generally positive and mutually satisfying relationships with their families, while others were experiencing a total breakdown in their family relationships.

Functional Characteristics

On average, clinicians considered participants to have generally a moderate amount of person resources, where at least a few people were available to help but expansion of resources was desirable. This ranged from those who had many and strong resources, including a strong, caring family that was willing and capable of helping, to those with severely limited resources, in that the people who might have been available to the participant were overburdened and unwilling to help.

In general, then, participants in this study had three to four friends whom they saw up to once per week, while having contact with their families up to several times per week. According to their clinicians, most participants had relationships with friends and family that were mildly unsatisfactory, with occasional disruptions or a persistent low level of friction. Clinicians considered participants to have some people available to help them but believed they needed more support people who were both willing and capable of helping participants.

Subjective Social Support

In addition to the number of friends or family a participant had, and the frequency with which social contact occurred, participants' perceptions of both the provision and receipt of support among their networks provided insight into the quality of their social interactions.

The vast majority of participants indicated that they felt sufficiently comfortable with at least one member of their social network to share personal problems. Over 80% of participants had either a family member or a friend with whom they felt at ease and to whom they could talk about their private issues. Conversely, 18% (55/301) had no such person other than their clinician with whom to speak about personal issues.

Participants were somewhat positive when reporting the quality of their social support. While the data was not readily divisible into the social support functions incorporated by the authors of the tool, it is important to review the three provisions reflected in the global scores of participants. The version of the instrument used in this study assessed three provisions of SSS: *guidance*, which is advice or information most often obtained from teachers, mentors, or parents; *reliable alliance,* which is the assurance that others can be counted upon for tangible assistance, typically family members; and *attachment*, which is the emotional closeness from which a sense of security is derived, most often provided by a spouse but also from close friendships or family relationships (Cutrona & Russell, 1987).

Global scores could potentially range from 0 to 32, and some participants considered their social interactions, as a whole, to be of the highest possible quality (i.e., 32). Others perceived they had very few people they could count on for support and/or that they themselves provided little support to any relationships they may have had (i.e., 11). The average score was 24, which suggests that most participants believed that they had moderate access to advice or information from mentor sources in their networks, and felt reasonably assured of dependable, tangible assistance when required. From this global score average, it would seem that participants felt fairly secure within their social networks, though it is not known whether the perceived emotional closeness occurred through relationships with friends or with family members.

Norms established on the full version of the social support instrument report a mean of 82.45 out of a possible 96 (Cutrona & Russell, 1987). Research on populations presumed under stress reported comparable scores on alternate versions of the instrument: Post-partum women (*M* = 74.19 out of possible 84; Cutrona, 1984), spouses of cancer patients (*M* = 72.1 out of possible 96; Baron et al., 1990), and elderly individuals experiencing negative life events (*M* = 76.7 out of possible 96; Cutrona, Russell & Rose, 1986). While the alternate format used in the current study precludes direct comparisons with previously reported scores on the full instrument, this evidence does suggest that the scores observed in the current study reflect a level of perceived social support that is similar to stressed populations and somewhat below the average among normative populations.

Quality of Life

Disease-specific Quality of Life

The range of scores on disease-specific QoL for this sample suggests that at least some of the participants were very satisfied with their lives. As previously indicated, scores could range from –3 (the worst things could be) to +3 (the best things could be), and a score of 0 is about the norm for persons with severe psychiatric illness (Becker et al., 1997). Scores for participants in the current study ranged from –1.5 to 2.6, with an average score of 0.83. This suggests that participants, on average, were well satisfied with their lives relative to the target population as a whole. Some participants, however, were keenly dissatisfied with those dimensions of their lives that they considered the most important. This study did not separate the data into the nine domains of life satisfaction that were measured, so it is not clear whether global levels of satisfaction (or dissatisfaction) were due to occupational factors, physical health, finances, or some other domain or combination of domains in participants' lives. What is clear is that this sample, as a whole, expressed reasonably positive feelings of well-being.

Generic Quality of Life

The assessment of generic or health-related (HR) QoL among participants resulted in a less positive picture. The average participant score was 0.58 on the HR QoL measure, which was much lower than individuals in Alberta with no medical problems (0.91; Johnson & Pickard, 2000) or those with cancer (0.77; Johnson & Pickard, 2000). A study of 990 individuals with advanced HIV disease reported a mean baseline score of 0.80 on the same measure (Wu et al., 2002). This mean was just slightly lower than that found among 11,698 individuals of the general population in Sweden, which indicated an average HR QoL of 0.83 (Burstrom, Johannesson & Diderichsen, 2001). Even when comparing the sample from the current study with similar populations, the current study participants demonstrated a low HR QoL. Inpatients and outpatients with a diagnosis of schizophrenia, from two psychiatric hospitals in Germany, demonstrated a mean HR QoL of 0.71 (Konig, Roick & Angermeyer, 2007).

These reports suggest that satisfaction among the participants in the current study with the health dimensions of mobility, self-care, usual activities, pain/discomfort, and anxiety/depression was considerably low relative to a similar sample or to samples that were terminally ill, and extremely low relative to the general population.

Self-rated Current Perceived Health Status

Likewise, participants’ self-rated current perceived health status at end-point interviews was very low relative to samples that were not mentally ill. Scores for participants in the current study covered the full range from 0 (“worst imaginable health state”) to 100 (“best imaginable health state”). The average participant score was 64.1, which was much lower than individuals in Alberta with no medical problems (85.0; Johnson & Pickard, 2000) and somewhat lower than those with cancer (70.0; Johnson & Pickard, 2000). However, participants’ perceived health status scores were equivalent to those scores from samples with serious mental illness. Scores for a schizophrenia group on the same measure averaged 65.7, whereas samples of bipolar disorder patients across Europe and the United States combined to demonstrate an overall mean of 64.0 (Konig, Roick & Angermeyer, 2007).

Conclusions Regarding Quality of Life

It would seem that most participants in the current study, when asked questions about various dimensions of their lives, reported fairly positive feelings of satisfaction relative to reports of other SPMI samples. When asked to rate their health “today,” they provided ratings very similar to other samples of individuals with serious mental illnesses. However, when questioned about specific functional health states and activities of daily living, they tended to rate themselves considerably lower than a similar sample or individuals who were terminally ill.

Compared to the multi-dimensional, disease-specific tool used in this study, the instrument used to measure generic QoL is a simpler instrument with fewer scale levels, a brief time referent, and no coverage of symptoms (The EuroQol Group, 1990). These aspects, as well as the inclusion of only functional status questions, contribute to ease and brevity in administration and great utility for comparison population studies. But the instrument may lack the sensitivity to discriminate dimensions of QoL that are equally important to functional status, such as those emphasized by Lehman (1996), i.e., a persons' sense of wellbeing, and what they have (access to resources and opportunities). As noted earlier, disease-specific measures of life quality, which contain items that assess specific conditions of interest, may be particularly sensitive to within-subject changes and thus more responsive than generic measures (Patrick & Deyo, 1989). The more comprehensive measure of disease-specific QoL was developed specifically to discriminate the dimensions of physical health, psychological wellbeing, functional roles, and subjective sense of life satisfaction (Becker et al., 1997). This suggests that it is better equipped than the generic QoL tool to accurately measure “individuals’ 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” (WHO, in Korr & Ford, 2002, p.21).

It seems reasonable to conclude, then, that the participants in this study reported at least comparable satisfaction with their lives to similar samples of participants with SPMI, and perceived their current health status as likewise equivalent to such samples.

Functioning

The overall community functioning at outcome for participants was high relative to the larger population of chronically mentally ill persons in the community. Though some participants' scores fell below the 10th percentile of the normative population, on average, participants were in the 90th percentile.

Population of Reference

One consideration in interpreting these results is that ratings are relative to the population of reference, which is specific to each individual rater. The reference group for making judgements in scoring is all the chronically mentally ill clients the rater has ever known (Barker & Barron, 1997). If the study staff who rated participants had previous experience with more acutely ill caseloads, this sample may have been rated higher than if staff had experience with less ill populations.

Study Sampling

A second consideration is that this sample excluded patients at the various recruitment sites who were unable to independently complete an informed consent, thus requiring a level of functioning not necessarily consistent with all severely mentally ill patients at those sites. Note that all participants in this sample were in treatment; scores for an untreated sample would reflect less ability to function in the community. Additionally, there was selection bias operating in this sample due to exclusion criteria including individuals with guardians or those in crisis.

Conclusions Regarding Overall Community Ability

The community functioning variable was not separated for analyses into its four subsections. It is possible that participants' scores were lower in some subsections and higher in others. Overall, however, very high scores prevailed, which suggests consistently good functioning across all subsections. This sample thus had few problems that interfered with functioning, such as extreme mood swings, impaired thought processes, low intellectual functioning or physical health impairments. They were well-adjusted to living in the community, in that they were generally able to manage money, attend to personal hygiene, dress appropriately, eat regular meals and perform adequate housekeeping. They were relatively competent socially, and had few behavioural problems such as medication or treatment plan non-compliance, and abuse of alcohol or drugs.

Interpretation of Key Findings

Clinical functioning at baseline was associated with both objective and subjective social support, as well as with QoL and community functioning at outcome. Relationships were also observed between the two social support constructs and between the two outcome variables. As hypothesised, each of the social support constructs was associated with outcomes: Higher ratings of both objective and perceived social support were associated with better life quality and functioning at outcome. Participant ratings of objective dimensions of their own social support were shown to be most important in determining life quality and functioning at outcome. Of the two SSS variables, the one most predictive of life quality was the participants’ sense of the provision and receipt of social support. Clinician-rated OSS was a significant predictor of QoL only for participants who rated social support availability as poor.

Baseline Clinical Condition and Social Support

Participants who were more severely ill at baseline had lower scores on both objective and subjective dimensions of social support. Participants as well as their primary clinicians reported objective dimensions of support; the highest association was observed when reports of objective support were provided by clinicians. More chronically ill individuals experienced a decrease in the size of their support networks and had less family contact but maintained equivalent numbers of confidantes. Clinicians, however, provided higher ratings of objective support among these more chronically ill patients. These results offer evidence for both the main-effects and stress-buffering models of social support.

Clinical condition and objective social support. Participants whose clinical condition was more severe at baseline, in that they were more severely disabled by their illness and required more frequent services, had fewer people in their social network, less contact with both friends and family, and a poorly functioning social network (as observed by primary clinicians). Though none of the studies described in the literature review reported on these relationships, the findings are consistent with previous research that demonstrated relationships between smaller networks and greater clinical impairment (Cohen et al., 2004; Goldberg et al., 2003; MacDonald, Jackson, et al., 1998; Meeks & Hammond, 2001) as well as more frequent service utilization (Albert et al., 1998; Lam & Rosenheck, 1999). This finding also supports the main-effects theory, which associates integration into a social network with better mental health (Cohen et al., 2000).

The association between severity of clinical condition and objective dimensions of social support was much stronger when objective support was rated by clinicians (.61) than by the participants themselves (-.16 and -.13). It is possible that clinicians consider loss of social support to be a marker for clinical severity, including poor functioning.

Similarly, participants who had been ill for more years at baseline indicated they had less frequent family contact than their peers who had been ill for shorter durations did. An explanation for this finding may be that the longer people live independently from their family of origin, the more they individuate from their family and the less time they spend with family members. Another explanation may be that family members may distance themselves from patients who have been ill for longer durations due to the burden posed by mentally ill individuals on their family members.

Contrary to participant ratings of their own objective support, clinicians considered these more chronically ill patients to have more and better functioning social support. Perhaps these clinicians had known the participants during acute episodes of their illness, when they were severely ill and (as described above) had little or no support. Many years later, though participants still had very few social contacts and seldom saw these contacts, their clinicians considered having a *few* contacts better--relatively--than having *no* contacts. Clinicians may have thus rated these patients better off, socially, than they had been in their more severely ill past. Likewise, clinicians may have rated these participants relative to patients in their care who were currently more severely ill and without support. Again, the presence of *any* social support for the participants may have compared favourably to a dearth of support received by more severely ill patients.

There is evidence suggesting that older people with SPMI, i.e., those who have been ill for a longer time, may be more socially integrated than their younger peers (DeSisto et al., 1995) and may find relationships less challenging (Randolph, Lindenberg,

& Menn, 1986). It is possible that older adults grow accustomed to their illness, adjust their expectations for relationships and feel greater comfort becoming friends with other individuals experiencing serious mental illness. These findings were not supported in the current study, however, as no significant association was demonstrated between chronicity of condition and size of social network or frequency of contact with friends, as reported by participants. This is consistent with the findings of this study for age of participants; though age was significantly and inversely associated with both clinician- and patient-rated OSS in bivariate analyses, this was not supported in multivariate analyses.

Clinical condition and subjective social support. Participants who were more severely disabled by their illness and required more frequent services at baseline perceived themselves as having less social support and/or as providing less support in any relationships they may have had. These individuals, the most ill of the SPMI sample, believed that they had less access to advice or information from mentor sources in their networks, and felt less assurance that dependable, tangible assistance would be available to them if they needed it. They felt less secure within their social networks, and less emotional closeness through any relationships they had with friends or family members. Likewise, the more severely ill patients at baseline reported lacking members of their social network with whom they felt sufficiently comfortable to share personal problems. Indeed, these most severely ill participants reported having no one other than their clinician with whom to share such issues.

Empirical evidence is scant on the relationship between subjective social support and the clinical condition of individuals with mental illness. None of the studies covered in the literature review reported on this relationship. Only one study was located that assessed subjective social support and clinical condition, which reported that “there was an indication that perceived social support has an effect that approached significance on psychiatric symptomotology” (as measured by the BPRS; Ryan, 2001).

The finding that those who are more severely disabled by mental illness feel less secure within their social networks, less emotionally close to friends or family, and less assurance that assistance will be available if they need it, provides evidence for the stress-buffering model of social support. When subjective evaluation of mentally unwell individuals’ support systems indicates inadequate support, the stress-buffering model proposes that it is the lack of assurance that others will provide necessary resources that reduces coping ability among these individuals. The ability to cope is related to health in that it moderates the effects of stressful situations and prevents maladaptive behavioural responses (Cohen et al., 2000). Support may alleviate the impact of stress by providing a solution to a problem, reducing the perceived importance of the problem, or providing a distraction from it (Cohen et al., 2001). The participants who were most severely ill indicated having no one to confide in other than their clinician, and maladaptive responses to stressful events have been found to be reduced if people are available to talk to about problems (Cohen et al., 2000).

Inadequate support was also associated with a longer duration of illness. Individuals who had been ill the longest at baseline felt less emotional closeness to friends and family, and felt less assured that assistance would be available if they needed it. They did not, however, report having less access to confidantes. Hence, relative to participants who had been ill for shorter durations, these individuals did have equivalent access to people they could talk to about their personal problems, yet felt less secure in their social networks, overall. This finding is consistent with bivariate analyses that included age of participants, where age was significantly and inversely associated with the provision of social support but not the availability of confidantes.

To summarize, severity of clinical condition at baseline was associated with all measures of both objective and subjective dimensions of social support. Longer durations of illness were related to less frequent family contact, reduced emotional closeness to network members and less security within social networks. Duration of illness was not, however, associated with the size of social network, frequency of contact with friends or the availability of at least one confidante. Clinicians considered those individuals who had been ill the longest to have more and better support.

Objective Social Support and Subjective Social Support

Each of the objective dimensions of social support was significantly associated with each of the subjective dimensions of social support in this study. The objectively measured structural, interactional and functional characteristics of participants' social networks were related to participants' perceptions of both the provision and receipt of support and the presence or absence of at least one confidante. Participants who reported having more social support and who were rated by their clinicians as having more and better social network functioning, likewise felt more satisfied with the quality of their networks. One study selected for the literature review reported a significant, inverse relationship between the two dimensions (McCormick, 1999), but both internal and external validity of this study are questionable due to important methodological weaknesses discussed earlier in the critical analysis of the reviewed literature. Another selected study (Brunt & Hansson, 2002) reported an inverse, though not significant, association between the two dimensions of social support. Unfortunately, the external validity of this study is also weak due to several methodological weaknesses. It is thus difficult to compare results from these studies and those from the current study in any meaningful way. The literature generally suggests that larger social networks (i.e., OSS) are not necessarily associated with better network function or with more reciprocity in relationships (i.e., SSS; Kawachi & Berkman, 2001; Macdonald et al., 1998; and Pickens, 2003). The two dimensions require much more precise operationalization and empirical examination in order to understand their relationship, particularly among those with SMPI.

Baseline Clinical Condition and Outcomes

Participants who were more severely disabled by their illness and required more frequent services at baseline were still functioning at a lower level than their peers at the end of the study period and reported lower QoL. This finding was demonstrated in bivariate analyses and supported in multivariate analyses. The more severely ill a participant was at baseline, the lower QoL the participant reported at outcome, and the lower levels of functioning at outcome, after accounting for age, gender, diagnosis and social support.

However, participants who had been ill for more years at baseline were not significantly different from their study peers either in their QoL or in their level of functioning at outcome, after accounting for age, gender, diagnosis and social support.

Social Support and Outcomes: Hypothesis 1

As predicted, both objective and subjective dimensions of social support were significantly associated with QoL and functioning. Participants who reported higher QoL and who were functioning at a higher level in the community at outcome likewise had larger, better functioning social support networks and more frequent contact with those networks, as well as greater perceived availability and provisions of social support. As described earlier, each of the objective dimensions of social support was associated with each of the subjective dimensions of social support. Therefore, it would seem these findings are consistent with studies that have shown an association between social support, as a whole, and life satisfaction and/or functioning (Brunt & Hansson, 2002; Caron et al., 1998; Bengtsson-Tops & Hansson, 2001). Again, these results offer evidence for the main-effects and stress-buffering models of social support.

OSS and QoL. Participants in the current study who had fewer people in their social network, less frequent contact with friends and family, and a poorly functioning social network experienced lower QoL. Individuals who were less satisfied with the quality of their lives had more difficulty in developing and maintaining friendships and less satisfying friendships with more disruptions. They also experienced more friction, discord and turmoil in their families, and had fewer people they could depend on for assistance when necessary.

This finding was supported in multivariate analyses that examined patient-rated OSS. Participants who reported higher numbers of contacts and/or more frequent contact with friends likewise reported higher life quality at outcome when age, gender, baseline clinical functioning, diagnosis, and their own perceptions of the availability of their social support were held constant.

As described earlier, the QoL variable in this study was a factor that comprised participants' perceptions of their life quality according to the importance they placed on nine dimensions including life satisfaction, occupational activities, psychological wellbeing, physical health, social relations, economics, activities of daily living, symptoms, and the patient's own goals. The QoL factor also included participants' health-related QoL and self-rated current perceived health status. Note that the QoL outcome measure included the domain, "social relations", which has some relation to social support. It is reasonable, then, that the correlation may be partly attributed to this endogenity (i.e., circularity) of the measure.

Positive correlations have previously been reported between OSS and QoL (Baker et al., 1992; Cohen et al., 2001; Corrigan & Buican, 1995; Lam & Rosenheck, 2000), yet there are also reports that OSS is not associated with factors that are closely linked to QoL (Macdonald et al., 1998; Nelson et al., 1992; Pickens, 2003). The two studies reviewed in the systematic literature review that examined the relationship between OSS and QoL reported no significant relationships (Graham-Bevan, 2006; McCormick, 1999). It would seem that the longitudinal design and large sample size of the current study, its increased objectivity in methods of recruitment, and the adjustments it made for the impact of other variables such as age, gender and diagnosis, provides increased confidence when assessing the link between OSS and QoL.

OSS and functioning. Participants in the current sample were generally functioning at a higher level relative to their peers in the community. They were generally well-adjusted to living in the community and were relatively competent socially. Even in this more highly functioning sample, at outcome, individuals who were functioning at a lower level also reported lower levels of OSS.

This finding was demonstrated in both bivariate and multivariate analyses. Participants who received higher ratings from their clinicians on objective dimensions of social support demonstrated higher levels of functioning at outcome when age, gender, baseline clinical functioning, diagnosis, and their own perceptions of social support provision were held constant. Likewise, participants rating themselves higher on objective dimensions of social support (i.e., count of contacts and frequency of contact with friends) demonstrated significantly better functioning when age, gender, baseline clinical functioning, diagnosis, and their own perceptions of subjective dimensions of their social support were held constant.

In the literature review for the current study, results were inconsistent among studies that reported on the relationship between OSS and functioning. One study reported that participants' social support positively correlated with their level of functioning (Bengtsson-Tops & Hansson, 2001). Another reported that full-scale social support at baseline was inversely associated with functioning at baseline (Brunt & Hansson, 2002), and a third reported that OSS did not predict functioning (Graham-Bevan, 2006). These inconsistent results may be due to several methodological weaknesses among these studies (as discussed earlier in the critical analysis of the reviewed literature), not least of which are the differing operational definitions of functioning used by the three sets of authors.

The finding that those participants who had less social support were functioning at a lower level at outcome is also consistent with the main effect theoretical model of social support, which proposes that integration into a social network provides a sense of predictability, purpose, belonging, security, and self-worth, characteristics which have been associated with better mental health (Cohen et al., 2000).

SSS and QoL. Participants who perceived themselves as receiving less social support and/or as providing less support in their relationships experienced lower QoL. Those who believed that they had less access to advice or tangible assistance, and felt less emotional closeness to members of their support network, likewise experienced lower life quality in general. Multivariate regressions supported these bivariate results. Participants who reported more positive perceptions of social support provisions also reliably reported higher QoL when age, gender, baseline clinical condition, diagnosis and any of the indicators of objective dimensions of social support were held constant.

This finding is in keeping with evidence already discussed that demonstrates the importance of the experience of social support on life quality (Cohen et al., 2001; Macdonald et al., 2000). Furthermore, all four of the reviewed studies that looked specifically at SSS and QoL, reported significant relationships between these two constructs (Bengtsson-Tops & Hansson, 2001; Caron et al., 1998; Graham-Bevan, 2006; McCormick, 1999).

SSS and functioning. Those participants who were functioning at a lower level amongst this highly functioning sample at outcome, also scored lower on SSS measures in that they felt less secure within their social networks and felt they had less available social support than their more highly functioning peers. In multivariate analysis, participants who reported more positive perceptions of social support provisions were more likely to demonstrate better functioning, holding constant age, gender, baseline clinical condition, diagnosis and either clinician ratings of objective dimensions of social support or patient ratings of the frequency of contact with their family. Similarly, holding the same variables constant, participants who reported greater availability of social support were more likely to demonstrate better functioning.

Little evidence is available on the relationship between SSS, alone, and the functioning of individuals with mental illness. Just one of the studies covered in the literature review reported on this relationship. Graham-Bevan (2006) used hierarchical regression (adjusting for gender and symptoms) and reported that SSS did not predict functioning, operationalized as community adaptation.

The finding that those who are less capable of functioning in the community likewise feel less secure within their social networks, less emotionally close to friends or family, and less assured of dependable assistance, provides evidence for the stress-buffering model of social support. The participants who were functioning the most poorly of the sample indicated having no one to confide in other than their clinician. As previously discussed, maladaptive responses to stressful events have been found to be reduced if people are available to talk to about problems (Cohen et al., 2000).

When is social support most predictive of QoL? Participants' sense of life satisfaction along the dimensions of physical health, psychological wellbeing and functional roles, tended to increase or decrease in accordance with social network variables. Participants who reported higher life satisfaction likewise had larger, better functioning social support networks and more frequent contact with those networks, as well as greater perceived availability and provisions of social support.

Of the three OSS variables, the one with the greatest predictive value for life satisfaction was the clinician-rated variable when considering bivariate analysis alone. In the multivariate analyses, however, clinician ratings of objective dimensions of social support and participant reports of the frequency of contact with their family were not significantly associated with QoL. Rather, participant ratings of objective dimensions of their own social support were shown to be most important in determining life quality at outcome. Participants reliably reported lower life satisfaction when they likewise reported lower numbers of contacts and/or less frequent contact with friends.

Of the two SSS variables, the one most predictive of life quality was the participants’ sense of the provision and receipt of social support. In both bivariate and multivariate analyses, participants providing more positive perceptions of the quality of their social support, likewise reliably reported higher life quality at outcome. Participant perceptions of the availability of their social support were not significantly related to life quality. This suggests that it is not the *availability* of social support, but the perceived *quality* of that social support, which predicts QoL among participants with SPMI.

It is also important to note that, in addition to participant ratings of subjective dimensions of their social support, it was their ratings of objective dimensions of their social support that were related to life quality. As discussed, these findings suggest that specific forms of OSS (i.e., participant ratings of objective aspects of their support system) and SSS (i.e., perceptions of social support provisions) are associated with QoL.

When comparing all social support variables, whether objective or subjective, the one most predictive of QoL was participants' perceptions of the provision and receipt of social support, once again emphasizing the importance of individuals' perception of the quality of their social support.

When is social support most predictive of functioning? Participant ratings of objective dimensions of their own social support were again shown to be the most important objective predictor for functioning, though clinician ratings of OSS also reliably predicted participant functioning. Participants who reported lower numbers of contacts and/or less frequent contact with friends reliably demonstrated lower levels of functioning at outcome.

More predictive of functioning at outcome, however, were the participants' perceptions of the provision and receipt of social support within their network. Once again, it is important to note that it is the participants' own ratings of dimensions of their social support that are most reliably associated with outcomes.

Social Support and Outcomes: Hypothesis 2

It was predicted that subjective dimensions of social support would influence the relationship between objective dimensions of social support and QoL or functioning, after adjusting for age, gender, level of psychopathology and diagnosis, and after adjusting for the main effects of OSS and SSS. Regression modelling of each pair of objective and subjective social support variables demonstrated that just one interaction significantly predicted QoL after adjusting for the other predictors, that of clinician-rated OSS and availability of SSS. Post hoc multiple regression analyses suggested that clinician-rated OSS was a significant predictor of QoL only for participants who rated social support availability as poor. Among participants who perceived themselves as having little or no social support, those who received less positive ratings from their clinicians on dimensions of OSS tended to report higher levels of QoL at outcome.

No study was located that specifically examined the interaction of OSS and SSS, and the effects of this interaction of QoL or functioning. Studies selected for the literature review have shown a relationship between SSS and life satisfaction and/or functioning (McCormick, 1999; Caron et al., 1998; Graham-Bevan, 2006; Bengtsson-Tops & Hansson, 2001) but not OSS and these outcome variables (McCormick, 1999; Graham-Bevan, 2006).

These findings suggest that there is agreement between clinicians and patients when there is little available social support yet satisfactory levels of QoL. This may indicate that there is a small subgroup of patients who are characterized by reclusiveness and isolation, yet who are satisfied with their lives.

Implications of the Key Findings

The finding that participants reliably report lower life satisfaction when they likewise report lower levels of each OSS and SSS provides good evidence for the relationship between social support and QoL in SPMI. As discussed earlier, previous research on this relationship has often provided contradictory results (Baker et al., 1992; Cohen et al., 2001; Corrigan & Buican, 1995; Corrigan & Phelan, 2004; Goldberg et al., 2003; Lam & Rosenheck, 2000; Lincoln, 2000; Macdonald et al., 1998; Nelson et al., 1992; Pickens, 2003; Yanos et al., 2001). Studies selected for the literature review likewise provide conflicting evidence (Bengtsson-Tops & Hansson, 2001; Brunt & Hansson, 2002; Caron et al., 1998; Graham-Bevan, 2006; and McCormick, 1999). The findings of the current study provide important evidence to strengthen the theory that is the perceptions of social support that matter most to QoL and functioning in SPMI. When considering objective ratings, it is again notable that the dimension of OSS that demonstrated the highest predictive value was that of participants' own ratings of their OSS. Again, this provides important evidence for the continued emphasis on patients' perceptions of their social support rather than external ratings of the social network of any patient.

Most importantly, evidence was provided for the significant role that social support plays in the QoL and functioning of individuals with SPMI. Evidence such as this must be considered when designing services for these individuals. Focus on building patients' networks may be included in treatment, rehabilitation, and recreational programming. In particular, life skills programming might extend to include instruction and support in building viable and reciprocal relationships. The findings of this study suggest that building a network of friends may be particularly important for adults with SPMI because they are less likely to have satisfactory family relationships.

As described, it is not the *availability* of social support, but the perceived *quality* of that social support, which predicts QoL among participants with SPMI. This suggests that the focus for interventions should be on the quality of relationships rather than the quantity of them. A greater quantity may actually be overwhelming for those who are more introverted and may provide more occasions for negative social interactions. Hence, interventions might focus on establishing and maintaining one or two mutually supportive friendships.

Additional evidence from the current study suggests one caveat to urging increased focus on relationship building. It would seem that it will be important for administrators, clinicians, and researchers to understand that those adults with SPMI who have few relationships may not *want* relationships, and may be satisfied with their isolated lives.

Study Strengths

Study Data

This study was a secondary analysis of data from a well-designed research study that collected detailed information on a large heterogeneous sample of people with SPMI, recruited from 70 clinical sites over a broad geographical area, over a period of approximately 17 months. The COMHS research study provided comprehensive data on QoL, community functioning, and objective and subjective social support variables.

Longitudinal Design

The longitudinal design of the COMHS Study allowed for measurement of the independent variable (social support, measured at an average of three months from baseline) prior to the measurement of outcome (QoL, both disease-specific and generic, measured at an average of 17 months from baseline). This design provided increased confidence when proposing causal direction. However, causality cannot be absolutely established: Seventeen months is a relatively short period in the life course of individuals, and social support and QoL parameters may have already been fixed for many participants by the time they entered the study.

Recruitment Objectivity

Trained study staff at baseline used a standard neuropsychiatric interview to confirm diagnoses among participants. Increasing objectivity in recruitment methods likewise increased generalizability of results. Note, though, that there was probably some selection bias operating, in that higher functioning individuals and females appeared to be more likely to participate.

Data Collection

All of the interviews were conducted by one person assigned to each of the three health care regions. Each of these individuals had clinical training, experience working in mental health, formal research training, and standardized training on the study instruments--all of which likely increased the reliability of the data collection.

Outcomes Measurement

The WQLI, used to measure QoL, was developed specifically for use in mental health settings with the SPMI population and provided a total score weighted by the relative importance to each participant of each of nine life domains. In this way, discrimination between individual variations in experiences, preferences and priorities were captured.

The MCAS was designed to measure the level of functioning of individuals with SPMI who live in the community. Inter-rater reliability, test-retest reliability, and internal consistency of the MCAS are reported to be relatively strong. All study staff underwent comprehensive standardized training to ensure consistency.

Adjustment for Intervening Variables

A review of the literature on the impact of age, gender and diagnosis on the relationships under study indicated that it was necessary to measure and adjust for these variables in the analyses.

Study Limitations

Observational Study

This was an observational study that focused on describing the social support among a cohort of adults with SPMI, as well as the relationships between dimensions of social support and health-related outcomes. As such, the results cannot be used to make firm causal inferences. However, study results provide useful descriptive information and highlight numerous areas for further research.

Choice of Social Support Instrument

The COMHS Study was an elaborately designed research program with the primary objective of describing continuity of care among adults with SPMI. Investigators weighed the importance of each of the rich collection of variables relative to the burden of participating in the study. As such, the instrument used for social support measurement was sufficiently comprehensive to provide compelling information on both objective and subjective dimensions of social support, yet lacked the ability to clarify some support characteristics such as the specific nature of relationships (e.g., spouse, friend, confidante, community), source of support, type of support available or potentially available, whether support is provided or received, and presence or absence of negative social support.

Additional Variables

The design of the current study did not include several variables that would have provided information important to the interpretation of social support analyses, i.e., participant marital status, living arrangement (e.g., with roommate), and employment status. This information was collected as part of the principal study but was not requested at the time the current study was designed.

Suggestions for Future Research

Future projects with the same data set might adjust for the three additional variables just described, i.e., marital status, living arrangement, and employment status. This would further refine the working definition of OSS, providing additional clarity to structural, interactional and functional aspects of objective dimensions of social support.

Gender was a significant predictor of both QoL and functioning in all of six regression analyses in the current study. Male participants experienced significantly higher QoL and functioning than female participants, holding age, severity of illness at baseline, diagnosis and social support constant. Similarly, depression was a significant predictor of functioning in three of the six regressions. Relative to participants diagnosed with psychosis, participants diagnosed with depression demonstrated significantly better functioning when age, gender, baseline clinical functioning and specific dimensions of social support under specific conditions of OSS and SSS. The same data set might also be used to further discriminate gender and diagnosis differences demonstrated when examining the relationship between social support and outcome variables.

It will be important to verify the findings demonstrating that there may be a small subgroup of patients who are satisfied with the quality of their lives, yet whose social character is reclusive and isolated. Clarification of the needs of this group would further inform program development. Though these individuals appear to be a small portion of the SPMI population, there may be significant therapeutic gains if the needs of this group are addressed in mental health services.

As described earlier, interventions to improve functioning through social support have had mixed success to date (Cohen et al., 2001; Hasson-Ohayon, Kravetz, Roe, Rozencwaig, & Weiser, 2006) and evaluations of social support intervention programs have had disappointing results (Thompson & Ontai, 2000). It will also be important to evaluate intervention methods to advance effective social support programming.

This study provided an opportunity for analysis of social support and QoL variables in a large, heterogeneous and geographically diverse sample. However, there is sufficient extant knowledge about social support to design more sophisticated interventions that are tailored to individual preferences and values, e.g., as just described, some individuals may be satisfied with little social support. Perhaps an examination of personality-based social variables (e.g., introversion/extraversion) would extend the knowledge base. Social support interventions should not be designed in isolation of critical supports for needs such as housing, vocational and/or meaningful activity, and primary care/wellness.

There is also an opportunity for more qualitative, in-depth research to understand aspects of close relationships that patients consider to exemplify ‘quality’ so that social support interventions can be more sophisticated.

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Appendix A

Abstract Assessment Form

Abstract:______ Lead author and year:____

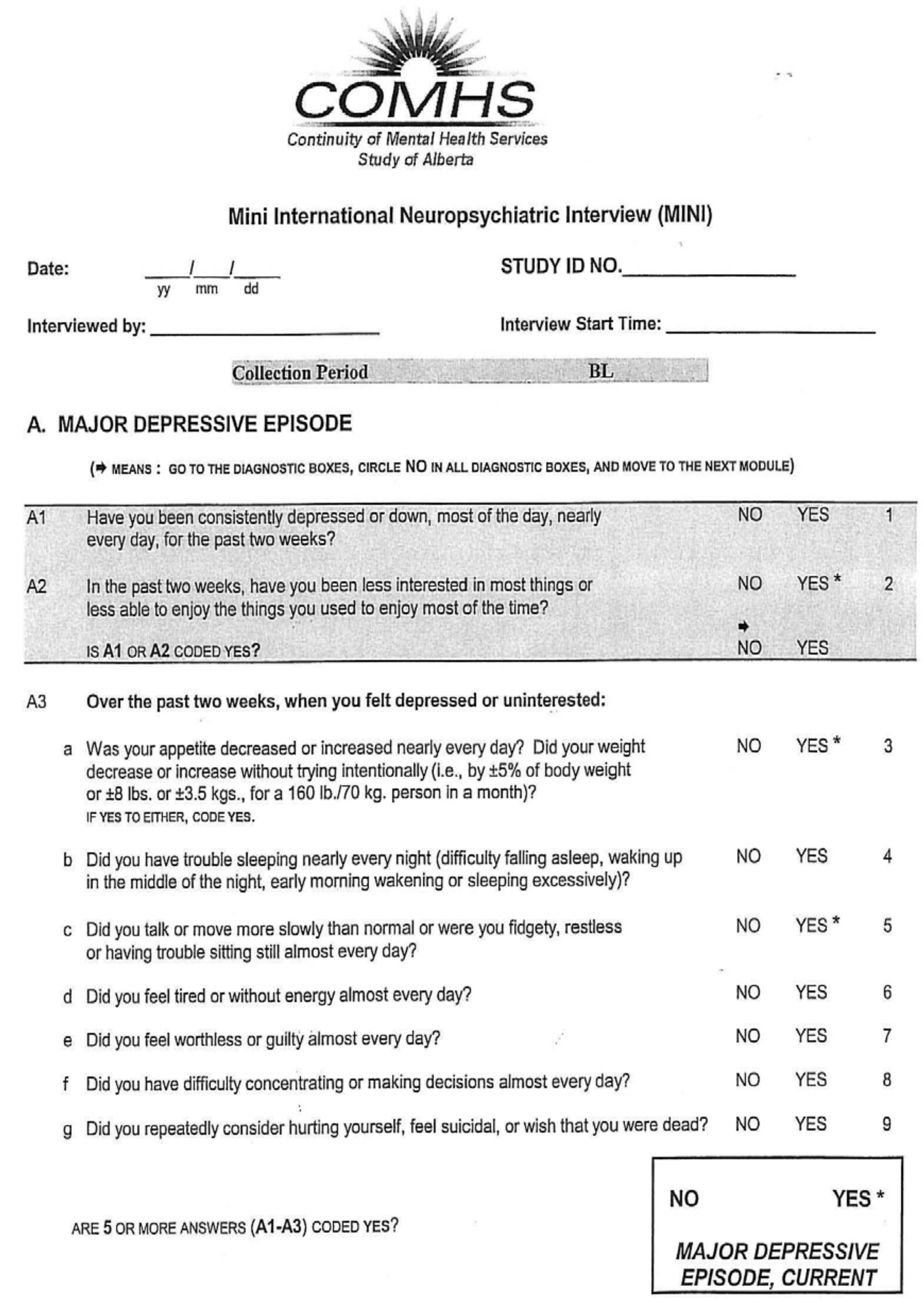
	NOT STATED	**YES**	**NO**
A. POPULATION			
Adults, 18-64.			
Severe and persistent mental illness.			
Systematic sample (generalizable).			
B. DESIGN			
Use of primary or secondary empirical data.			
Intervention or experiment.			
Observational.			
C. VARIABLES			
Specific measures of objective social support.			
Specific measures of subjective social support.			
Specific measures of quality of life.			
D. DATA ANALYSIS			
Statistical analysis of quantitative data.			

Comments:

Include in Literature Review: YES NO

Appendix B

Mini International Neuropsychiatric Interview (MINI)



COMHS
Continuity of Mental Health Services
Study of Alberta

Mini International Neuropsychiatric Interview (MINI)

Date: ____/____/____ (yy mm dd)

STUDY ID NO.__________________

Interviewed by: __________________________

Interview Start Time: ________________________

Collection Period **BL**

A. MAJOR DEPRESSIVE EPISODE

(➡ MEANS : GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE)

A1		Have you been consistently depressed or down, most of the day, nearly every day, for the past two weeks?	NO	YES	1
A2		In the past two weeks, have you been less interested in most things or less able to enjoy the things you used to enjoy most of the time?	NO	YES *	2
		IS **A1** OR **A2** CODED YES?	➡ NO	YES	
A3		**Over the past two weeks, when you felt depressed or uninterested:**			
	a	Was your appetite decreased or increased nearly every day? Did your weight decrease or increase without trying intentionally (i.e., by ±5% of body weight or ±8 lbs. or ±3.5 kgs., for a 160 lb./70 kg. person in a month)? IF YES TO EITHER, CODE YES.	NO	YES *	3
	b	Did you have trouble sleeping nearly every night (difficulty falling asleep, waking up in the middle of the night, early morning wakening or sleeping excessively)?	NO	YES	4
	c	Did you talk or move more slowly than normal or were you fidgety, restless or having trouble sitting still almost every day?	NO	YES *	5
	d	Did you feel tired or without energy almost every day?	NO	YES	6
	e	Did you feel worthless or guilty almost every day?	NO	YES	7
	f	Did you have difficulty concentrating or making decisions almost every day?	NO	YES	8
	g	Did you repeatedly consider hurting yourself, feel suicidal, or wish that you were dead?	NO	YES	9

ARE **5** OR MORE ANSWERS **(A1-A3)** CODED YES?

NO **YES ***

MAJOR DEPRESSIVE EPISODE, CURRENT

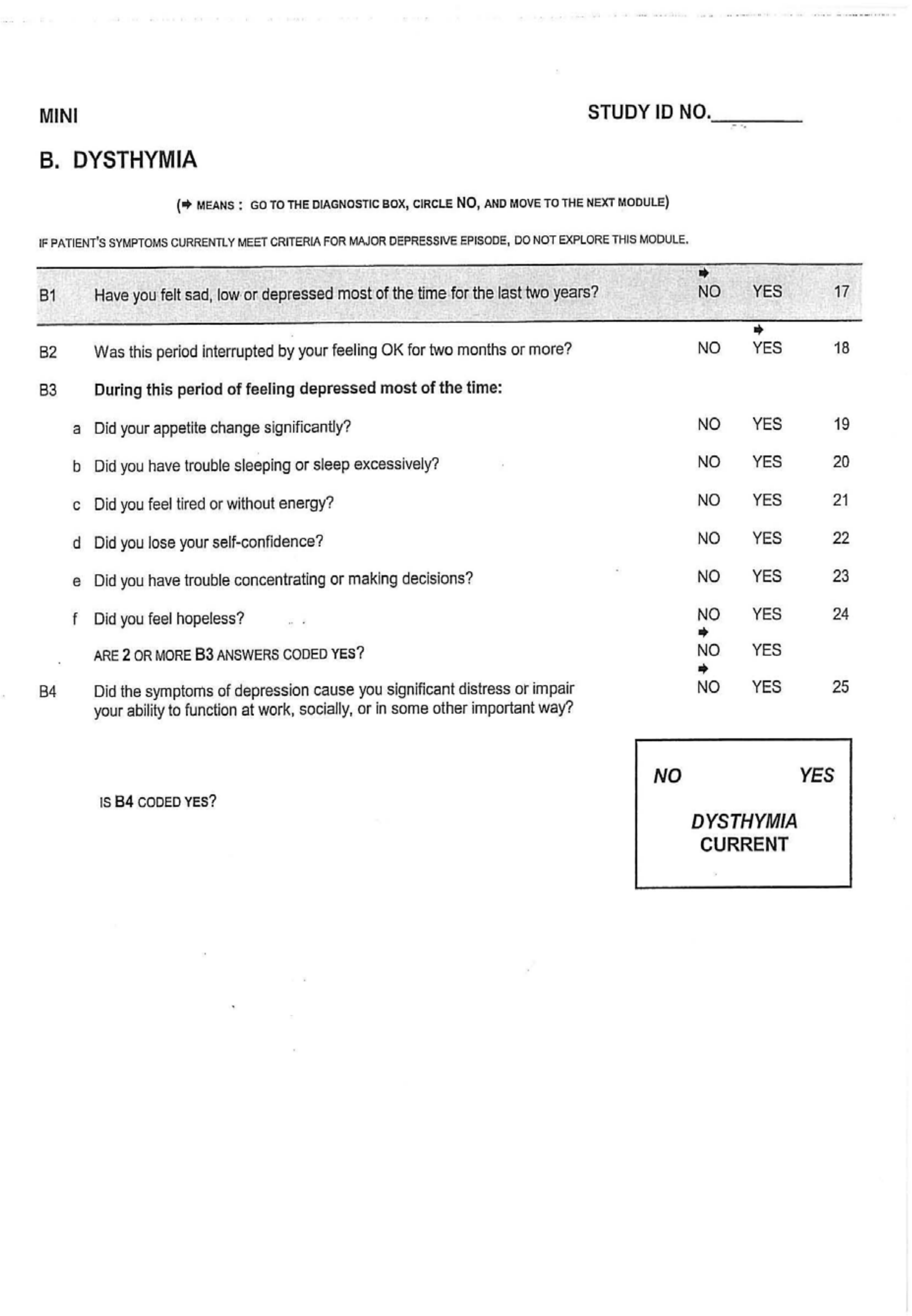
MINI **STUDY ID NO._________**

A. MAJOR DEPRESSIVE EPISODE **(cont'd)**

IF PATIENT HAS CURRENT MAJOR DEPRESSIVE EPISODE CONTINUE TO A4,
OTHERWISE MOVE TO MODULE B:

A4	a	During your lifetime, did you have other periods of two weeks or more when you felt depressed or uninterested in most things, and had most of the problems we just talked about?	➡ NO	YES	10
	b	Did you ever have an interval of at least 2 months without any depression and any loss of interest between 2 episodes of depression?	**NO**	**YES**	11

MAJOR DEPRESSIVE EPISODE, RECURRENT



MINI **STUDY ID NO.**_________

B. DYSTHYMIA

(➡ MEANS : GO TO THE DIAGNOSTIC BOX, CIRCLE NO, AND MOVE TO THE NEXT MODULE)

IF PATIENT'S SYMPTOMS CURRENTLY MEET CRITERIA FOR MAJOR DEPRESSIVE EPISODE, DO NOT EXPLORE THIS MODULE.

B1		Have you felt sad, low or depressed most of the time for the last two years?	➡ NO	YES	17
B2		Was this period interrupted by your feeling OK for two months or more?	NO	➡ YES	18
B3		**During this period of feeling depressed most of the time:**			
	a	Did your appetite change significantly?	NO	YES	19
	b	Did you have trouble sleeping or sleep excessively?	NO	YES	20
	c	Did you feel tired or without energy?	NO	YES	21
	d	Did you lose your self-confidence?	NO	YES	22
	e	Did you have trouble concentrating or making decisions?	NO	YES	23
	f	Did you feel hopeless?	NO	YES	24
		ARE 2 OR MORE B3 ANSWERS CODED YES?	➡ NO	YES	
B4		Did the symptoms of depression cause you significant distress or impair your ability to function at work, socially, or in some other important way?	➡ NO	YES	25

IS B4 CODED YES?

NO ***YES***

DYSTHYMIA
CURRENT

MINI **STUDY ID NO._________**

C. SUICIDALITY

In the past month did you:

				Points
C1	Think that you would be better off dead or wish you were dead?	NO	YES	1
C2	Want to harm yourself?	NO	YES	2
C3	Think about suicide?	NO	YES	6
C4	Have a suicide plan?	NO	YES	10
C5	Attempt suicide?	NO	YES	10
	In your lifetime:			
C6	Did you ever make a suicide attempt?	NO	YES	4

IS AT LEAST 1 OF THE ABOVE CODED YES?

IF YES, ADD THE TOTAL NUMBER OF POINTS FOR THE ANSWERS (C1-C6) CHECKED 'YES' AND SPECIFY THE LEVEL OF SUICIDE RISK AS FOLLOWS:

NO **YES**

SUICIDE RISK CURRENT

1-5 points	Low	π
6-9 points	Moderate	π
≥ 10 points	High	π

MINI **STUDY ID NO._________**

D. (HYPO) MANIC EPISODE

(➡ MEANS : GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE)

D1	a	Have you **ever** had a period of time when you were feeling 'up' or 'high' or so full of energy or full of yourself that you got into trouble, or that other people thought you were not your usual self? (Do not consider times when you were intoxicated on drugs or alcohol.) IF PATIENT IS PUZZLED OR UNCLEAR ABOUT WHAT YOU MEAN BY 'UP' OR 'HIGH', CLARIFY AS FOLLOWS: By 'up' or 'high' I mean: having elated mood; increased energy; needing less sleep; having rapid thoughts; being full of ideas; having an increase in productivity, motivation, creativity, or impulsive behavior. IF YES:	NO	YES	1
	b	Are you currently feeling 'up' or 'high' or full of energy?	NO	YES	2
D2	a	Have you **ever** been persistently irritable, for several days, so that you had arguments or verbal or physical fights, or shouted at people outside your family? Have you or others noticed that you have been more irritable or over reacted, compared to other people, even in situations that you felt were justified? IF YES:	NO	YES	3
	b	Are you currently feeling persistently irritable?	NO	YES	4
		IS **D1a** OR **D2a** CODED YES?	➡ NO	YES	
D3		IF **D1b** OR **D2b** = YES: EXPLORE ONLY **CURRENT** EPISODE IF **D1b** AND **D2b** = NO: EXPLORE THE MOST SYMPTOMATIC **PAST** EPISODE **During the times when you felt high, full of energy, or irritable did you:**			
	a	Feel that you could do things others couldn't do, or that you were an especially important person?	NO	YES	5
	b	Need less sleep (for example, feel rested after only a few hours sleep)?	NO	YES	6
	c	Talk too much without stopping, or so fast that people had difficulty understanding?	NO	YES	7
	d	Have racing thoughts?	NO	YES	8
	e	Become easily distracted so that any little interruption could distract you?	NO	YES	9
	f	Become so active or physically restless that others were worried about you?	NO	YES	10
	g	Want so much to engage in pleasurable activities that you ignored the risks or consequences (for example, spending sprees, reckless driving, or sexual indiscretions)?	NO	YES	11
		ARE **3** OR MORE **D3** ANSWERS CODED **YES** (OR **4** OR MORE IF **D1a** IS NO (IN RATING PAST EPISODE) OR IF **D1b** IS NO (IN RATING CURRENT EPISODE)) ?	➡ NO	YES	

D. (HYPO) MANIC EPISODE (cont'd)

		NO	YES	
D4	Did these symptoms last at least a week **and** cause significant problems at home, at work, socially, or at school, **or** were you hospitalized for these problems?	NO	YES	12
		↓	↓	
	THE EPISODE EXPLORED WAS A:	π *HYPOMANIC EPISODE*	π *MANIC EPISODE*	

IS **D4** CODED **NO**?

SPECIFY IF THE EPISODE IS CURRENT OR PAST.

NO	**YES**
HYPOMANIC EPISODE	
CURRENT	π
PAST	π

IS **D4** CODED YES?

SPECIFY IF THE EPISODE IS CURRENT OR PAST.

NO	**YES**
MANIC EPISODE	
CURRENT	π
PAST	π

MINI STUDY ID NO.__________

J. ALCOHOL ABUSE AND DEPENDENCE

(➡ MEANS : GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE)

J1		**In the past 12 months**, have you had 3 or more alcoholic drinks within a 3 hour period on 3 or more occasions?	➡ NO	YES	1
J2		**In the past 12 months:**			
	a	Did you need to drink more in order to get the same effect that you got when you first started drinking?	NO	YES	2
	b	When you cut down on drinking did your hands shake, did you sweat or feel agitated? Did you drink to avoid these symptoms or to avoid being hungover, for example, "the shakes", sweating or agitation? IF YES TO EITHER, CODE YES.	NO	YES	3
	c	During the times when you drank alcohol, did you end up drinking more than you planned when you started?	NO	YES	4
	d	Have you tried to reduce or stop drinking alcohol but failed?	NO	YES	5
	e	On the days that you drank, did you spend substantial time in obtaining alcohol, drinking, or in recovering from the effects of alcohol?	NO	YES	6
	f	Did you spend less time working, enjoying hobbies, or being with others because of your drinking?	NO	YES	7
	g	Have you continued to drink even though you knew that the drinking caused you health or mental problems?	NO	YES	8
		ARE 3 OR MORE **J2** ANSWERS CODED **YES**?	**NO**	➡ **YES** ***ALCOHOL DEPENDENCE* CURRENT**	
J3		**In the past 12 months:**			
	a	Have you been intoxicated, high, or hung over more than once when you had other responsibilities at school, at work, or at home? Did this cause any problems? (CODE YES ONLY IF THIS CAUSED PROBLEMS.)	NO	YES	9
	b	Were you intoxicated in any situation where you were physically at risk, for example, driving a car, riding a motorbike, using machinery, boating, etc.?	NO	YES	10
	c	Did you have any legal problems because of your drinking, for example, an arrest or disorderly conduct?	NO	YES	11
	d	Did you continue to drink even though your drinking caused problems with your family or other people?	NO	YES	12

STUDY ID NO.__________

ALCOHOL ABUSE AND DEPENDENCE (cont'd)

ARE **1** OR MORE **J3** ANSWERS CODED **YES**?

NO	**YES**

ALCOHOL ABUSE
CURRENT

MINI STUDY ID NO.__________

K. NON-ALCOHOL PSYCHOACTIVE SUBSTANCE USE DISORDERS

(➡ MEANS : GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE)

Now I am going to show you / read to you a list of street drugs or medicines.

			➡	
K1	a	**In the past 12 months**, did you take any of these drugs more than once, to get high, to feel better, or to change your mood?	NO	YES

CIRCLE EACH DRUG TAKEN:

Stimulants: amphetamines, "speed", crystal meth, "rush", Dexedrine, Ritalin, diet pills.

Cocaine: snorting, IV, freebase, crack, "speedball".

Narcotics: heroin, morphine, Dilaudid, opium, Demerol, methadone, codeine, Percodan, Darvon.

Hallucinogens: LSD ("acid"), mescaline, peyote, PCP ("Angel Dust", "peace pill"), psilocybin, STP, "mushrooms", ecstasy, MDA, or MDMA.

Inhalants: "glue", ethyl chloride, nitrous oxide ("laughing gas"), amyl or butyl nitrate ("poppers").

Marijuana: hashish ("hash"), THC, "pot", "grass", "weed", "reefer".

Tranquilizers: quaalude, Seconal ("reds"), Valium, Xanax, Librium, Ativan, Dalmane, Halcion, barbiturates, Miltown.

Miscellaneous: steroids, nonprescription sleep or diet pills. Any others?

SPECIFY MOST USED DRUG(S): ____

	CHECK ONE BOX
ONLY ONE DRUG / DRUG CLASS HAS BEEN USED	☐
ONLY THE MOST USED DRUG CLASS IS INVESTIGATED.	☐
EACH DRUG CLASS USED IS EXAMINED SEPARATELY (PHOTOCOPY K2 AND K3 AS NEEDED)	☐

b SPECIFY WHICH DRUG/DRUG CLASS WILL BE EXPLORED IN THE INTERVIEW BELOW IF THERE IS CONCURRENT OR SEQUENTIAL POLYSUBSTANCE USE:______________________________

K2 **Considering your use of (NAME THE DRUG / DRUG CLASS SELECTED), in the past 12 months:**

a	Have you found that you needed to use more (NAME OF DRUG / DRUG CLASS SELECTED) to get the same effect that you did when you first started taking it?	NO	YES	1
b	When you reduced or stopped using (NAME OF DRUG / DRUG CLASS SELECTED), did you have withdrawal symptoms (aches, shaking, fever, weakness, diarrhea, nausea, sweating, heart pounding, difficulty sleeping, or feeling agitated, anxious, irritable, or depressed)? Did you use any drug(s) to keep yourself from getting sick (withdrawal symptoms) or so that you would feel better? IF YES TO EITHER, CODE YES.	NO	YES	2

NON-ALCOHOL PSYCHOACTIVE SUBSTANCE USE DISORDERS (cont'd)

	c	Have you often found that when you used (NAME OF DRUG / DRUG CLASS SELECTED), you ended up taking more than you thought you would?	NO	YES	3
	d	Have you tried to reduce or stop taking (NAME OF DRUG / DRUG CLASS SELECTED) but failed?	NO	YES	4
	e	On the days that you used (NAME OF DRUG / DRUG CLASS SELECTED), did you spend substantial time (>2 HOURS), obtaining, using or in recovering from the drug, or thinking about the drug?	NO	YES	5
	f	Did you spend less time working, enjoying hobbies, or being with family or friends because of your drug use?	NO	YES	6
	g	Have you continued to use (NAME OF DRUG / DRUG CLASS SELECTED), even though it caused you health or mental problems?	NO	YES	7

ARE **3** OR MORE **K2** ANSWERS CODED **YES**?

SPECIFY DRUG(S): ____________________________________

➡

NO **YES**

SUBSTANCE DEPENDENCE
CURRENT

Considering your use of (NAME THE DRUG CLASS SELECTED), in the past 12 months:

K3	a	Have you been intoxicated, high, or hung over from (NAME OF DRUG / DRUG CLASS SELECTED) more than once, when you had other responsibilities at school, at work, or at home? Did this cause any problem? (CODE **YES** ONLY IF THIS CAUSED PROBLEMS.)	NO	YES	8
	b	Have you been high or intoxicated from (NAME OF DRUG / DRUG CLASS SELECTED) in any situation where you were physically at risk (for example, driving a car, riding a motorbike, using machinery, boating, etc.)?	NO	YES	9
	c	Did you have any legal problems because of your drug use, for example, an arrest or disorderly conduct?	NO	YES	10
	d	Did you continue to use (NAME OF DRUG / DRUG CLASS SELECTED), even though it caused problems with your family or other people?	NO	YES	11

ARE **1** OR MORE **K3** ANSWERS CODED **YES**?

SPECIFY DRUG(S): ______________________________

NO **YES**

SUBSTANCE ABUSE
CURRENT

MINI **STUDY ID NO.________**

L. PSYCHOTIC DISORDERS

ASK FOR AN EXAMPLE OF EACH QUESTION ANSWERED POSITIVELY. CODE **YES** ONLY IF THE EXAMPLES CLEARLY SHOW A DISTORTION OF THOUGHT OR OF PERCEPTION OR IF THEY ARE NOT CULTURALLY APPROPRIATE. BEFORE CODING, INVESTIGATE WHETHER DELUSIONS QUALIFY AS "BIZARRE".

DELUSIONS ARE "BIZARRE" IF: CLEARLY IMPLAUSIBLE, ABSURD, NOT UNDERSTANDABLE, AND CANNOT DERIVE FROM ORDINARY LIFE EXPERIENCE.

HALLUCINATIONS ARE SCORED "BIZARRE" IF: A VOICE COMMENTS ON THE PERSON'S THOUGHTS OR BEHAVIOR, OR WHEN TWO OR MORE VOICES ARE CONVERSING WITH EACH OTHER.

		Now I am going to ask you about unusual experiences that some people have.			BIZARRE	
L1	a	Have you ever believed that people were spying on you, or that someone was plotting against you, or trying to hurt you? NOTE: ASK FOR EXAMPLES TO RULE OUT ACTUAL STALKING.	NO	YES	YES	1
	b	IF YES: do you currently believe these things?	NO	YES	YES ➡L6	2
L2	a	Have you ever believed that someone was reading your mind or could hear your thoughts, or that you could actually read someone's mind or hear what another person was thinking?	NO	YES	YES	3
	b	IF YES: do you currently believe these things?	NO	YES	YES ➡L6	4
L3	a	Have you ever believed that someone or some force outside of yourself put thoughts in your mind that were not your own, or made you act in a way that was not your usual self? Have you ever felt that you were possessed? CLINICIAN: ASK FOR EXAMPLES AND DISCOUNT ANY THAT ARE NOT PSYCHOTIC.	NO	YES	YES	5
	b	IF YES: do you currently believe these things?	NO	YES	YES ➡L6	6
L4	a	Have you ever believed that you were being sent special messages through the TV, radio, or newspaper, or that a person you did not personally know was particularly interested in you?	NO	YES	YES	7
	b	IF YES: do you currently believe these things?	NO	YES	YES ➡L6	8
L5	a	Have your relatives or friends ever considered any of your beliefs strange or unusual? INTERVIEWER: ASK FOR EXAMPLES. ONLY CODE YES IF THE EXAMPLES ARE CLEARLY DELUSIONAL IDEAS NOT EXPLORED IN QUESTIONS L1 TO L4, FOR EXAMPLE, SOMATIC OR RELIGIOUS DELUSIONS OR DELUSIONS OF GRANDIOSITY, JEALOUSY, GUILT, RUIN OR DESTITIUTION, ETC.	NO	YES	YES	9
	b	IF YES: do they currently consider your beliefs strange?	NO	YES	YES	10
L6	a	Have you ever heard things other people couldn't hear, such as voices? HALLUCINATIONS ARE SCORED "BIZARRE" ONLY IF PATIENT ANSWERS YES TO THE FOLLOWING:	NO	YES		11
		IF YES: Did you hear a voice commenting on your thoughts or behavior or did you hear two or more voices talking to each other?			YES	
	b	IF YES: have you heard these things in the past month?	NO	YES	YES ➡L8b	12

PSYCHOTIC DISORDERS (cont'd)

L7	a	Have you ever had visions when you were awake or have you ever seen things other people couldn't see? CLINICIAN: CHECK TO SEE IF THESE ARE CULTURALLY INAPPROPRIATE.	NO	YES	13
	b	IF YES: have you seen these things in the past month?	NO	YES	14
		CLINICIAN'S JUDGMENT			
L8	b	IS THE PATIENT CURRENTLY EXHIBITING INCOHERENCE, DISORGANIZED SPEECH, OR MARKED LOOSENING OF ASSOCIATIONS?	NO	YES	15
L9	b	IS THE PATIENT CURRENTLY EXHIBITING DISORGANIZED OR CATATONIC BEHAVIOR?	NO	YES	16
L10	b	ARE NEGATIVE SYMPTOMS OF SCHIZOPHRENIA, E.G. SIGNIFICANT AFFECTIVE FLATTENING, POVERTY OF SPEECH (ALOGIA) OR AN INABILITY TO INITIATE OR PERSIST IN GOAL-DIRECTED ACTIVITIES (AVOLITION), PROMINENT DURING THE INTERVIEW?	NO	YES	17

L11 ARE 1 OR MORE « b » QUESTIONS CODED **YES BIZARRE**?

OR

ARE 2 OR MORE « b » QUESTIONS CODED **YES** (RATHER THAN **YES BIZARRE**)?

NO **YES**

PSYCHOTIC DISORDER
CURRENT

L12 ARE 1 OR MORE « a » QUESTIONS CODED **YES BIZARRE**?

OR

ARE 2 OR MORE « a » QUESTIONS CODED **YES** (RATHER THAN **YES BIZARRE**)?

CHECK THAT THE TWO SYMPTOMS OCCURRED DURING THE SAME TIME PERIOD.

OR IS L11 CODED **YES**?

18

NO **YES**

PSYCHOTIC DISORDER
LIFETIME

PSYCHOTIC DISORDERS (cont'd)

L13 a ARE 1 OR MORE « b » QUESTIONS FROM L1b TO L7b CODED YES AND IS EITHER:

MAJOR DEPRESSIVE EPISODE, (CURRENT)
OR
MANIC EPISODE, (CURRENT OR PAST) CODED YES?

➧ NO YES

b You told me earlier that you had period(s) when you felt (depressed/high/persistently irritable).
Were the beliefs and experiences you just described (SYMPTOMS CODED YES FROM L1b TO L7b)
restricted exclusively to times when you were feeling depressed/high/irritable?

19
NO **YES**

MOOD DISORDER WITH
PSYCHOTIC FEATURES
CURRENT

End Time of Interview ____________ **Interview Time Elapsed**______________

/MINI Jan 23

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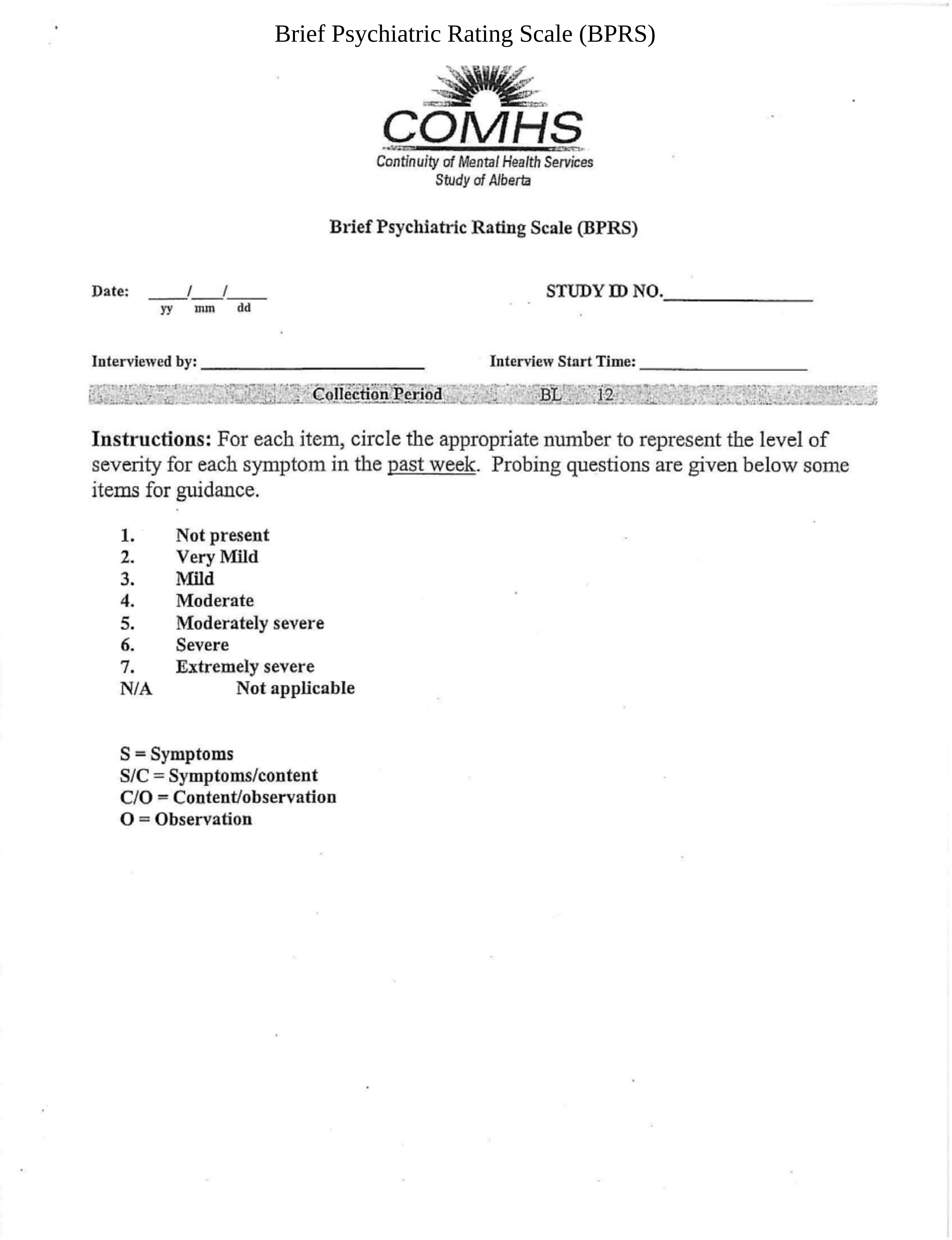
D. Sheehan

Appendix C

Brief Psychiatric Rating Scale (BPRS)



COMHS
Continuity of Mental Health Services
Study of Alberta

Brief Psychiatric Rating Scale (BPRS)

Date: ____/____/____
yy mm dd

STUDY ID NO.________________

Interviewed by: ________________________

Interview Start Time: __________________

Collection Period BL 12

Instructions: For each item, circle the appropriate number to represent the level of severity for each symptom in the past week. Probing questions are given below some items for guidance.

1. Not present
2. Very Mild
3. Mild
4. Moderate
5. Moderately severe
6. Severe
7. Extremely severe
N/A Not applicable

S = Symptoms
S/C = Symptoms/content
C/O = Content/observation
O = Observation

1. **Somatic Concern:** The **severity of the physical complaints** should be rated solely on **the number and nature of complaints or fears of bodily illness or malfunction, or suspiciousness of them, alleged during the interview period.** Worry and concern over physical health is the basis for rating somatic concerns. No consideration of the probability of true organic basis for the complaints is required. Only the frequency and diversity of complaints are rated.

2. **Anxiety:** Rating of degree of anxiety (worry, over concern, apprehension, or fear) should be based **upon verbal responses reporting such subject experience** on the part of the client. Care should be taken to exclude from consideration in rating anxiety the physical signs, which are included in the concept of tension, as defined in the BPRS. The sincerity of the report and the strength of the experiences as indicated by the involvement of the client may be important in evaluating the degree of anxiety.

3. **Depression:** Include only the **affective** component of depression. It should be **rated on the basis of expression of discouragement, pessimism, sadness**, hopelessness, helplessness, and gloomy thema. Facial expression, weeping, moaning, and other modes of communication should be considered, but motor retardation, guilt, and somatic complaints, which are commonly associated with the psychiatric syndrome of depression, should not be considered in rating depressive mood.

4. **Guilt:** The strength of guilt feelings should be judged from **the frequency and intensity of reported experience of remorse for past behavior** as well as expressed degree of involvement. Care should be exercised not to infer guilt feelings from signs of depression or generalize anxiety. Guilt feelings related to **specific past behavior**, which the client now believes to have been wrong and the memory of which is a source of conscious concern.

5. **Suicidality: Expressed desire, intent or actions** to harm or kill oneself. Has felt as though life is not worth living, or felt like ending it all. If reports suicidal ideation, does the client have a specific plan?

6. **Grandiosity:** Reported feeling of unusual ability, power, wealth, importance, or superiority. The degree of pathology should be **rated relative to the discrepancy between self-appraisal and reality**. The verbal report of the client and not his demeanor in the interview situation should provide the primary basis for evaluation of grandiosity. Care should be taken not to infer grandiosity from suspicions of persecution or from other unfounded beliefs, which no explicit reference to personal superiority as the basis for persecution has been elicited. Rating should be based upon opinion currently held by the client, even though the unfounded superiority may be claimed to have existed in the past.

BPRS **STUDY ID NO.** ________________

1) Somatic Concerns (S) –	1	2	3	4	5	6	7	N/A

a) Have you been concerned about your physical health in the past week?
b) Have you had any physical illness or seen a medical doctor lately?
c) What does s/he say is wrong?
d) Has anything about your health interfered with your ability to perform your daily activities?
e) Did you ever feel that parts of your body had changed or stopped working properly?

2) Anxiety (S) –	1	2	3	4	5	6	7	N/A

a) Have you been worried at all during the past week?
b) What do you worry about?
c) Have you felt nervous or frightened?
d) Do you find yourself worrying about things like money or the future?
e) When you are feeling nervous, do your palms sweat, or your heart race?
f) How often do you feel this way?
g) How much of the time have you been (use respondent's description of anxiety)?
h) Does it interfere with your usual activities?

3) Depression (S) –	1	2	3	4	5	6	7	N/A

a) What has your mood been like in the past week?
b) Have you felt depressed, sad or down in the dumps?
c) Do you find you've lost interest in things you used to enjoy, like being with friends or watching TV?
d) How long do these sad feelings last?
e) Do they make it difficult for you to do your usual activities?
f) When you feel like that, are you able to stop and think of happier things when you want to?

4) Guilt (S) –	1	2	3	4	5	6	7	N/A

a) In the past week, is there anything you feel guilty about, or feel ashamed of?
b) Do you tend to blame yourself for things that have happened in the past?
c) How often have you been thinking about this?
d) Does it interfere with your usual activities?
e) Have you told anyone else about these feelings?

5) Suicidality (S) –	1	2	3	4	5	6	7	N/A

a) Have you felt that life wasn't worth living?
b) Have you thought about harming or killing yourself?
c) Have you felt tired of living or as though you would be better off dead?
d) Have you ever felt like ending it all?
e) How often have you thought about (use patient's description of suicide?)
f) Did you (Do you) have a specific plan?

6) Grandiosity (S) –	1	2	3	4	5	6	7	N/A

a) In the past week, did you often feel superior or special compared to other people?
b) Do you think you have any special abilities or powers?
c) What are they?
d) In the past week, have you thought that you might be somebody rich or famous?
e) Have you told anyone else about this, or acted on these ideas?

1– Not present, 2– Very mild, 3– Mild, 4– Moderate, 5– Moderately severe, 6– Severe, 7– Extremely severe, N/A– Not applicable

7. Elevated Mood: A pervasive, sustained and exaggerated feeling of well-being, cheerfulness, **euphoria**, optimism that is out of proportion to the circumstances.

8. Suspiciousness: Designates a wide range of mental experience in which the client believes to have been wronged by another person or believes that another person has, or has had, intent to wrong. Since no information is usually available as a basis for evaluating the objectivity or the more plausible suspicions, the term 'accusation' might be the degree to which the client tends to project blame and to accuse other people or forces of maliciousness or discriminatory intent. The pathology in this symptom area **may range from mild suspiciousness through delusions of persecution and ideas of reference.**

9. Hostility: Refers to reported feelings of animosity, belligerence, contempt, or hatred **toward other people outside the interview situation**. The rater can attend to the sincerity and affect present when client reports such experiences. It should be noted that evidence of hostility toward the interviewer in the interview situation should be rated on the uncooperativeness scale and should not be considered in rating hostility as defined here.

10. Hallucinations: This rating requires judgment on the part of the rater whether the reported experience represents **hallucination** or merely vivid mental imagery. In general, unless the rater is quite convinced that the experiences represent true deviation from normal perceptual and imagery processes, hallucinatory behavior should be rated as *not present.*

11. Unusual Thought Content: Refers to the **content of the clients verbalization**; the extent to which it **is unusual, odd, strange, or bizarre**. Unbelievable ideas may be presenting in a perfectly straightforward, clear, and organized fashion. Only the unusualness of content should be rated for this item, not the degree of organization or disorganization.

12. Bizarre Behavior: Reports of behaviors, which are odd, unusual or psychotically criminal. Not limited to interview period. Include inappropriate sexual behavior and inappropriate affect.

BPRS **STUDY ID NO.** ______________

7) Elevated Mood (S) – 1 2 3 4 5 6 7 N/A

a) Have you felt so good or high that other people thought that you were not your normal self?
b) Have you been feeling cheerful and "on top of the world" without any reason?
c) Did it seem like more than just feeling good?
d) How long did it last?

8) Suspiciousness (S) – 1 2 3 4 5 6 7 N/A

a) Do you feel uncomfortable in public?
b) Does it seem as though others are watching you?
c) Are you concerned about anyone's intentions toward you?
d) Is anyone going out of their way to give you a hard time, or trying to hurt you?
e) Do you feel in any danger?
f) How often have you been concerned that (use consumer's description)?

9) Hostility (S) – 1 2 3 4 5 6 7 N/A

a) In the past week, how have you been getting along with others?
b) Do you find you've been unusually grumpy, or easily irritated by other people?
c) How do you show it?
d) In the past week have you found you've been losing your temper or getting so irritable that you shout at others, start arguments or get into fights?
e) Have you hit anyone in the past week?

10) Hallucinations (S/O) – 1 2 3 4 5 6 7 N/A

a) Some people say they can hear noises or voices when no one else is around.
b) Has this happened to you in the past week?
c) (If hears voices...) What do the voices say?
d) In the past week, did you ever have visions or see things that others do not see?
e) Did you smell any strange odors that others don't smell?
f) (If yes to any hallucinations . . .) How do you explain these things?
g) How often did you experience these (use respondent's description of hallucinations)?
h) Have these experiences made it difficult to go about your usual routine?

11) Unusual Thought Content (C) – 1 2 3 4 5 6 7 N/A

a) In the past week, did you ever feel that someone/something could control your thoughts/behaviors, or that someone could read your mind?
b) Have you been receiving any special messages from people/objects around you?
c) Have you seen references to yourself on TV or in newspapers in the past week?
d) Is anything like electricity or radio waves affecting you?
e) Are thoughts being put in your head that are not your own?
f) How often do these strange things happen to you?

12) Bizarre Behaviour (C/O) – 1 2 3 4 5 6 7 N/A

a) Have you done anything that has attracted the attention of others?
b) Have you done anything that could have gotten you into trouble with the police?
c) Have you done anything that seemed unusual or disturbing to others?

1– Not present, 2– Very mild, 3– Mild, 4– Moderate, 5– Moderately severe, 6– Severe, 7– Extremely severe,
N/A– Not applicable

13. **Self Neglect: Hygiene**, appearance or eating behavior below usual expectations, below socially acceptable standards, or **life threatening**.

14. **Disorientation:** Allows recording the particular kind of confusion that is **evidenced by lack of memory or proper association for person, places, or times**. The disoriented person may not know where he is, how to relate where he is to other points in the environment, or how to get from one place to another.

15. **Conceptual Disorganization**: Evidenced by confusion, irrelevance, inconsistency, disconnectedness, disjointedness, blocking, confabulation, autism, and unusual chain of associating. Ratings should be based upon the client's **spontaneous response sequence**, which are likely to be elicited during the initial, nondirective portion of the interview. Attention to the facial expression of the patient during the verbal response may be helpful in evaluation of the degree of confusion or blocking.

16. **Uncooperativeness:** Represents signs of **hostility and resistance to the interviewer** and interview situation. It should be noted that "uncooperativeness" is judged on the basis of response of the client to the interview situation while "hostility" is rated on the basis of verbal reports and hostile feelings or behavior towards others *outside* the interview situation.

17. **Emotional Withdrawal:** This construct is defined solely in terms of **the ability of the patient to relate in the interpersonal interview situation**. It is represented by the feeling on the part of the rater that an invisible barrier exists between the patient and other persons in the interview situation. It is suspected that eyes, facial expression, voice quality, and lack of variability and expressive movements all enter into the evaluation of this important but nebulous quality of psychiatric clients.

18. **Blunted Affect:** Reduced emotional tone and apparent lack of normal intensity of feeling or involvement. Emotional expressions are apt to be absent or of marked indifference and apathy. Attempted expressions of feeling may appear to be mimetic and without sincerity.

19. **Excitement:** Refers to the emotional, mental, and psychological aspects of **increased activation and heightened reactivity**. The excited patient tends to be active, agitated, quick, loud, and emotionally responsive. Whereas tension is a construct concerned with physical or motor manifestations of activation, excitement is the underlying activation potential. The degree of excitement depends on the strength of arousal and heightened affect.

20. **Tension: Restricted to physical and motor signs** commonly associated with anxiety. **It does NOT involve the subjective experience or mental state of the clients and thus it more an objective observation**. In rating the degree of tension, the rater should attend to the number and nature of signs of abnormally heightened activation level such as nervousness, fidgeting, tremors, twitches, sweating, frequent changing of posture, hyper tonicity of movements, and heightened muscle tone.

21. **Motor Retardation:** Symptomatology is represented by behavior, which might be attributed to the loss of energy, and vigor necessary to perform voluntary acts in a normal manner. Voluntary acts, which are especially affected by **reduced energy level**, include those related to speech as well as gross muscular behavior. With increased motor retardation, **speech is slowed**, wakened in volume, and reduced in amount. **Voluntary movements are slowed**, weakened, and less frequent.

22. **Motor Hyperactivity:** Increase in the energy level evidenced by more frequent **movement and/or rapid speech**.

23. **Distractibility:** Degree to which observed sequences of speech and actions are **interrupted by stimuli** unrelated to interview. Distractibility is rated when client shows a change in the focus of attention or marked shift in gaze.

24. **Mannerisms and Posturing:** Includes the unusual and bizarre motor behavior by which a mentally ill person can often be identified in a crowd of normal people. **It is the unusualness, and not simply the amount of movement, which is to be rated**. Odd, indirect, repetitive movements or movements lacking normal coordination and integration are rated on this scale. Strained, distorted, abnormal posture and integration, which are maintained for extended periods, are rated. Grimaces, unusual movements of the lip, tongue, eyes and tics and twitches are all considered.

BPRS STUDY ID NO. ______________

13) Self-Neglect (S/O) – 1 2 3 4 5 6 7 N/A

a) How has your grooming been lately?
b) How often do you take showers?
c) Has anyone (parents/staff) complained about your grooming or dress?
d) Do you eat regular meals?

14) Disorientation (C/O) – 1 2 3 4 5 6 7 N/A

a) May I ask you some standard questions we ask everybody?
b) How old are you?
c) What is the date?
d) What is this place called?
e) What year were you born?
f) Who is the prime minister?

15) Conceptual Disorganization (O) – 1 2 3 4 5 6 7 N/A

16) Uncooperativeness (O) – 1 2 3 4 5 6 7 N/A

17) Emotional Withdrawal (O) – 1 2 3 4 5 6 7 N/A

18) Blunted Affect (O) – 1 2 3 4 5 6 7 N/A

19) Excitement (O) – 1 2 3 4 5 6 7 N/A

20) Tension (O) – 1 2 3 4 5 6 7 N/A

21) Motor Retardation (O) – 1 2 3 4 5 6 7 N/A

22) Motor Hyperactivity (O) – 1 2 3 4 5 6 7 N/A

23) Distractibility (O) – 1 2 3 4 5 6 7 N/A

24) Mannerisms/Posturing (O) – 1 2 3 4 5 6 7 N/A

End Time of Interview __________ **Interview Time Elapsed**____________

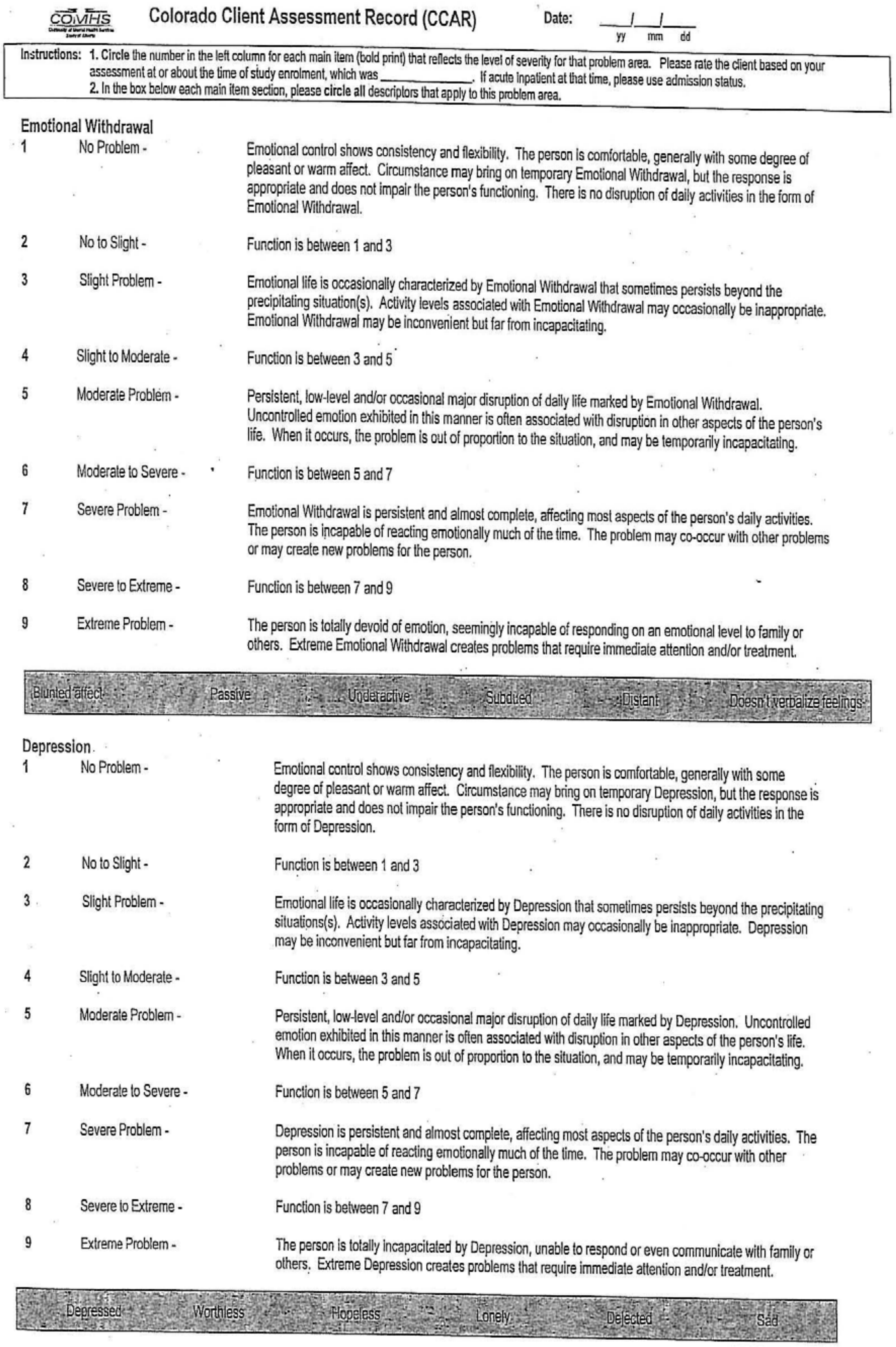
/COMHS Brief Psych. Rating Scale

Public Domain

1– Not present, 2– Very mild, 3– Mild, 4– Moderate, 5– Moderately severe, 6– Severe, 7– Extremely severe, N/A– Not applicable

Appendix D

Colorado Client Assessment Record (CCAR)



Colorado Client Assessment Record (CCAR)

Date: ____/____/____
yy mm dd

Instructions: **1. Circle** the number in the left column for each main item (bold print) that reflects the level of severity for that problem area. Please rate the client based on your assessment at or about the time of study enrolment, which was ______________. If acute inpatient at that time, please use admission status.
2. In the box below each main item section, please **circle all** descriptors that apply to this problem area.

Emotional Withdrawal

1	No Problem -	Emotional control shows consistency and flexibility. The person is comfortable, generally with some degree of pleasant or warm affect. Circumstance may bring on temporary Emotional Withdrawal, but the response is appropriate and does not impair the person's functioning. There is no disruption of daily activities in the form of Emotional Withdrawal.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Emotional life is occasionally characterized by Emotional Withdrawal that sometimes persists beyond the precipitating situation(s). Activity levels associated with Emotional Withdrawal may occasionally be inappropriate. Emotional Withdrawal may be inconvenient but far from incapacitating.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Persistent, low-level and/or occasional major disruption of daily life marked by Emotional Withdrawal. Uncontrolled emotion exhibited in this manner is often associated with disruption in other aspects of the person's life. When it occurs, the problem is out of proportion to the situation, and may be temporarily incapacitating.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Emotional Withdrawal is persistent and almost complete, affecting most aspects of the person's daily activities. The person is incapable of reacting emotionally much of the time. The problem may co-occur with other problems or may create new problems for the person.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	The person is totally devoid of emotion, seemingly incapable of responding on an emotional level to family or others. Extreme Emotional Withdrawal creates problems that require immediate attention and/or treatment.

Blunted affect	Passive	Underactive	Subdued	Distant	Doesn't verbalize feelings

Depression

1	No Problem -	Emotional control shows consistency and flexibility. The person is comfortable, generally with some degree of pleasant or warm affect. Circumstance may bring on temporary Depression, but the response is appropriate and does not impair the person's functioning. There is no disruption of daily activities in the form of Depression.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Emotional life is occasionally characterized by Depression that sometimes persists beyond the precipitating situations(s). Activity levels associated with Depression may occasionally be inappropriate. Depression may be inconvenient but far from incapacitating.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Persistent, low-level and/or occasional major disruption of daily life marked by Depression. Uncontrolled emotion exhibited in this manner is often associated with disruption in other aspects of the person's life. When it occurs, the problem is out of proportion to the situation, and may be temporarily incapacitating.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Depression is persistent and almost complete, affecting most aspects of the person's daily activities. The person is incapable of reacting emotionally much of the time. The problem may co-occur with other problems or may create new problems for the person.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	The person is totally incapacitated by Depression, unable to respond or even communicate with family or others. Extreme Depression creates problems that require immediate attention and/or treatment.

Depressed	Worthless	Hopeless	Lonely	Dejected	Sad

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STUDY ID NO. ______

Anxiety

1	No Problem -	Emotional control shows consistency and flexibility. The person is comfortable, generally with some degree of pleasant or warm affect. Circumstance may bring on temporary Anxiety, but the response is appropriate and does not impair the person's functioning. There is no disruption of daily activities in the form of Anxiety.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Emotional life is occasionally characterized by Anxiety that sometimes persists beyond the precipitating situations(s). Activity levels associated with Anxiety may occasionally be inappropriate. Anxiety may be inconvenient but far from incapacitating.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Persistent, low-level and/or occasional major disruption of daily life marked by Anxiety. Uncontrolled emotion exhibited in this manner is often associated with disruption in other aspects of the person's life. When it occurs, the problem is out of proportion to the situation, and may be temporarily incapacitating.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Anxiety is persistent and almost complete, affecting most aspects of the person's daily activities. The person is incapable of responding normally much of the time. The problem may co-occur with other problems or may create new problems for the person.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	The person is totally incapacitated by Anxiety, unable to respond or even communicate with family or others. Extreme Anxiety creates problems that require immediate attention and/or treatment.

Anxious	Fearful	Phobic	Tense
Flashbacks	Panic	Nervous	Nightmares/terrors

Hyper-Affect

1	No Problem -	Emotional control shows consistency and flexibility. The person is comfortable, generally with some degree of pleasant or warm affect. Circumstance may bring on temporary Hyper-Affect, but the response is appropriate and does not impair the person's functioning. There is no disruption of daily activities in the form of Hyper-Affect.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Emotional life is occasionally characterized by Hyper-Affect that sometimes persists beyond the precipitating situations(s). Activity levels associated with Hyper-Affect may occasionally be inappropriate. Hyper-Affect may be inconvenient but far from incapacitating.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Persistent, low-level and/or occasional major disruption of daily life marked by Hyper-Affect. Uncontrolled emotion exhibited in this manner is often associated with disruption in other aspects of the person's life. When it occurs, the problem is out of proportion to the situation, and may be temporarily incapacitating.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Hyper-Affect is persistent and almost complete, affecting most aspects of the person's daily activities. The person is incapable of responding normally much of the time. The problem may co-occur with other problems or may create new problems for the person.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	The person is totally incapacitated by Hyper-Affect, unable to respond or even communicate with family or others. Extreme Hyper-Affect creates problems that require immediate attention and/or treatment.

Overactive	Mood swings	Elevated mood	Mania	Accelerated speech	Pressured speech

CCAR STUDY ID NO. ______

Attention Problems

1	No Problem -	Emotional control shows consistency and flexibility. The person is comfortable, generally with some degree of pleasant or warm affect. Circumstance may bring on temporary Attention Problems, but the response is appropriate and does not impair the person's functioning. There is no disruption of daily activities in the form of Attention Problems.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Emotional life is occasionally characterized by Attention Problems that sometimes persist beyond the precipitating situations(s). Attention Problems may be inconvenient but far from incapacitating.
4	Slight to Moderate -	Function is between 3 and 5.
5	Moderate Problem -	Persistent, low-level and/or occasional major disruption of daily life marked by Attention Problems. Attention Problems exhibited in this manner are often associated with disruption in other aspects of the person's life. When Attention Problems occur, they are out of proportion to the situation, and may be temporarily incapacitating.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Attention Problems are persistent and almost complete, affecting most aspects of the person's daily activities. The person is incapable of responding normally much of the time. The problem may co-occur with other problems or may create new problems for the person.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	The person is totally incapacitated by Attention Problems, unable to respond or even communicate with family or others. Extreme Attention Problems create problems that require immediate attention and/or treatment.

Agitated	Restless	Impulsive	Distractable	Attention Span	Concentration

Suicide/Danger to Self

1	No Problem -	Emotional control shows consistency and flexibility. The person is comfortable, generally with some degree of pleasant or warm affect. There is no evidence of Self-Destructiveness.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Self-Destructiveness tendencies may be evident from speech or previous behaviour and the person may complain about having such thoughts, but the problem is merely irritating and the danger minimal.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Persistent, low-level and/or occasional major disruption of daily life marked by Self-Destructive thoughts and/or actions. Self-Destructive thoughts/actions should be taken seriously, behaviour monitored and the condition treated, but an attempt is not imminent.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Self-Destructive thoughts/actions are persistent and affect most aspects of the person's daily activities. Danger is high; behaviour must be monitored, an attempt may be imminent.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	The person is totally incapacitated by Self-Destructive thoughts and impulses. The person needs prompt intervention to prevent suicide or physical self-injury.

Suicide ideation	Suicide attempt	Suicide plan	Self injury/mutilation	Danger to self	Recklessness/self-endangerment

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Thought Processes

1	No Problem -	No evidence of thought and thinking difficulties. Thinking is generally accurate and realistic. Thinking is rarely distorted by beliefs with no objective basis. Logical thinking is developed appropriately for age.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Occasional impaired thought processes. Thinking occasionally distorted by defensive, emotional, or other personal factors. Communications may involve misunderstandings due to mild thought disorders.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Frequent or prolonged episodes of impaired or distorted thinking. Frequent substitution of fantasy for reality, isolated delusion, or infrequent hallucinations. Not incapacitated by thought problem(s).
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Rational thinking is mostly absent. Frequent hallucinations or delusions that the person cannot distinguish from reality. Communication is extremely difficult.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	No process that would ordinarily be considered "thinking" can be detected, although person may appear to be conscious. Communication virtually impossible. Extremely catatonic.

Bizarre	Repeated thought	Delusions	Suspicious	Paranoid	Obsessive	Hallucinations

Cognitive Problems

1	No Problem -	No evidence of impaired cognitive capacity. Cognition, including memory and judgement, is adequate. Able to carry out the perceptual tasks of normal daily life on an age-appropriate basis.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Incidences of poor judgement and/or memory loss may occur but are not severe or persistent. Specific impairments of memory and/or disorientation may occur.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Cognitive processes are significantly impaired, although person may be able to function reasonably well.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Incapacitation due to impaired Cognitive processes; unable to function independently. Communication may be difficult.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Cognitive processes impaired to non-existent; unable to care for self.

Confused	Disoriented	Disorganized	Impaired judgment	Lacks self-awareness	Loose associations

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STUDY ID NO. ______

Self Care/Basic Needs

1	No Problem -	Able to care for self and provide for own needs in age-appropriate manner without undue effort.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Lapses in personal hygiene; occasional assistance required in obtaining basic needs; occasionally short of funds; more dependent than expected for age and circumstances.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Consistently poor personal hygiene, may need assistance in caring for self. High levels of assistance needed in obtaining basic needs; chronically short of funds; much more dependent than expected for age and circumstances.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Unable to care for self in safe, sanitary manner. Severe disruption of ability to independently meet or arrange for basic needs. No means of financial support; extremely dependent for age.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Totally unable to meet or arrange for basic needs. Totally dependent. Is in extreme need of complete supportive care.

Gravely disabled	Hygiene	Self care problems	Doesn't manage money	Doesn't provide food for self	Doesn't use Resources	Doesn't provide housing for self

Resistiveness

1	No Problem -	No evidence of resistive behaviour. Interactions with others are normal. Cooperative.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Occasionally resists assistance or input. Resists weakly.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Frequent or consistent resistance.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Consistent, persistent rejection of almost all input and/or attempts at assistance.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Complete refusal to accept any input or suggestions. Total unwillingness to cooperate with attempts at assistance.

Resistive	Evasive	Guarded	Wary	Denies problems	Uncooperative

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Aggressiveness

1	No Problem -	Behaves normally, appears comfortable, and exhibits no aggressiveness towards family members or others.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Rare or low-level aggressive behaviour, sometimes not taken seriously by others, seen only as off-putting and not destructive to relationships.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Occasional major or frequent minor aggressive behaviour(s), or at least one intensely aggressive behaviour short of actual physical violence. Impact of behaviour(s) is irritating to frightening.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Repeated major aggressive behaviour(s). Aggressive behaviour is very problematic, usually perceived as hostile and/or threatening.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	An ongoing aggressive theme. Predisposed to behave aggressively almost all of the time. Almost all interactions are perceived as defiant, hostile, threatening, and/or intimidating.

Defiant	Acting out	Aggressive	Hostile	Threatening	Intimidating

Antisocial

1	No Problem -	No Antisocial problems. Not deliberately dishonest. Conforms to most standards of relevant subculture. Occasional breaking or bending of rules with no harm to others. Generally conforms to rules. Misbehaviour is non-repetitive, may be exploratory, or mischievous.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Occasional or mild Antisocial problems. Sometimes bends or violates rules for personal gain, or convenience, when detection is unlikely and personal harm to others is not obvious. Cannot always be relied on; may occasionally be disrespectful to family and others in authority.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Occasional major or frequent minor Antisocial problems. Conforms to rules only when more convenient or profitable than violation. Personal gain outweighs concern for others at an age appropriate level, leading to frequent and/or serious Antisocial behaviour. May be seen as frequently unreliable, disobedient, and/or dishonest.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Actions are without regard for rules. Seriously disruptive to society and/or a pervasive problem for others. Often uses others for personal gain.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Totally uncontrolled antisocial behaviour. Socially destructive and dangerous to almost all unguarded persons.

Disrespect	Disobedient	Dishonest	Uses/cons others	Disregards rules

Legal

1	No Problem -	No legal problems. Basically a law-abiding person. Generally conforms to laws and other codes.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Occasional or mild legal problems. Sometimes bends or violates laws when detection is unlikely. May occasionally get in trouble with the law or other authority.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Occasional major or frequent minor legal problems. Conforms to laws only when more convenient or profitable than violation. Personal gain outweighs concern for others at an age-appropriate level, leading to frequent and/or serious violation of laws and other codes.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Actions are without regard for laws. Seriously disruptive to society. May be in confinement or at risk of confinement.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Totally uncontrolled legal problems. Socially destructive and contentiously at risk of illegal behaviour. Likely to be in confinement or with current serious charges pending.

Legal problems	Probation/parole	Charges pending	Offenses: substances	Offences: property	Offences: persons

Violence/Danger to Others

1	No Problem -	Has never posed a threat to others and does not appear to now.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	By word and/or deed, in the past, has been a danger to specific others, but has not shown any evidence of a conscious desire to harm others.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Has reported thoughts of doing violence to others or has committed acts of violence in the past and may be seen as currently unreliable.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Has made serious threats, reported uncontrollable impulses, or committed violent acts recently and poses a clear and present danger to others.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Totally out of control, socially destructive and personally dangerous to unguarded persons, specified or in general.

Violent	Homicidal ideation	Assaultive	Homicidal threat/attempt	Danger to others	Physical/sexual abuser

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Family Issues

1	No Problem -	Family appears stable and functional. Issues that present themselves are temporary in nature with resolution attempted within regular family processes. **USE THIS RATING IF PERSON HAS NO FAMILY, OR NO FAMILY CONTACT AND INVOLVEMENT.**
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	There are some legal, parenting, and/or stability issues facing the family. Family member(s) occasionally think of leaving.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Occasional major or frequent minor disruption of family functioning. Possibly threats of domestic violence, and/or persistent concerns about parenting or family stability.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Extensive disruption in family functioning. May be episodic or chronic. May result in hostile, confusing, chaotic home environment. May have clear indications of violence. Out of home placement a clear possibility.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Total break down of family. Violence, legal problems, and/or instability out of control. Family members at extreme risk should things continue as they are.

No family/no contact	Separation/custody*	Domestic violence
Family legal*	Parenting	Unstable home/family

**Family legal – Legal problem between family members of either a civil and/or criminal nature (e.g. divorce, custody, charges of abuse, etc.)*
**Separation/Custody – Issues include: 1) an agreement or decree terminating a spousal relationship; and/or 2) decrees granting rights of care, supervision and control over one or more individuals to a custodian.*

Family Problems with

1	No Problem -	Relationships with other family members are usually positive and mutually satisfying. Major conflicts with family members are rare or resolved without great difficulty. Primary relationships are good within normal limits. **USE THIS RATING IF PERSON HAS NO FAMILY, OR NO FAMILY CONTACT AND INVOLVEMENT.**
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Relationships with family are mildly unsatisfactory. Friction, discord and turmoil occur occasionally or persist at a low level, and are not easily resolved. Problem possible with spouse, children, siblings, and/or parents.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Occasional major or frequent minor disruption of family relationships. Person may be primarily responsible for family's failure to function well. Frequent disagreements, turbulence, with one or more family members.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Causing extensive disruption in his/her own functioning within the family and of the family unit itself. Not capable of forming primary relationships; unable to function in parent-child role.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Total breakdown in relationships with family. Any continuing relationship(s) with family member(s) pose considerable personal risk for one or more individuals.

Parent	Sibling	Child	Partner	Relative

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Interpersonal Problems

1	No Problem -	Interpersonal Relationships are mostly fruitful and mutually satisfying. Major conflicts are rare or resolved without great difficulty. Appears to be held in esteem within his or her subculture. Good relationships with friends; forms good relationships with others; is able to relate well to peers, adults, or children without difficulty.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Occasional or mild disruption of relationships with others. Relationships are mildly unsatisfactory although generally adequate. May appear lonely or alienated although general functioning mostly appropriate. Some difficulty in developing or keeping friends. May seem lonely or shy.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Occasional major or frequent minor disruption of Interpersonal Relationships. May be actively disliked or virtually unknown by many with whom there is daily contact. Relationships that exist are usually tenuous, strained. Has not developed age-appropriate social skills.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Inability to form relationships. No close relationships; few, if any, casual associations. Socially rejected, isolated. Argumentative style or dependent style make relationships virtually impossible.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Relationship formation and maintenance does not appear possible at this time.

With friend	Social skills	Maintaining relationships	Establishing relationships

Role Performance (work/school)

1	No Problem -	Reasonably comfortable and competent in relevant role(s). Necessary tasks are accomplished adequately and usually within the expected time. There are occasional problems, but these are resolved quickly and pose no barrier to effectiveness. Holds a job for several years, without major difficulty.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Occasional or mild disruption of Role Performance. Dysfunction may take the form of chronic, mild overall inadequacy, or sporadic failures of a more dramatic sort. In any case, performance often falls short of expectation because of lack of ability or appropriate motivation. Unstable work history.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Occasional major or frequent disruption of Role Performance. Contribution in the most relevant role is clearly marginal. Seldom meets usual expectations and there is a high frequency of significant consequences, (e.g. firing, suspension). Frequent problems at work, or frequently fired.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Severe disruption of Role Performance due to serious incapacity or absent motivation. Attempts, if any, at productive functioning are ineffective and marked by clear failure. Cannot hold a job.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Productive functioning of any kind is not only absent, but also inconceivable at this time. Totally non-productive.

Absenteeism	Performance	Termination	Behaviour	Limited employability	Suspension/probation

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Substance Abuse

1	No Problem -	No impairment of functioning due to substance use. Substance use is controlled so that it is not apparently detrimental to over-all functioning or well-being. Substances used and amount of use are within commonly accepted range of the person's subculture. Infrequent excesses may occur in situations where such indulgences have no serious consequences.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Occasional or mild difficulties in functioning due to substance use. Weak control with respect to one or more substances. May depend on basically maladaptive substance use to escape stress or avoid direct resolution of problems, occasionally resulting in increased impairment and/or financial problems.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Frequent difficulties in functioning due to substance use. Little control. Lifestyle revolves around acquisition and abuse of one or more substances. Able to cover up detrimental effects only when well supplied and may feel unable to function, showing serious deterioration when deprived of substance.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Disabled or incapacitated due to substance use. Substance abuse dominates the person's life to the almost total exclusion of other aspects. Serious medical and/or social consequences are accepted as necessary inconveniences. Control is absent, except as necessary to avoid detection of an illegal substance.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Constantly incapacitated with no regard for basic needs or elemental personal safety. May include extreme vegetative existence.

Problems with alcohol Dependent/addicted Problems with drugs Interferes with responsibility In recovery

Medical Illness

1	No Problem -	No physical problems that interfere with daily life. Generally good health without undue distress or disruption due to common ailments and minor injuries. Any chronic medical/[physical condition is sufficiently controlled or compensated for as to cause no more discomfort or inconvenience than is typical for the age. No life-threatening conditions are present.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Occasional or mild physical problems that interfere with daily living. Physical condition worse than what is typical of age, sex, and subculture; manifested by mild chronic disability, illness or injury, or common illness more frequent than most. Includes most persons without specific disability, but frequent undiagnosed physical complaints. Disorders in this range could become life-threatening only with protracted lack of care.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Frequent and/or chronic problems with health. Person suffers from serious injury, illness or other physical condition that definitely limits physical functioning (though it may not impair psychological functioning or productivity in appropriately selected roles). Includes conditions that would be life-threatening without appropriate daily care. May require hospitalization or daily nursing care.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Incapacitated due to medical/physical health. The person is physically incapacitated by injury, illness, or other physical condition. Condition may be temporary, permanent, or progressive, but all cases in this range require at least regular nursing-type care.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Critical medical physical condition requiring constant professional attention to maintain life. Includes persons in a general hospital intensive care unit.

Acute illness Chronic illness Physical handicap Medical care needed Injury by abuse/assault Permanent Disability

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Security/Management Issues

1	No Problem -	No special management or security is needed.
2	No to Slight -	Function is between 1 and 3
3	Slight Problem -	Minor behaviour problems are present and require only minimal levels of control and management.
4	Slight to Moderate -	Function is between 3 and 5
5	Moderate Problem -	Intermittent or occasionally severe behaviour problems occur that require moderate levels of control and management. Occasional use of security measures may be necessary. May be medication compliance risk.
6	Moderate to Severe -	Function is between 5 and 7
7	Severe Problem -	Behaviour problems with serious consequences requiring ongoing or intermittent procedures such as close supervision, observation seclusion, suicide watch, and/or controlled medication administration are necessary. Walkaway potential may be high.
8	Severe to Extreme -	Function is between 7 and 9
9	Extreme Problem -	Behaviours may result in injury to self or others, may be life-threatening requiring immediate and/or constant management (e.g., suicide, assault).

Seclusion/time out	Close supervision	Security	Inadequate supervision
Walkaway/escape	Suicide watch	Medication compliance	Behaviour management

Overall Degree of Problem Severity (circle one)

1	No Problem -	Functioning is consistently average or better than what it typical for this person's age, sex, and subculture: no problem is present for this person.
2	No to Slight -	Severity is between 1 and 3
3	Slight Problem -	Person has a problem or problems. The problem may be intermittent or may persist at a low level. The problem has little impact. The problem is not urgent but may require therapeutic intervention in the future.
4	Slight to Moderate -	Severity is between 3 and 5
5	Moderate Problem -	The problem or problems may persist at a moderate level or become severe on occasion. Problem(s) may be present in one or more domains and do require therapeutic intervention(s).
6	Moderate to Severe -	Severity is between 5 and 7
7	Severe Problem -	The problem may be acute and severe or subacute but chronic. It almost always extends across domains and is likely to involve other persons in interpersonal and/or social contexts. Hospitalization or some other form of external control is often needed in addition to other therapeutic intervention(s).
8	Severe to Extreme -	Severity is between 7 and 9
9	Extreme Problem -	The highest level of the scale, suggesting the person's behaviour or situation is totally out of control, unacceptable, and potentially life-threatening, The problem is immediate and the need of control is urgent.

STUDY ID NO. ______

STRENGTHS AND RESOURCES

Economic Resources

1	Very High -	Many and strong economic resources.
2	Very High To High-	Function is between 1 and 3
3	High -	Generally good economic resources. Some resources are less secure than others but usually a base exists which could be augmented.
4	High To Moderate-	Function is between 3 and 5
5	Moderate-	Generally a moderate amount of economic resources.
6	Moderate To Some-	Function is between 5 and 7
7	Some-	Some economic resources. If possible, augmentation would be highly desirable.
8	Some To Very Low-	Function is between 7 and 9
	9 Very Low-	Few economic resources. Support comes exclusively from public sources and is not adequate to meet minimal needs.

Priv. Med. Ins.	Other Public Assis.	Employment	Financial*	Transportation*	Housing

**Financial – Having adequate monetary support and resources from other than public assistance.*
**Transportation – Having adequate means for conveyance other than by foot.*

Education & Social Resources

1	Very High -	Many and strong educational/skills resources.
2	Very High To High-	Rating between 1 and 3
3	High -	Generally good educational/skill resources. Some resources are less useful than others but usually a base exists which could be augmented.
4	High To Moderate-	Rating between 3 and 5
5	Moderate-	Generally a moderate amount of educational/skill resources.
6	Moderate To Some-	Rating between 5 and 7
7	Some-	Some educational/skill resources. If possible, augmentation would be highly desirable.
8	Some To Very Low-	Rating between 7 and 9
	9 Very Low-	Few educational/skill resources.

Language skills	Education	Interpersonal skills	Job skills	Intelligence

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Person Resources

1	Very High -	Many and strong person resources, a strong caring family that is willing and capable of helping.
2	Very High To High-	Rating between 1 and 3
3	High -	Generally good person resources. Some people are available and are both willing and capable of helping. A base exists which could be augmented.
4	High To Moderate-	Rating between 3 and 5
5	Moderate-	Generally a moderate amount of person resources.
6	Moderate To Some-	Rating between 5 and 7
7	Some-	Some person resources. A few people are available to help. If possible, augmentation would be highly desirable.
8	Some To Very Low-	Rating between 7 and 9
	9 Very Low-	Severely limited person resources. Other persons that may be available are overburdened and unwilling to help.

Parent(s)	Relative(s)	Other supportive relationship	Partner	Friend(s)	Child(ren)	Sibling(s)

Personal Strengths

1	Very High -	Many personal strengths.
2	Very High To High-	Rating between 1 and 3
3	High -	Generally a good array of personal strengths. Some personal qualities are stronger than others but usually a base exists which could be augmented.
4	High To Moderate-	Rating between 3 and 5
5	Moderate-	Generally a moderate amount of personal strengths.
6	Moderate To Some-	Rating between 5 and 7
7	Some-	Some personal strengths. If possible, augmentation would be highly desirable.
8	Some To Very Low-	Rating between 7 and 9
	9 Very Low-	Few personal strengths.

Likeableness	Adaptability	Hopefulness	Appearance	Thought clarity	Judgment
Confidence	Tolerance	Resourcefulness	Responsibility	Physical Health	Empathy
Insight	Emotional stability				

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Current Overall Strengths/Resources

1	Very High -	Many and strong resources and strengths. Good economic and skill base. Strong person or persons actively helping, assisting, and contributing.
2	Very High To High-	Rating between 1 and 3
3	High -	Generally good resources and strengths. Some areas may be lower than others but usually a base exists which could potentially be augmented.
4	High To Moderate-	Rating between 3 and 5
5	Moderate-	Generally a moderate amount of resources. May have good resources in some areas and no resources in other areas.
6	Moderate To Some-	Rating between 5 and 7
7	Some-	Some personal strengths and/or resources. If possible augmentation would be highly desirable. May have person(s) who occasionally contribute positively but much of their contribution may be negative or they may be unwilling to participate in a positive way.
8	Some To Very Low-	Rating between 7 and 9
9	Very Low-	Few and weak personal strengths. Minimal or absent economic and skill resources. Support comes exclusively from public sources. Other persons that may be available are overburdened and unwilling to help.

CCAR

STUDY ID NO. ______

ESTIMATION OF SERVICE NEEDS

Please score according to what the person would *ideally* receive, not what is currently available.

Residential Service Needs

Does patient/client need a residential facility? ○ Yes ○ No

Case Management/Community Support Needs:

Does the patient/client need case management services	○ Yes	>>	**If YES, estimate intensity of program contact**	○	Low, Indiv. personal support as needed
	○ No			○	Moderate; Weekly indiv. personal support
				○	High: Up to daily support
OUTPATIENT ONLY: Is the client using case management currently?	○ Yes	>>	**If YES, indicate intensity of program contact**	○	Low; Indiv. personal support as needed
	○ No			○	Moderate: Weekly indiv. personal support
				○	High: Up to daily support

Specific Services/Support Needs:

Estimate the average amount of contact this person will need:

Baseline – Estimated Need

Mental health treatment	None	Occasional	1-3 times/month	Once/week	2 or more times/week or daily
Medication management	○	○	○	○	○
Assessment/Diagnosis	○	○	○	○	○
Psychotherapy/counseling	○	○	○	○	○
Substance Abuse programming	○	○	○	○	○

Other health treatment	None	Occasional	1-3 times/month	Once/week	2 or more times/week or daily
Physical health care	○	○	○	○	○
Dental care	○	○	○	○	○

Crisis Services	None	Occasional	1-3 times/month	Once/week	2 or more times/week or daily
Mobile Crisis Service	○	○	○	○	○
Other Crisis Service	○	○	○	○	○

Rehabilitation and other services/supports	None	Occasional	1-3 times/month	Once/week	2 or more times/week or daily
Selfcare/ADL (e.g. personal hygiene, dressing)	○	○	○	○	○
Other ADL (e.g. meal preparation, housework, shopping)	○	○	○	○	○
Vocational	○	○	○	○	○
Meaningful Activity (cultural/spiritual pursuits, hobbies, etc.)	○	○	○	○	○
Educational	○	○	○	○	○
Social/recreational	○	○	○	○	○
Housing support	○	○	○	○	○
Income/financial assistance	○	○	○	○	○
Rights protection and advocacy	○	○	○	○	○
Family support	○	○	○	○	○
Correction/Probation/Court Services	○	○	○	○	○
Devel. disability programming	○	○	○	○	○
Other: ______________________	○	○	○	○	○

CCAR

STUDY ID NO. ______

How confident are you that you have sufficient knowledge about this client to complete this form accurately for this client?

Very Confident	Quite Confident	Confident	Not Very Confident	Not Confident

How long have you been the primary caregiver or a member of the care team for this client?

Over 10 years	5-10 years	1-4 years	6-11 months	Under 6 months

How well to you feel you know this client?

Very Well	Quite Well	Well	Not Very Well	Not Well

/CCAR – June 12

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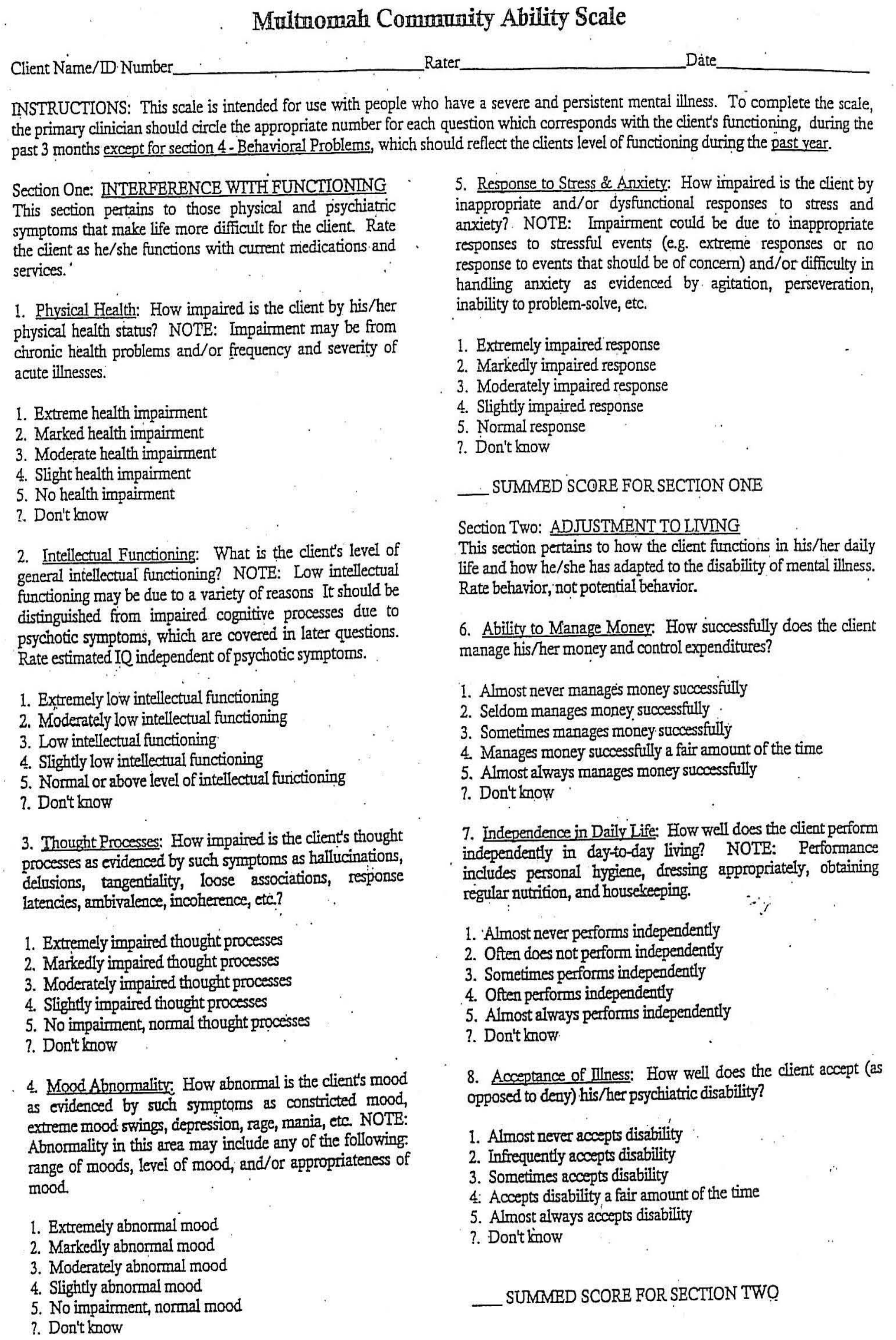
Colorado Department of Human Services
Mental Health Services

Appendix E

Multnomah Community Ability Scale (MCAS)



Multnomah Community Ability Scale

Client Name/ID Number____________________Rater____________________Date________________

INSTRUCTIONS: This scale is intended for use with people who have a severe and persistent mental illness. To complete the scale, the primary clinician should circle the appropriate number for each question which corresponds with the client's functioning, during the past 3 months except for section 4 - Behavioral Problems, which should reflect the clients level of functioning during the past year.

Section One: INTERFERENCE WITH FUNCTIONING

This section pertains to those physical and psychiatric symptoms that make life more difficult for the client. Rate the client as he/she functions with current medications and services.

1. Physical Health: How impaired is the client by his/her physical health status? NOTE: Impairment may be from chronic health problems and/or frequency and severity of acute illnesses.

1. Extreme health impairment
2. Marked health impairment
3. Moderate health impairment
4. Slight health impairment
5. No health impairment
?. Don't know

2. Intellectual Functioning: What is the client's level of general intellectual functioning? NOTE: Low intellectual functioning may be due to a variety of reasons It should be distinguished from impaired cognitive processes due to psychotic symptoms, which are covered in later questions. Rate estimated IQ independent of psychotic symptoms.

1. Extremely low intellectual functioning
2. Moderately low intellectual functioning
3. Low intellectual functioning
4. Slightly low intellectual functioning
5. Normal or above level of intellectual functioning
?. Don't know

3. Thought Processes: How impaired is the client's thought processes as evidenced by such symptoms as hallucinations, delusions, tangentiality, loose associations, response latencies, ambivalence, incoherence, etc.?

1. Extremely impaired thought processes
2. Markedly impaired thought processes
3. Moderately impaired thought processes
4. Slightly impaired thought processes
5. No impairment, normal thought processes
?. Don't know

4. Mood Abnormality: How abnormal is the client's mood as evidenced by such symptoms as constricted mood, extreme mood swings, depression, rage, mania, etc. NOTE: Abnormality in this area may include any of the following: range of moods, level of mood, and/or appropriateness of mood.

1. Extremely abnormal mood
2. Markedly abnormal mood
3. Moderately abnormal mood
4. Slightly abnormal mood
5. No impairment, normal mood
?. Don't know

5. Response to Stress & Anxiety: How impaired is the client by inappropriate and/or dysfunctional responses to stress and anxiety? NOTE: Impairment could be due to inappropriate responses to stressful events (e.g. extreme responses or no response to events that should be of concern) and/or difficulty in handling anxiety as evidenced by agitation, perseveration, inability to problem-solve, etc.

1. Extremely impaired response
2. Markedly impaired response
3. Moderately impaired response
4. Slightly impaired response
5. Normal response
?. Don't know

____ SUMMED SCORE FOR SECTION ONE

Section Two: ADJUSTMENT TO LIVING

This section pertains to how the client functions in his/her daily life and how he/she has adapted to the disability of mental illness. Rate behavior, not potential behavior.

6. Ability to Manage Money: How successfully does the client manage his/her money and control expenditures?

1. Almost never manages money successfully
2. Seldom manages money successfully
3. Sometimes manages money successfully
4. Manages money successfully a fair amount of the time
5. Almost always manages money successfully
?. Don't know

7. Independence in Daily Life: How well does the client perform independently in day-to-day living? NOTE: Performance includes personal hygiene, dressing appropriately, obtaining regular nutrition, and housekeeping.

1. Almost never performs independently
2. Often does not perform independently
3. Sometimes performs independently
4. Often performs independently
5. Almost always performs independently
?. Don't know

8. Acceptance of Illness: How well does the client accept (as opposed to deny) his/her psychiatric disability?

1. Almost never accepts disability
2. Infrequently accepts disability
3. Sometimes accepts disability
4. Accepts disability a fair amount of the time
5. Almost always accepts disability
?. Don't know

____ SUMMED SCORE FOR SECTION TWO

Section Three: SOCIAL COMPETENCE

This section pertains to the capacity of the client to engage in appropriate interpersonal relations and culturally meaningful activity.

9. Social Acceptability: In general, what are other people's reactions to the client:

1. Very negative
2. Fairly negative
3. Mixed, mildly negative to mildly positive
4. Fairly positive
5. Very positive
?. Don't know

10. Social Interest: How frequently does the client initiate social contact or respond to others' initiation of social contact:

1. Very infrequently
2. Fairly infrequently
3. Occasionally
4. Fairly frequently
5. Very frequently
?. Don't know

11. Social Effectiveness: How effectively does the client interact with others? NOTE: "Effectively" refers to how successfully and appropriately the client behaves in social settings, i.e., how well he or she minimizes interpersonal friction, meets personal needs, achieves personal goals in a socially appropriate manner, etc..

1. Very ineffectively
2. Ineffectively
3. Mixed or dubious effectiveness
4. Effectively
5. Very effectively
?. Don't know

12. Social Network: How extensive is the client's social support network? NOTE: A support network may consist of interested family, friends, acquaintances, professionals, coworkers, socialization programs, etc. Note: Rate the size of the network, not the social acceptability.

1. Very limited network
2. Limited network
3. Moderately extensive network
4. Extensive network
5. Very extensive network
?. Don't know

13. Meaningful Activity: How frequently is the client involved in meaningful activities that are satisfying to him or her? NOTE: Meaningful activities might include arts and crafts, reading, going to a movie, etc.

1. Almost never involved
2. Seldom involved
3. Sometimes involved
4. Often involved
5. Almost always involved
?. Don't know

____ SUMMED SCORE FOR SECTION THREE

3/98 version

Section Four: BEHAVIORAL PROBLEMS

This section pertains to those behaviors that make it more difficult for the client to integrate successfully in the community or comply with his/her prescribed treatment. NOTE: Rate client's current behavior, considering as appropriate events during the past year.

14. Medication Compliance: How frequently does the client comply with his/her prescribed medication regimen? NOTE: This question does not relate to how much those medications help the client.

1. Almost never complies
2. Infrequently complies
3. Sometimes complies
4. Usually complies
5. Almost always complies
?. Don't know

15. Cooperation with Treatment Providers: How frequently does the client cooperate as demonstrated by, for example, keeping appointments, complying with treatment plans, and following through on reasonable requests?

1. Almost never cooperates
2. Infrequently cooperates
3. Sometimes cooperates
4. Usually cooperates
5. Almost always cooperates
?. Don't know

16. Alcohol/Drug Abuse: How frequently does the client abuse drugs and/or alcohol? NOTE: "abuse" means use to the extent that it interferes with functioning.

1. Frequently abuses
2. Often abuses
3. Sometimes abuses
4. Infrequently abuses
5. Almost never abuses
?. Don't know

17. Impulse Control: How frequently does the client exhibit episodes of extreme acting out? NOTE: "Acting out" refers to such behavior as temper outbursts, spending sprees, aggressive actions, suicidal gestures, inappropriate sexual acts, etc.

1. Frequently acts out
2. Acts out fairly often
3. Sometimes acts out
4. Infrequently acts out
5. Almost never acts out
?. Don't know

____ SUMMED SCORE FOR SECTION FOUR

____ TOTAL SCORE (SUM SECTION SCORES)

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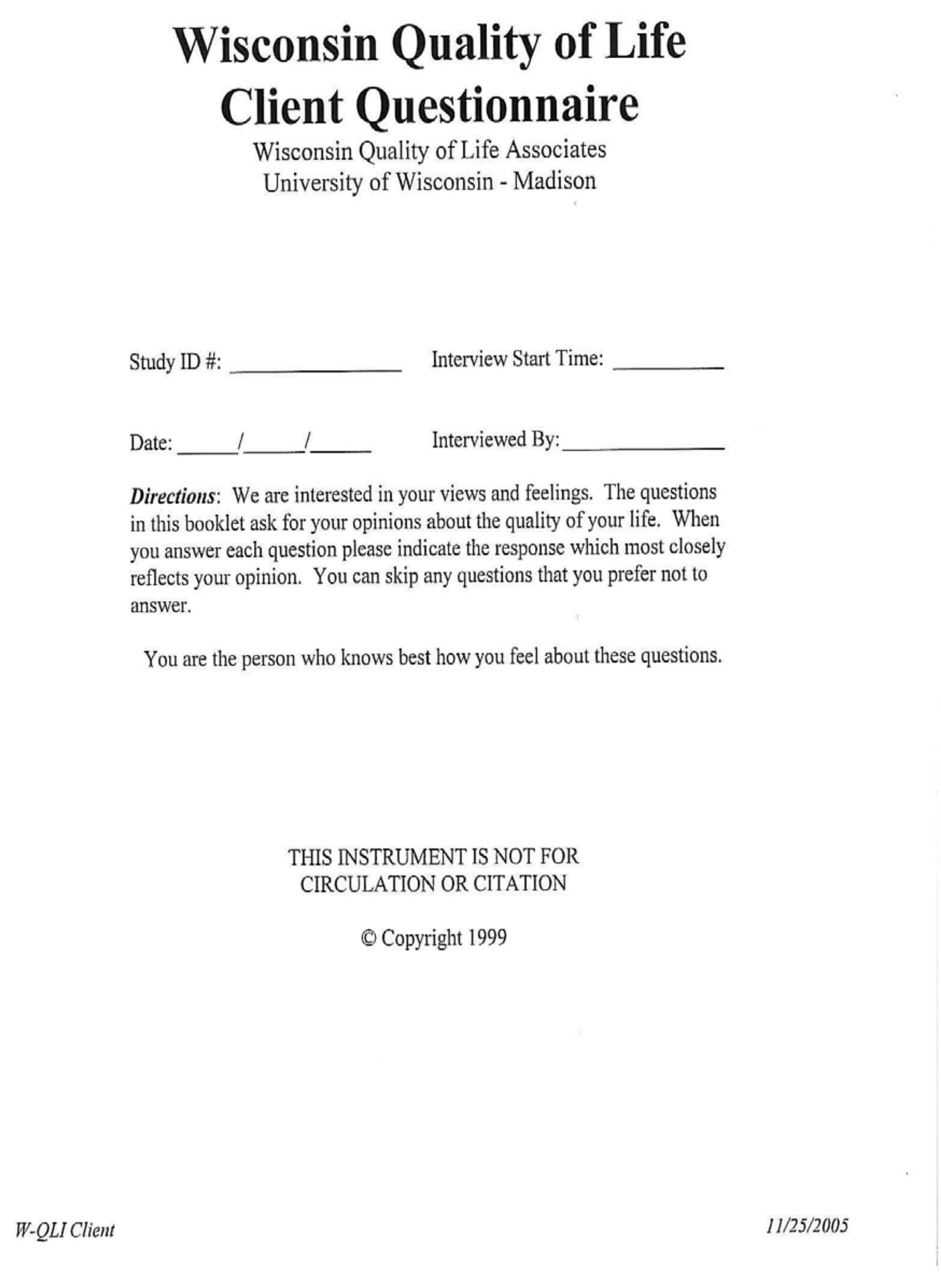
Appendix F

Wisconsin Quality of Life (W-QLI) - Client



Wisconsin Quality of Life Client Questionnaire

Wisconsin Quality of Life Associates
University of Wisconsin - Madison

Study ID #: ________________ Interview Start Time: __________

Date: _____/_____/_____ Interviewed By: _______________

Directions: We are interested in your views and feelings. The questions in this booklet ask for your opinions about the quality of your life. When you answer each question please indicate the response which most closely reflects your opinion. You can skip any questions that you prefer not to answer.

You are the person who knows best how you feel about these questions.

THIS INSTRUMENT IS NOT FOR
CIRCULATION OR CITATION

SATISFACTION LEVEL

	Dissatisfied			Neither Satisfied or Dissatisfied	Satisfied		
How satisfied or dissatisfied are you … (repeat stem as needed)	Very Dissatisfied	Moderately Dissatisfied	A little Dissatisfied		A little Satisfied	Moderately Satisfied	Very Satisfied
with the way you spend your time?	☐	☐	☐	☐	☐	☐	☐
when you are alone?	☐	☐	☐	☐	☐	☐	☐
with your housing?	☐	☐	☐	☐	☐	☐	☐
with your neighborhood as a place to live in?	☐	☐	☐	☐	☐	☐	☐
with the food you eat?	☐	☐	☐	☐	☐	☐	☐
with the clothing you wear?	☐	☐	☐	☐	☐	☐	☐
with the mental health services you use?	☐	☐	☐	☐	☐	☐	☐
with your access to transportation?	☐	☐	☐	☐	☐	☐	☐
with your sex life?	☐	☐	☐	☐	☐	☐	☐
with your personal safety?	☐	☐	☐	☐	☐	☐	☐

We have asked how satisfied you are with different parts of your life. Now we would like to know how important each of these aspects of your life are.

How important to you … (repeat stem as needed)	Not at all Important	Slightly Important	Moderately Important	Very Important	Extremely Important
is the way you spend your time?	☐	☐	☐	☐	☐
is it to feel comfortable when alone?	☐	☐	☐	☐	☐
is your housing?	☐	☐	☐	☐	☐
is your neighborhood as a place to live in?	☐	☐	☐	☐	☐
is the food you eat?	☐	☐	☐	☐	☐
is the clothing you wear?	☐	☐	☐	☐	☐
are the mental health services you use?	☐	☐	☐	☐	☐
is your access to transportation?	☐	☐	☐	☐	☐
is your sex life?	☐	☐	☐	☐	☐
is your personal safety?	☐	☐	☐	☐	☐

ACTIVITIES AND OCCUPATIONS

During the **past four weeks**, you have: (Check one)

☐been working/studying or doing housework in your usual manner

☐been working/studying or doing housework but less often

☐stopped working/studying or doing housework

About how many hours a week do you work or go to school? Hours per week = ________

What is your main activity? (Check one).

☐ Paid employment

☐ Volunteer or unpaid work

☐ School

☐ Other (Specify): ____________________

☐ Treatment/rehabilitation program

☐ Craft/leisure time/hobbies

☐ No structured activity

How satisfied or dissatisfied are you with the main activity that you do? (Check one)

Dissatisfied			Neither Satisfied or Dissatisfied	Satisfied		
☐ Very Dissatisfied	☐ Moderately Dissatisfied	☐ A Little Dissatisfied	☐ Neither satisfied nor Dissatisfied	☐ A Little Satisfied	☐ Moderately Satisfied	☐ Very Satisfied

---

Do you feel that you are engaged in activities: (Choose one)

☐ Less than you would like ☐ As much as you want ☐ More than you would like

---

What would you like to have as your main activity?

☐ Paid employment

☐ Volunteer or unpaid work

☐ School

☐ Other (Specify): ____________________

☐ Treatment/rehabilitation program

☐ Craft/leisure time/hobbies

☐ No structured activity

PSYCHOLOGICAL WELL-BEING

Now we would like to know how you feel about things in your life. For each of the following questions, please say yes or no to best describe how you have felt in the **past four weeks**. *Interviewer: repeat stem as needed.*

YES	NO	
☐	☐	**Pleased about having accomplished something?**
☐	☐	**Very lonely or remote from other people?**
☐	☐	**Bored?**
☐	☐	**That things went your way?**
☐	☐	**So restless that you couldn't sit long in a chair?**
☐	☐	**Proud because someone complimented you on something you had done?**
☐	☐	**Upset because someone criticized you?**
☐	☐	**Particularly excited or interested in something?**
☐	☐	**Depressed or very unhappy?**
☐	☐	**On top of the world?**

In the **past four weeks**, would you say that your mental health has been:

☐ Poor ☐ Fair ☐ Good ☐ Very Good ☐ Excellent

SYMPTOMS/OUTLOOK

During the **past four weeks**, you have: (Check one)

☐ generally felt calm and positive in outlook

☐ been having some periods of anxiety or depression

☐ generally been confused, frightened, anxious or depressed

There are many aspects of emotional distress including feelings of depression, anxiety, (hearing voices), etc. In the **past four weeks**, how much distress have these symptoms caused you?: (Check one)

☐ Not at all ☐ A little ☐ Some ☐ A moderate amount ☐ A lot

In the **past four weeks**, how much have feelings of depression, anxiety, etc. interfered	Never	Occa-sionally	Frequently	Most of the time	Constantly
with your daily life?	☐	☐	☐	☐	☐
Have you felt like killing yourself?	☐	☐	☐	☐	☐
Have you felt like harming others?	☐	☐	☐	☐	☐

PHYSICAL HEALTH

In the **past four weeks**, you would best describe your *physical* health as:

☐ Poor ☐ Fair ☐ Good ☐ Very Good ☐ Excellent

How do you feel about your physical health? (Check one)

Dissatisfied			Neither Satisfied or Dissatisfied	Satisfied		
☐ Very Dissatisfied	☐ Moderately Dissatisfied	☐ A Little Dissatisfied	☐ Neither satisfied nor Dissatisfied	☐ A Little Satisfied	☐ Moderately Satisfied	☐ Very Satisfied

---

How important to you is your physical health? (Check one)

☐ Not at all Important ☐ Slightly Important ☐ Moderately Important ☐ Very Important ☐ Extremely Important

---

Are you currently taking psychiatric medications? ***(If known, complete without asking)***

☐ Yes ☐ No (If no, go to next page)

If you are currently taking psychiatric medications, do you take them as prescribed? (Check one)

☐ Never ☐ Sometimes ☐ Always ☐ Very Infrequently ☐ Quite Often

---

If you are currently taking psychiatric medications, do you have side effects from them?

☐ None ☐ Slight ☐ Mild ☐ Moderate ☐ Severe

If you take medications for mental health problems, do you feel the medication helps control your symptoms?

☐ Not at All ☐ Some ☐ A Fair Amount ☐ Quite a Bit ☐ Eliminates All Symptoms

---

How do you feel about taking your psychiatric medications?

Dissatisfied			Neither Satisfied or Dissatisfied	Satisfied		
☐ Very Dissatisfied	☐ Moderately Dissatisfied	☐ A Little Dissatisfied	☐ Neither satisfied nor Dissatisfied	☐ A Little Satisfied	☐ Moderately Satisfied	☐ Very Satisfied

ALCOHOL & OTHER DRUGS

Over the **past four weeks**, have you had any alcohol? ☐ Yes ☐ No

If yes, on how many days have you had any alcohol to drink over the **past four weeks**? _____ (number of days)

What do you think about your alcohol use? Would you say…

☐ It is a big problem ☐ It is a minor problem ☐ Not a problem ☐ It helps a little ☐ It helps a lot

Over the **past four weeks**, have you used any street drugs (cocaine, marijuana, heroin, speed, LSD, etc.)?

☐ Yes ☐ No

If yes, on how many days have you used any street drugs over the **past four weeks**? _____ (number of days)

What do you think about your drug use? Would you say…

☐ It is a big problem ☐ It is a minor problem ☐ Not a problem ☐ It helps a little ☐ It helps a lot

SOCIAL RELATIONS / SUPPORT

	Dissatisfied			**Neither satisfied or dissatisfied**	**Satisfied**		
How satisfied or dissatisfied are you… (repeat stem as needed)	Very dissatisfied	Moderately dissatisfied	A little dissatisfied		A little satisfied	Moderately satisfied	Very satisfied
with the number of friends you have? ☐ **No friends**	☐	☐	☐	☐	☐	☐	☐
with how you get along with your friends?	☐	☐	☐	☐	☐	☐	☐
with your relationship with your family? ☐ **No family**	☐	☐	☐	☐	☐	☐	☐
If you live with others, how satisfied or dissatisfied are you with the people you live? ☐ **Live alone**	☐	☐	☐	☐	☐	☐	☐
with how you get along with other people?	☐	☐	☐	☐	☐	☐	☐
How many people do you count as your friends?	☐ none	☐ 1-2	☐ 3-5	☐ over 5			

IMPORTANCE LEVEL

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
How important is it to have an adequate number of friends?	☐	☐	☐	☐	☐
How important is it to get along with your friends?	☐	☐	☐	☐	☐
How important are family relationships?	☐	☐	☐	☐	☐
If you live with others, how important are the people with whom you live?	☐	☐	☐	☐	☐
How important is it to get along with others?	☐	☐	☐	☐	☐

During the **past four weeks**, you have (check one):

☐been having good relationships with others and receiving support from family and friends

☐been receiving only moderate support from family and friends

☐had infrequent support from family and friends or only when absolutely necessary

MONEY

Are you paid for working or attending school? ☐ Yes ☐ No

How do you feel about the amount of money you have?

Dissatisfied			Neither Satisfied or Dissatisfied	Satisfied		
☐ Very Dissatisfied	☐ Moderately Dissatisfied	☐ A Little Dissatisfied	☐ Neither satisfied nor Dissatisfied	☐ A Little Satisfied	☐ Moderately Satisfied	☐ Very Satisfied

How satisfied are you about the amount of control you have over your money?

Dissatisfied			Neither Satisfied or Dissatisfied	Satisfied		
☐ Very Dissatisfied	☐ Moderately Dissatisfied	☐ A Little Dissatisfied	☐ Neither satisfied nor Dissatisfied	☐ A Little Satisfied	☐ Moderately Satisfied	☐ Very Satisfied

How important to you is money?

☐ Not at all Important ☐ Slightly Important ☐ Moderately Important ☐ Very Important ☐ Extremely Important

How important is it to you to have control over your money?

☐ Not at all Important ☐ Slightly Important ☐ Moderately Important ☐ Very Important ☐ Extremely Important

How often does lack of money keep you from doing what you want to do?

☐ Never ☐ Sometimes ☐ Frequently ☐ Almost always

ACTIVITIES OF DAILY LIVING

Below are activities that you may have participated in recently. Please say YES or NO to indicate whether you have done the activity in the **past four weeks**.

	YES	NO		YES	NO
Gone to a restaurant or coffee shop	☐	☐	**Gone shopping**	☐	☐
Gone for a ride in a bus or car	☐	☐	**Prepared a meal**	☐	☐
Cleaned the room/apartment/home	☐	☐	**Done the laundry**	☐	☐

During the **past four weeks** you:

☐have been able to do most things on your own (such as shopping, getting around town, etc.)

☐have needed some help in getting things done

☐have had trouble getting tasks done, even with help

In the **past four weeks**, how often have you had any problems with personal grooming (e.g. taking showers, brushing your teeth)?

☐ Never ☐ Sometimes ☐ Frequently ☐ Almost always

GOAL ATTAINMENT

What did you hope to accomplish in treatment (since you began the study) *as a result of your mental health care*? Please write below (verbatim) up to 3 goals:

Goal 1: ____________________

How important is this goal on a scale of 1 to 10 where 1 is not at all important and 10 is extremely important?

Not at All Important	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	**Extremely Important**

To what extent has this goal been achieved on a scale of 1 to 10 where 1 is not at all achieved and 10 is completely achieved?

Not at All Achieved	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	**Completely Achieved**

Goal 2: ____________________

How important is this goal on a scale of 1 to 10 where 1 is not at all important and 10 is extremely important?

Not at All Important	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	**Extremely Important**

To what extent has this goal been achieved on a scale of 1 to 10 where 1 is not at all achieved and 10 is completely achieved?

Not at All Achieved	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	**Completely Achieved**

Goal 3: ____________________

How important is this goal on a scale of 1 to 10 where 1 is not at all important and 10 is extremely important?

Not at All Important	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	**Extremely Important**

To what extent has this goal been achieved on a scale of 1 to 10 where 1 is not at all achieved and 10 is completely achieved?

Not at All Achieved	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐	**Completely Achieved**

OTHER

Below are activities that you may have participated in recently. Please say Yes or No to indicate whether you have done the activity in the **past four weeks**.

	YES	NO		YES	NO
Gone for a walk	☐	☐	Gone to a social group	☐	☐
Gone to a movie or play	☐	☐	Read a magazine or newspaper	☐	☐
Watched TV	☐	☐	Gone to church, synagogue, mosque	☐	☐
Played cards	☐	☐	Listened to a radio	☐	☐
Played a sport	☐	☐	Gone to a library	☐	☐

On a scale of 1 to 10 where 1 is the lowest quality of life and 10 is the highest, please say how you feel about your quality of life during the **past four weeks.**
Lowest quality means things are as bad as they could be. Highest quality means things are the best they could be.

Lowest Quality	1	2	3	4	5	6	7	8	9	10	**Highest Quality**
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

If your quality of life is less than you hope for, how hopeful are you that you will eventually achieve your desired quality of life? Would you say…

☐ Not at All ☐ Somewhat ☐ Moderately ☐ Very

How much control do you feel you have over the important areas of your life? Would you say…

☐ None ☐ Some ☐ A moderate amount ☐ A great amount

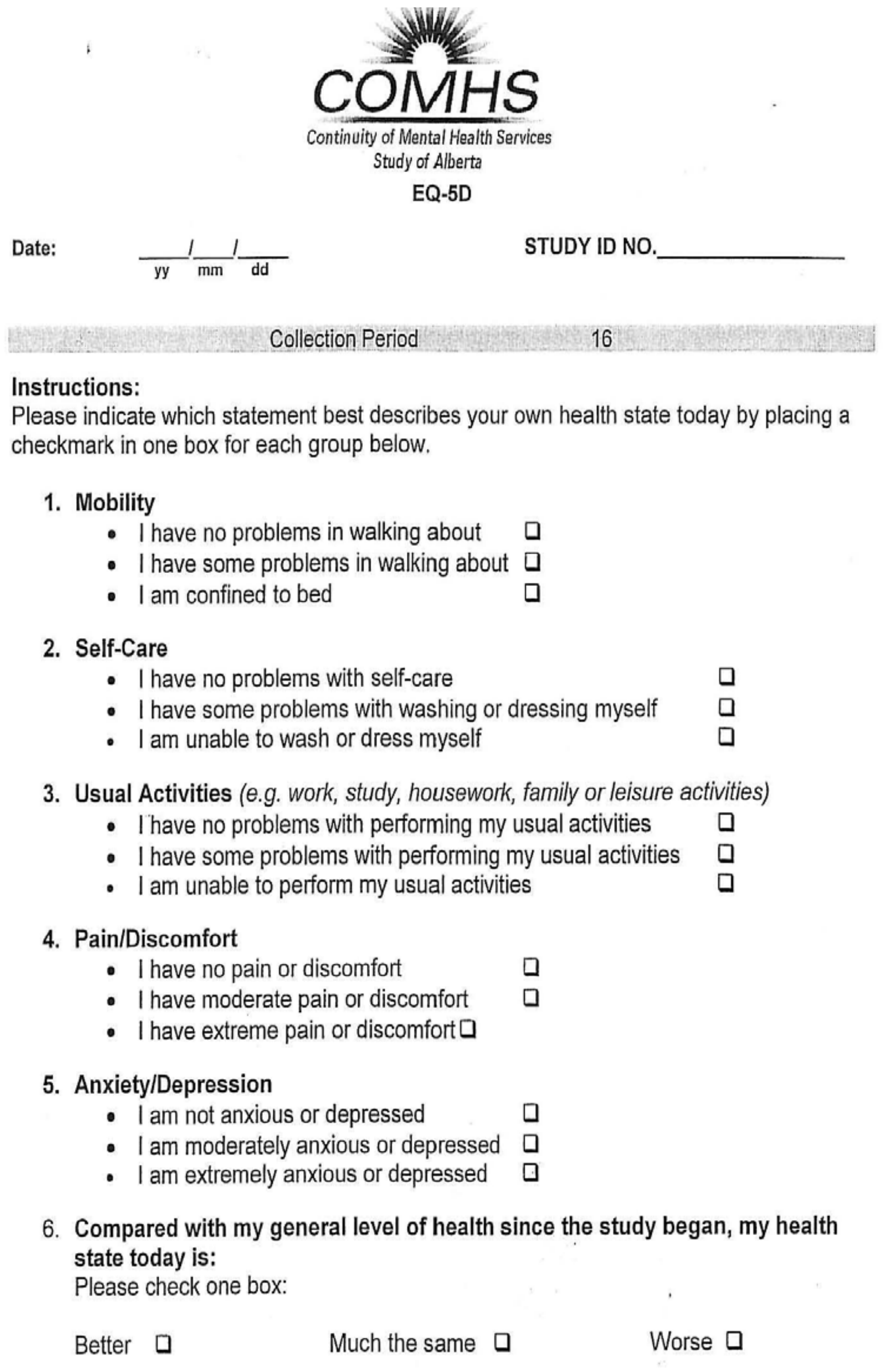
How important are each of the following factors in determining your quality of life?	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Work, school or other occupational activities	☐	☐	☐	☐	☐
Your feelings about yourself	☐	☐	☐	☐	☐
Your physical health	☐	☐	☐	☐	☐
Friends, family, people you spend time with	☐	☐	☐	☐	☐
Having enough money	☐	☐	☐	☐	☐
Ability to take care of yourself	☐	☐	☐	☐	☐
Your mental health	☐	☐	☐	☐	☐
Other, please specify:	☐	☐	☐	☐	☐

Is there anything else you would like us to know?

This is the end of the questionnaire. Thank you for giving your opinion and sharing your responses with us. If you have any questions about this questionnaire, please call or write Marion Becker, Ph.D., University of South Florida, Department of Community Mental Health, 13301 Bruce B. Downs Blvd., MHC 1423, Tampa, Florida 33612-3899 Telephone: (813)974-7188 Fax: (813)974-6469 E-Mail: .becker@fmhi.usf.edu

Appendix G

EuroQol (EQ-5D)



COMHS
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Study of Alberta

EQ-5D

Date: ____/____/____ (yy mm dd)

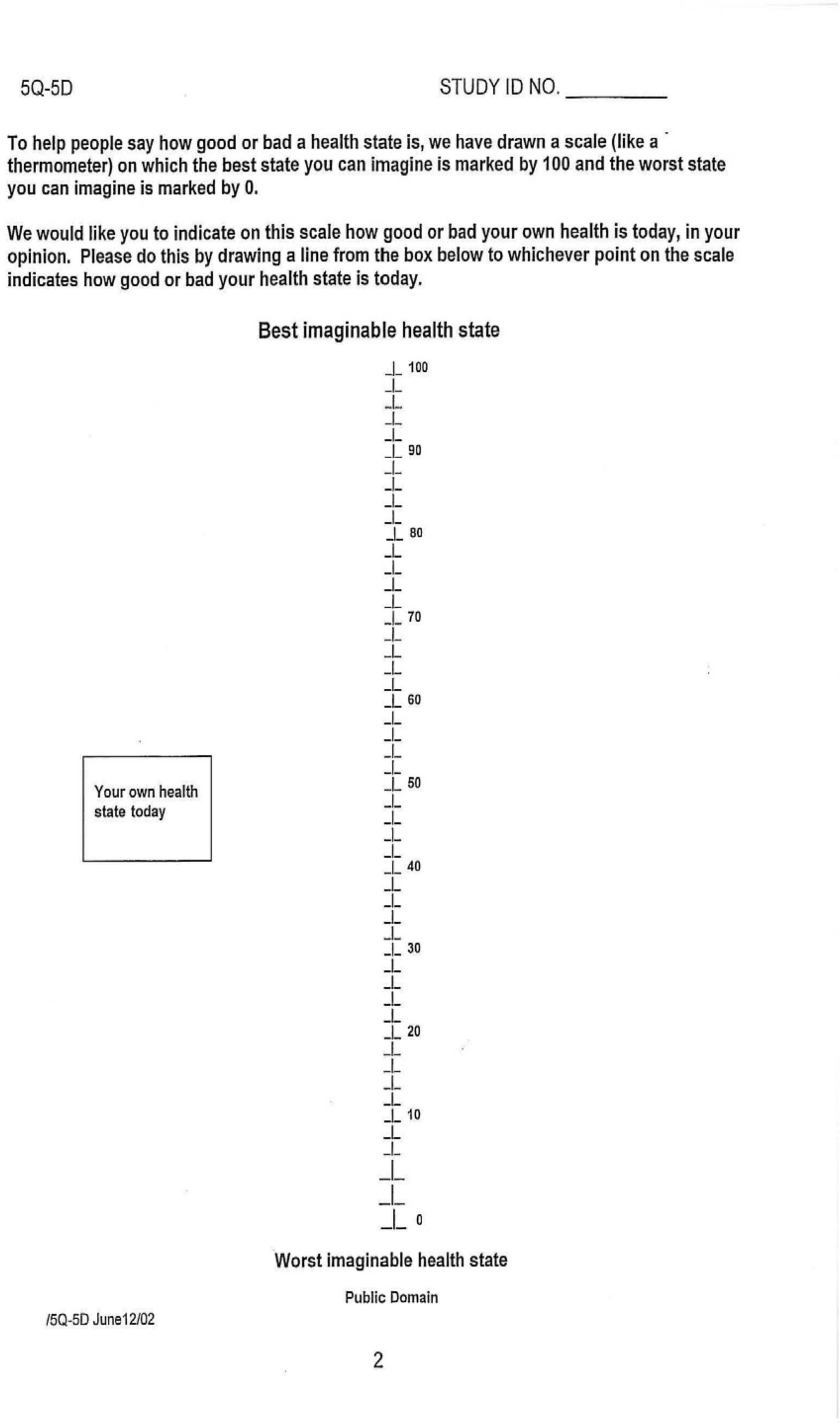
STUDY ID NO.________________

Collection Period 16

Instructions:
Please indicate which statement best describes your own health state today by placing a checkmark in one box for each group below.

1. **Mobility**
   - I have no problems in walking about ☐
   - I have some problems in walking about ☐
   - I am confined to bed ☐
2. **Self-Care**
   - I have no problems with self-care ☐
   - I have some problems with washing or dressing myself ☐
   - I am unable to wash or dress myself ☐
3. **Usual Activities** *(e.g. work, study, housework, family or leisure activities)*
   - I have no problems with performing my usual activities ☐
   - I have some problems with performing my usual activities ☐
   - I am unable to perform my usual activities ☐
4. **Pain/Discomfort**
   - I have no pain or discomfort ☐
   - I have moderate pain or discomfort ☐
   - I have extreme pain or discomfort ☐
5. **Anxiety/Depression**
   - I am not anxious or depressed ☐
   - I am moderately anxious or depressed ☐
   - I am extremely anxious or depressed ☐
6. **Compared with my general level of health since the study began, my health state today is:**
   Please check one box:

   Better ☐ Much the same ☐ Worse ☐



5Q-5D STUDY ID NO. __________

To help people say how good or bad a health state is, we have drawn a scale (like a thermometer) on which the best state you can imagine is marked by 100 and the worst state you can imagine is marked by 0.

We would like you to indicate on this scale how good or bad your own health is today, in your opinion. Please do this by drawing a line from the box below to whichever point on the scale indicates how good or bad your health state is today.

Best imaginable health state

100
90
80
70
60
50
40
30
20
10
0

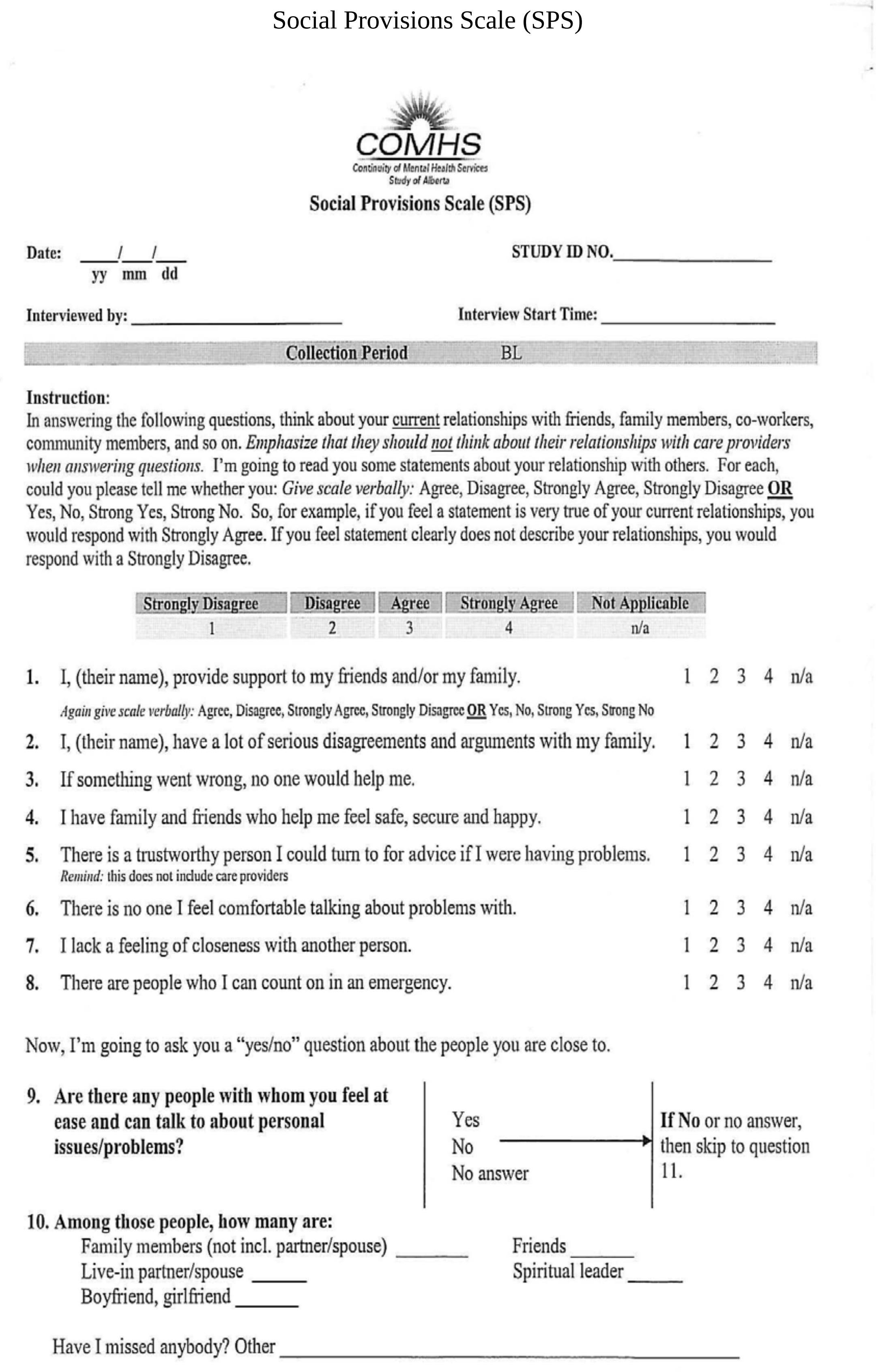
Your own health state today

Worst imaginable health state

Public Domain

Appendix H

Social Provisions Scale (SPS)



COMHS
Continuity of Mental Health Services
Study of Alberta

Social Provisions Scale (SPS)

Date: ____/___/___
yy mm dd

STUDY ID NO.__________________

Interviewed by: _________________________

Interview Start Time: ____________________

Collection Period BL

Instruction:
In answering the following questions, think about your <u>current</u> relationships with friends, family members, co-workers, community members, and so on. *Emphasize that they should <u>not</u> think about their relationships with care providers when answering questions.* I'm going to read you some statements about your relationship with others. For each, could you please tell me whether you: *Give scale verbally:* Agree, Disagree, Strongly Agree, Strongly Disagree **<u>OR</u>** Yes, No, Strong Yes, Strong No. So, for example, if you feel a statement is very true of your current relationships, you would respond with Strongly Agree. If you feel statement clearly does not describe your relationships, you would respond with a Strongly Disagree.

Strongly Disagree	Disagree	Agree	Strongly Agree	Not Applicable
1	2	3	4	n/a

1. I, (their name), provide support to my friends and/or my family. 1 2 3 4 n/a

Again give scale verbally: Agree, Disagree, Strongly Agree, Strongly Disagree **<u>OR</u>** Yes, No, Strong Yes, Strong No

2. I, (their name), have a lot of serious disagreements and arguments with my family. 1 2 3 4 n/a

3. If something went wrong, no one would help me. 1 2 3 4 n/a

4. I have family and friends who help me feel safe, secure and happy. 1 2 3 4 n/a

5. There is a trustworthy person I could turn to for advice if I were having problems. 1 2 3 4 n/a
Remind: this does not include care providers

6. There is no one I feel comfortable talking about problems with. 1 2 3 4 n/a

7. I lack a feeling of closeness with another person. 1 2 3 4 n/a

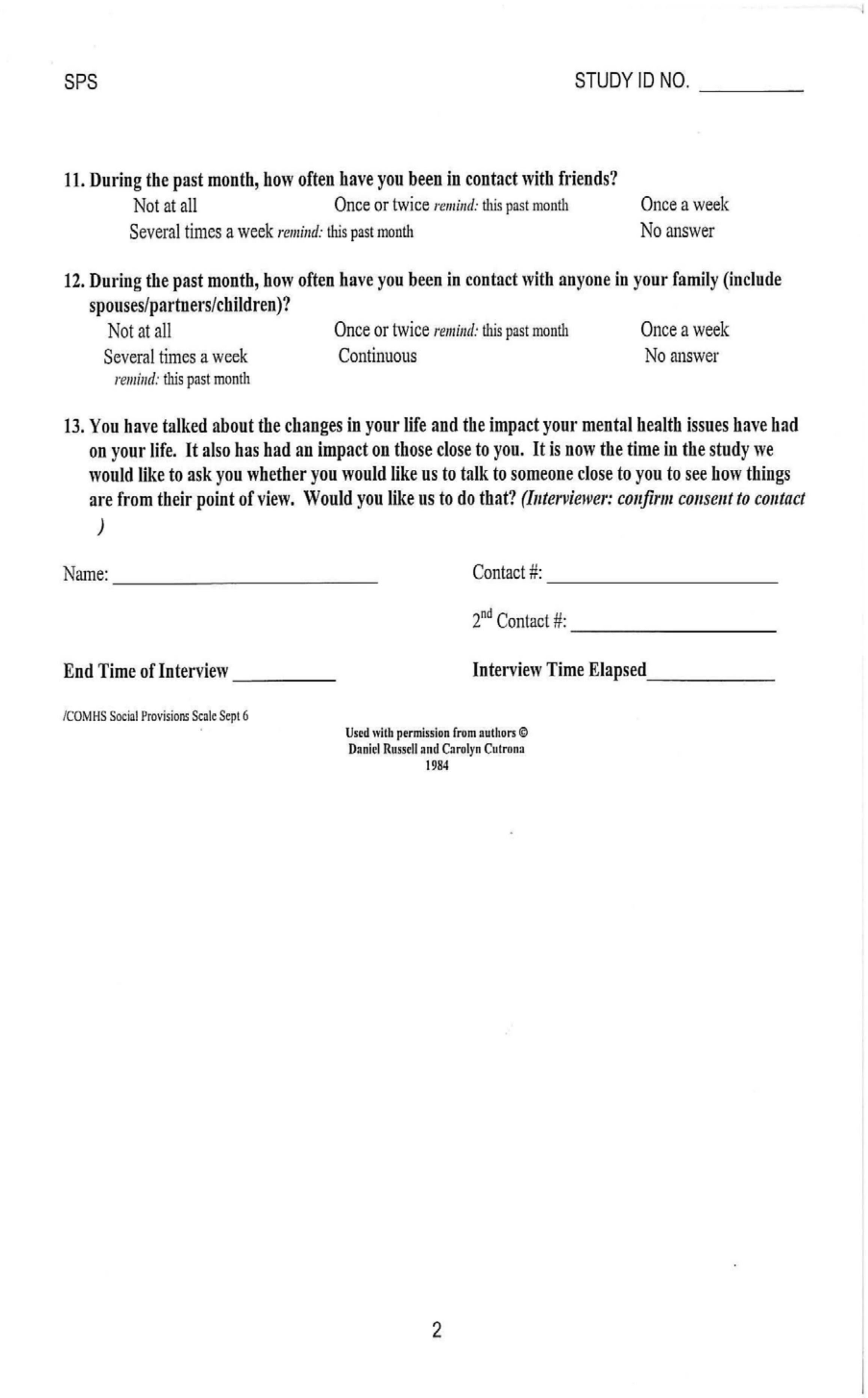
8. There are people who I can count on in an emergency. 1 2 3 4 n/a

Now, I'm going to ask you a "yes/no" question about the people you are close to.

9. Are there any people with whom you feel at ease and can talk to about personal issues/problems?	Yes No → No answer	**If No** or no answer, then skip to question 11.

10. Among those people, how many are:
Family members (not incl. partner/spouse) ________
Live-in partner/spouse ______
Boyfriend, girlfriend ______
Friends _______
Spiritual leader ______

Have I missed anybody? Other ____



SPS STUDY ID NO. ___________

11. During the past month, how often have you been in contact with friends?

Not at all Once or twice *remind:* this past month Once a week
Several times a week *remind:* this past month No answer

12. During the past month, how often have you been in contact with anyone in your family (include spouses/partners/children)?

Not at all Once or twice *remind:* this past month Once a week
Several times a week *remind:* this past month Continuous No answer

13. You have talked about the changes in your life and the impact your mental health issues have had on your life. It also has had an impact on those close to you. It is now the time in the study we would like to ask you whether you would like us to talk to someone close to you to see how things are from their point of view. Would you like us to do that? ***(Interviewer: confirm consent to contact)***

Name: ______________________________ Contact #: __________________________

2nd Contact #: ______________________

End Time of Interview ___________ **Interview Time Elapsed**_____________

/COMHS Social Provisions Scale Sept 6

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1984

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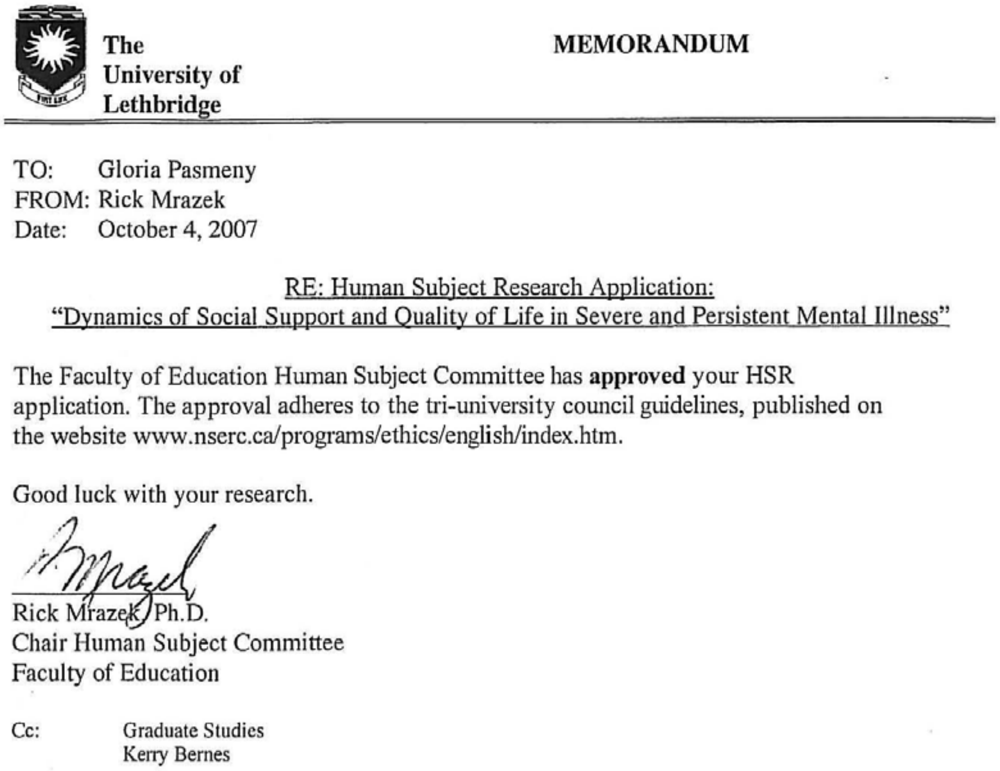
Appendix I

Letter of Ethics Approval



The
University of
Lethbridge

MEMORANDUM

TO: Gloria Pasmeny
FROM: Rick Mrazek
Date: October 4, 2007

RE: Human Subject Research Application:
"Dynamics of Social Support and Quality of Life in Severe and Persistent Mental Illness"

The Faculty of Education Human Subject Committee has **approved** your HSR application. The approval adheres to the tri-university council guidelines, published on the website www.nserc.ca/programs/ethics/english/index.htm.

Good luck with your research.

Rick Mrazek, Ph.D.
Chair Human Subject Committee
Faculty of Education

Cc: Graduate Studies
Kerry Bernes

Gloria A. Pasmeny
11348-65 Street
Edmonton, Alberta T5W 4K6
Phone (780)451-2992
Email gpasmeny@shaw.ca

March 14, 2007

Carol E. Adair, MSc. PhD
Associate Professor, Dept. of Psychiatry and Community Health Sciences,
Room 124, Heritage Medical Research Building,
3330 Hospital Drive NW
Calgary, Alberta T2N 4N1
Phone (403)210-8805
Email ceadair@ucalgary.ca

Dear Dr. Adair:

RE: Permission to Access Secondary Data from the COMHS Study

Thank-you for your generous offer to provide access to a portion of the data obtained in Phase II of the Continuity of Mental Health Services (COMHS) Study of Alberta.

Please confirm that, as the principal investigator of the COMHS Study of Alberta, you will provide access to a database comprised of data collected in Phase II, according to its relevance to the study I am proposing. The relevant data includes participant demographics and diagnoses as well as participant and/or clinician responses to the following study measures:

- Social Provisions Scale
- Wisconsin Quality of Life Index
- EuroQol EQ-5D
- Multnomah Community Ability Scale
- Colorado Client Assessment Record.

I understand that the data will be provided in an SPSS database, and that no participant names will be included in the database. I will analyze and report on the relationships between these measures in accordance with requirements for completion of a Master's thesis at the University of Lethbridge.

Thank-you, once again, for your offer of this rich dataset. I look forward to working with you.

Sincerely,

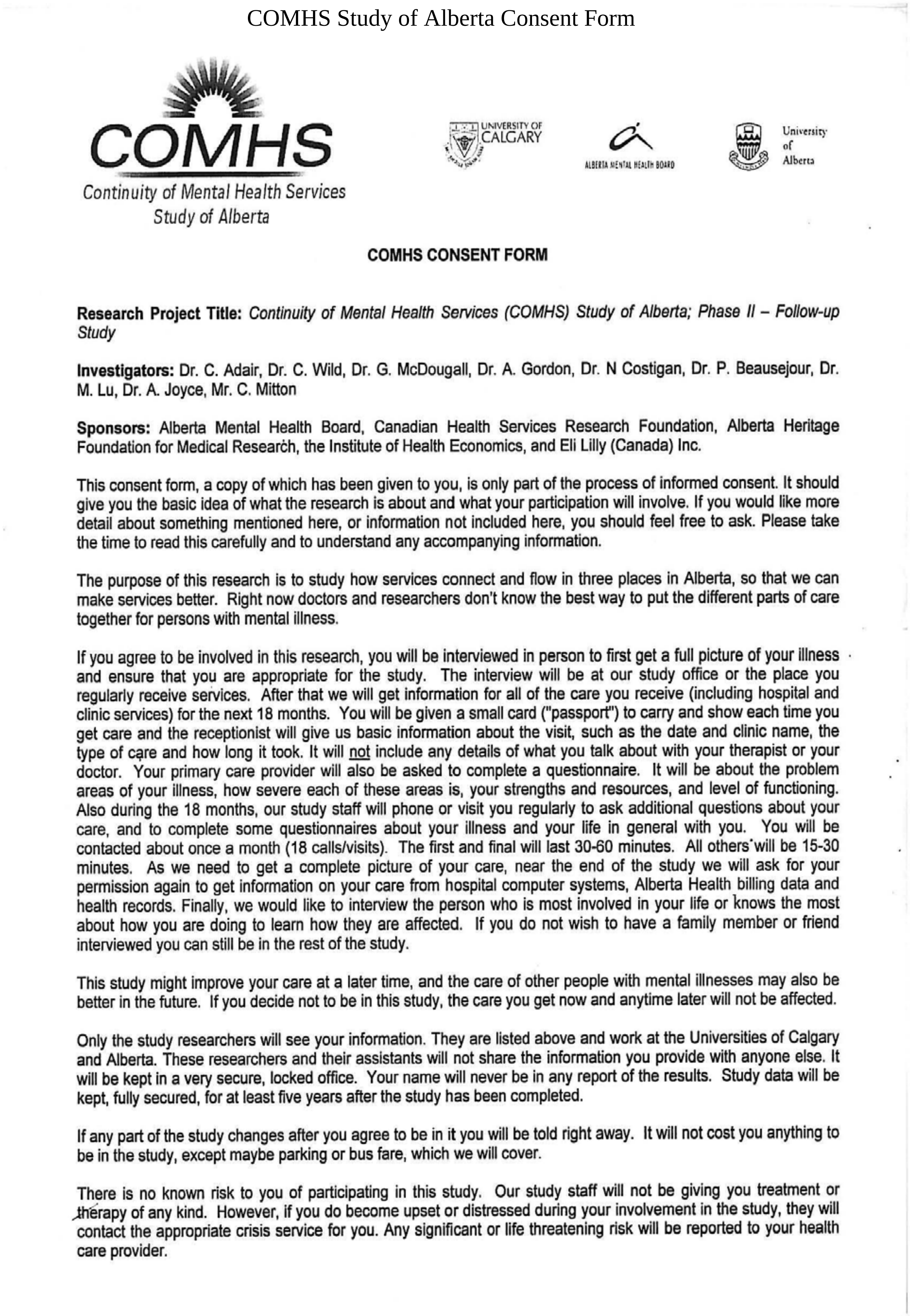
G Pasmeny.
Gloria Pasmeny

I am happy to provide access to the data from the COMHS Study of Alberta, as described above, upon approval of your study proposal by a duly designated Research Ethics Board in the province of Alberta. Best wishes on the successful completion of your study.

Carol E. Adair, MSc. PhD
Associate Professor
Depts. of Psychiatry and Community Health Sciences
Co-Lead, Population Mental Health Research Program
Faculty of Medicine
University of Calgary
#124 HMRB, 3330 Hospital Drive NW
Calgary, Alberta T2N 4N1
Office: (403) 210-8805
Fax: (403) 943-3144

Appendix J

COMHS Study of Alberta Consent Form



COMHS
Continuity of Mental Health Services
Study of Alberta

UNIVERSITY OF CALGARY

ALBERTA MENTAL HEALTH BOARD

University of Alberta

COMHS CONSENT FORM

Research Project Title: *Continuity of Mental Health Services (COMHS) Study of Alberta; Phase II – Follow-up Study*

Investigators: Dr. C. Adair, Dr. C. Wild, Dr. G. McDougall, Dr. A. Gordon, Dr. N Costigan, Dr. P. Beausejour, Dr. M. Lu, Dr. A. Joyce, Mr. C. Mitton

Sponsors: Alberta Mental Health Board, Canadian Health Services Research Foundation, Alberta Heritage Foundation for Medical Research, the Institute of Health Economics, and Eli Lilly (Canada) Inc.

This consent form, a copy of which has been given to you, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

The purpose of this research is to study how services connect and flow in three places in Alberta, so that we can make services better. Right now doctors and researchers don't know the best way to put the different parts of care together for persons with mental illness.

If you agree to be involved in this research, you will be interviewed in person to first get a full picture of your illness and ensure that you are appropriate for the study. The interview will be at our study office or the place you regularly receive services. After that we will get information for all of the care you receive (including hospital and clinic services) for the next 18 months. You will be given a small card ("passport") to carry and show each time you get care and the receptionist will give us basic information about the visit, such as the date and clinic name, the type of care and how long it took. It will not include any details of what you talk about with your therapist or your doctor. Your primary care provider will also be asked to complete a questionnaire. It will be about the problem areas of your illness, how severe each of these areas is, your strengths and resources, and level of functioning. Also during the 18 months, our study staff will phone or visit you regularly to ask additional questions about your care, and to complete some questionnaires about your illness and your life in general with you. You will be contacted about once a month (18 calls/visits). The first and final will last 30-60 minutes. All others will be 15-30 minutes. As we need to get a complete picture of your care, near the end of the study we will ask for your permission again to get information on your care from hospital computer systems, Alberta Health billing data and health records. Finally, we would like to interview the person who is most involved in your life or knows the most about how you are doing to learn how they are affected. If you do not wish to have a family member or friend interviewed you can still be in the rest of the study.

This study might improve your care at a later time, and the care of other people with mental illnesses may also be better in the future. If you decide not to be in this study, the care you get now and anytime later will not be affected.

Only the study researchers will see your information. They are listed above and work at the Universities of Calgary and Alberta. These researchers and their assistants will not share the information you provide with anyone else. It will be kept in a very secure, locked office. Your name will never be in any report of the results. Study data will be kept, fully secured, for at least five years after the study has been completed.

If any part of the study changes after you agree to be in it you will be told right away. It will not cost you anything to be in the study, except maybe parking or bus fare, which we will cover.

There is no known risk to you of participating in this study. Our study staff will not be giving you treatment or therapy of any kind. However, if you do become upset or distressed during your involvement in the study, they will contact the appropriate crisis service for you. Any significant or life threatening risk will be reported to your health care provider.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the investigators, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time without jeopardizing your health care. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation. If you have further questions concerning matters related to this research, please contact **Dr. Carol Adair** at 1-866-297-2701.

If you have any questions concerning your rights in this research, please contact Pat Evans, Associate Director, Internal Awards, Research Services, University of Calgary, at 220-3782 or the Patient Concerns Office of the Capital Health Authority at (780) 492-9790.

The information gathered for this study may be looked at again in the future to help us answer other study questions. If so, the ethics board will first review the study to ensure the information is used ethically.

Do you understand that you have been asked to be in a research study?	Yes	No
Do you understand that you have been asked permission to access your records from the hospital, Alberta Health, and health records?	Yes	No
Do you understand that you have been asked permission for your health care provider to release information to the researchers about your health status?	Yes	No
Have you read and received a copy of the attached Consent Form?	Yes	No
Do you understand the benefits and risks involved in taking part in this research study?	Yes	No
Have you had an opportunity to ask questions and discuss this study?	Yes	No
Do you understand that you are free to refuse to participate or withdraw from the study at any time? You do not have to give a reason and it will not affect your care.	Yes	No
Has the issue of confidentiality been explained to you? Do you understand who will have access to your records?	Yes	No

This study was explained to me by: ____

I agree to take part in this study.	Yes	No

______________________________	____________________	____________________________
Signature of Research Participant	Date	Witness
______________________________		____________________________
Printed Name		Printed Name

I believe that the person signing this form understands what is involved in the study and voluntarily agrees to participate.

______________________________	____________________
Signature of Investigator or Designee	Date