Influence of Social Support on Psychiatric Symptoms and Hospitalization: A Path

Analysis Delineating the Interaction

of Education, Employment, Income, and Perception of Financial Adequacy

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A thesis submitted to the University of Manitoba in partial fulfillment of the

requirements for the degree of Master of Arts in the Department of Psychology.

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INFLUENCE OF SOCIAL SUPPORT ON PSYCHIATRIC SYMPTOMS AND HOSPITALIZATION: A PATH

ANALYSIS DELINEATING THE INTERACTION OF EDUCATION, EMPLOYMENT, INCOME,

AND PERCEPTION OF FINANCIAL ADEQUACY

BY

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Abstract

Social support, education, employment, and income measures have all been found to be inversely related to both physical and psychiatric illness. This research used path-analytic techniques to determine the influence that social support (contact frequency and perception of support), and other social functioning variables (including: education, employment, income, and perception of financial adequacy) have on psychiatric symptomatology and the extent of psychiatric hospitalization. A short mail survey was sent to all members ($\underline{N}$ = 922) of The Society for Depression and Manic-Depression of Manitoba. The client members of the society (approximately 600) were asked to complete and return the surveys, resulting in a client response rate of 36%. The direct and indirect relationships between social support, social functioning, symptomatology, and length of psychiatric hospitalization were examined. Control variables included: gender, marital or cohabitation status, urban/rural distinction, and age; none of them influenced the basic relationships between the support and illness variables. The significance of all the effects were evaluated using one-tailed hypothesis tests with an alpha level of .05. Social support, assessed as contact frequency and satisfaction with support, was inversely related to psychiatric symptomatology in both a direct and an indirect manner. Psychiatric hospitalization was positively related to both support

measures. Limitations pertaining to causal inference with cross-sectional designs

are discussed.

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Introduction

The 1980s signaled changes in the provision of health care for

psychiatrically ill clients (Orford, 1986). These changes were partially because of

Goffman's (1961) work on the negative effects of institutional treatment on

psychiatric patients. However, according to Levine (1981), many other forces

played a role in changing the treatment of psychiatric clients. Changes occurred

from improvements in treatment protocols brought about by the advances in

pharmacotherapy research. Many mentally ill could be medicated through the

worst of their symptoms and ceased to be a danger to themselves or others. The

fiscal conservatism movement mandated treating individuals in the most cost

effective manner. State run institutions were more expensive to run than were

smaller community-based programs. Another movement influencing the shift from

institutional treatment to more of a community-based one involved the civil

libertarian doctrine. This movement forced governments to recognize that mentally

ill individuals had a right to live outside of institutions for the mentally ill in the

least restrictive environment that would ensure they were not a threat to

themselves or others. The last of the major changes in the treatment of the

psychiatrically impaired involved improvements in alternative community-based

programs. For an extensive review of the historical and political development of

the mental health system from the state hospital model to the more community-based treatment system the reader is referred to Levine (1981).

The community-based care movement was born from the beliefs that long-term hospitalizations contributed to isolation, fostered dependency, made it difficult for mentally ill individuals to return to their position in the general (normal) population, and that a person's life quality should improve out of the hospital (Brown & Parrish, 1987). Health care services available for psychiatric clients have improved over the last two decades (Pietzcker & Gaebel, 1987). American hospitals, are smaller, better staffed, have more of a treatment orientation, and non-hospital community settings are also more available (Mechanic, 1989). However, important questions remain about what treatment and social environment are optimal for clients with major psychiatric disorders.

Affective disorders, including unipolar and bipolar depression, are considered major psychiatric mood disorders (Goodwin & Jamison, 1990). Depression is both a symptom state and a psychiatric condition (Mechanic, 1989). A person can be suffering depressive symptoms in response to an event or environmental stressor, but not be diagnosed as suffering from either a bipolar or unipolar depressive psychiatric condition (Goodwin & Jamison, 1990). Another person may be diagnosed as suffering from a depressive condition; however, they

may not display the visible symptoms of depression (Mechanic, 1989). In simple

terms, the difference between someone suffering from depressive symptoms at one

point in time and someone diagnosed with a depressive disorder appears to be due

to the repetitive nature (chronicity) of the symptoms. Depression in normal

population members is also physiologically and psychologically distinct from the

more severe conditions of those of psychiatric hospital clients (Hall & Johnson,

1988). Depressive symptoms do not necessarily develop into the more chronic

conditions that would be considered major psychiatric disorders; however, the

clinical treatment of the symptoms may be very similar.

The treatment of clients with major psychiatric disorders often includes

hospitalization. Psychiatric hospitalization is an expensive component of the

treatment of clients suffering from affective disorders. Both unipolar and bipolar

clients are often hospitalized repeatedly (Goodwin & Jamison, 1990). Of persons

hospitalized with a major unipolar depressive episode, between 50-85% will have

one or more subsequent episodes leading to hospitalization (Papolos & Papolos,

1987). Bipolar patients are often hospitalized because of the high risk of suicide

(Goodwin & Jamison, 1990).

Atkinson, Leim, and Leim (1986) stated that researchers need to accept,

as a fundamental concept, the socially structured interdependence of life and stress

events. According to Eisemann (1984), investigators must take more of a

multifactorial view of the etiology and development of depressive disorders.

"Family situations, personality of the mentally ill person, stressors in the

environment, economics, and peers all interact to shape how the chronic patient

copes" (Lewis, 1990, p. 925). According to Olsen, Olsen, Gunner-Svensson, and

Waldstrom (1991), research supports the notion that social relationships influence

health. Isolation is believed to play an etiological role in the development of certain

psychiatric disorders, including depression (Wilkinson, 1975). Social functioning

variables like social support, education, unemployment, income, and poverty have

all been found to influence psychiatric disposition. The subsequent introductory

sections of this exposition will discuss the relationships between these social

functioning variables (social support, education, employment, income, and

perception of financial adequacy) and how they may influence psychiatric

symptomatology and clients' use of psychiatric hospital resources. Path-analytic

models are also presented in an attempt to explain how these variables may be

causally interrelated.

<div align="center">Social Support</div>

The idea that social environment is important in explaining susceptibility

or adaptation to disease can be traced to Durkheim's classic research on European

suicide rates (Durkheim, 1951). In the mid 1960's, researchers began to study the

effects of social structure on well-being at an individual level (Lin & Ensel, 1989).

More recent work in this area has focused on the role of human relationships and

social support in modifying the negative effects of life stressors on mental and

physical health (Sherkat & Reed, 1992).

The most basic definition of social support is summed up as the

resources supplied by other persons (Cohen & Syme, 1985). According to Leavy

(1983), social support includes the tangible and intangible assistance that people

receive from friends, family members, and others in their social network. "Early

researchers conceptualized social support as a generalized resource available from

one's network of friends and acquaintances (the social network) that helped one to

deal with everyday problems or more serious crises"(Walker, Wasserman, &

Wellman, 1993, p. 71). According to Falk, Hanson, Isacsson, and Ostergren

(1992), a more current description of social support includes emotional support,

informational support, and material support. Possibly the most encompassing

definition of the support concept is summarized by Weiss's (1974) five functions of

support. These five functions include: indicating personal value, a belonging as in

group membership, providing for attachment and intimacy needs, supplying a

needed opportunity for nurturance, and ensuring the availability of help in the

forms of information, emotional, and material aid.

It is generally accepted that individuals need to maintain a basic social support resource for adequate psychiatric and physical well-being (Reis, 1988). Strong empirical evidence indicates that a causal relationship exists between an individual's social interactions and health (House, Landis, & Umberson, 1988). This conclusion is presently unchallenged (Olsen, 1993). However, some controversy remains about exactly what amounts and roles of support are related to the etiology of psychiatric disorders. Blazer and Williams (1980) believed that certain social network characteristics, such as low contact levels, are associated with poor physical health and mental health outcomes. Historically, reduced levels of social support have been associated consistently with physical and psychiatric illness (Brown, Bhrolchain, & Harris, 1975), especially depressive disorders. Yet, research about the family social factors influencing schizophrenia indicate that high levels of patient contact with relatives high in 'expressed emotion' increases relapse rates (Bebbington & Kuipers, 1994). These findings are complicated by the fact that the onset of schizophrenia cannot be clearly pinpointed. "Progression then becomes entwined with social functioning, making it difficult to distinguish whether the onset precedes a decline in social functioning or vice versa" (Turnbull, George, & Landerman, 1990, p. 838). According to Meuller (1980), social

network structure and demographic characteristics must be carefully examined since excessive negative family interaction is also not beneficial for those with depressive disorders.

The literature on the influence of social support on health is extensive. For comprehensive reviews and a discussion of the conceptual and methodological difficulties in this field the reader is referred to Aneshensel and Stone (1983), Cohen and Willis (1985), Leavy (1983), or Thoits (1982). The definitions of social support, theoretical perspectives, measures of adjustment, and results vary across studies. According to Hammer, Gutwirth, and Phillips (1982), both network size and frequency of contact may be important for health. The relative importance of different social support properties for psychological and physical adjustment is not clear. Is it the quantity of support received, the perceived availability or adequacy of support, the size or density of the support network, or satisfaction with the support received that is important for well-being? "Clarification of these issues has both theoretical and clinical implications" (Fiore, Coppel, Becker, & Cox, 1986, p. 95).

Researchers studying the effect of psychosocial support have taken two basic approaches to measuring the social support construct (Henderson, Duncan-Jones, McAuley, & Ritchie, 1978). The first approach concentrates on the

quantitative aspects of social support (Fiore et al., 1986) and operationalizes the

support variable in structural terms, that is, in terms of the number or frequency of

social ties to network members. Frequency or structural measures assess social

support in terms of social integration (House & Kahn, 1985). The second

approach to the measurement of social support focuses on the quality or function

of the available social network (Patrick, Morgan, & Charlton, 1986). Functional

measures assess the perceived quality of one's relationships or "what Gottlieb has

called the 'psychological sense of support'"(Bolger & Eckenrode, 1991, p. 440).

Although both structural and functional approaches are used to measure social

support and focus on different aspects of the support construct, they are not

necessarily mutually exclusive or measuring different entities (Patrick et al., 1986).

In addition to the two basic measurement concepts, there are also two

theoretical approaches applied by researchers to explain the effects of social

support on health. Overall, theories propose that having access to and interacting

with support networks reduces the effect of stressful life events on overall

well-being (Sherkat & Reed, 1992). According to Falk et al. (1992), the effect of

social network and social support on health may be mediated through different

causal pathways. Social support has been hypothesized to have either a direct or

indirect effect on health. According to Sherkat and Reed (1992), social support has

a direct effect on mental and physical health when it improves health independent of the stressors that may be present. The indirect theories that explain the influence of social support on well-being include mediation, interaction, and buffering. A mediating effect is said to have occurred when social support reduces the effects of stressful life events (Sherkat & Reed, 1992). The buffering or interactive effect exists when, in the presence of a stressful event, social support reduces health consequences (Lin & Ensel, 1989).

Available literature supports both a direct and indirect explanation of the effect of social support on mental and physical health. Higher levels of social support have been found to have a direct beneficial effect on psychological well-being (Arling, 1987; House, Robbins, & Metzner, 1982). The direct effects hypothesis proposes that social supports operate directly to maintain or improve health and to prevent illness (Patrick et al., 1986; Thoits 1982) either in the presence or absence of stressful life events (Aneshensel & Stone, 1983).

Various population studies have shown the absence or perceived absence of social supports, infrequent social contact, and changes in a person's network of support are directly related to higher rates of general pathology (Kessler & McLeod, 1985), emotional distress (Revicki & Mitchell, 1990), and depressive symptomatology (Reis, 1988; Schulz, Tompkins, Wood, & Decker, 1987). In

clients dealing with grief, the utilization of support, the quality of support, and social integration or frequency of support all have significant, direct negative effects on depressive symptoms (Sherkat & Reed, 1992). Williams, Ware, and Donald (1981), in a longitudinal general population study, suggested that an additive model of direct effects best explains the relationship between support, life events, and mental health. Their direct model approach proposes that stressful life events have a direct negative effect on mental health outcomes, while social support is seen to have a positive direct effect. On the other hand, according to Patrick et al. (1986), deterioration in well-being was greatest for respondents with a low level of support independent of adverse life events exposure in their sample of disabled individuals. However, "the overall pattern of results gives weak evidence for both buffer and direct effects" (Patrick et al., p. 1353).

Contrary to direct theories, strictly indirect, mediating, or stress-buffering models propose that support and negative life events interact and that support only has an impact during stressful life events (Cleary & Kessler, 1982). In buffering theories, social resources work to buffer the effects of acute or chronic life strain on psychological distress (Wheaton, 1985; Wilcox, 1981). Social support may also serve to moderate stressful experiences, thereby reducing the negative effects that such experiences otherwise would have on psychological functioning (Husnaini,

1982; Turner & Noh, 1983).

The research results on the effects of social support in buffering stress are not consistent (Atkinson et al., 1986). Usually, weak social support correlates with more physical and mental health complications (LaRocco, House, & French, 1980). Higher levels of social support, in the presence of stressful events are associated with a reduced risk of depression (Brown & Harris, 1978). Buffering effects vary depending upon the type of support available, the type and/or intensity of the stressors (Falk et al., 1992), social class (Turner & Noh, 1983), and employment status. Pearlin, Lieberman, Menaghan, and Mullan (1981) concluded that social supports did not protect the unemployed directly against depression, but indirectly by reducing the job losers' negative views of themselves resulting from the loss of employment.

A controversy remains over whether social support and mental health are related through a direct or indirect effect (Sherbourne, 1988). Some have argued that having few social support resources can by itself be stressful and have a direct influence upon psychological symptomatology (Aneshensel & Fredricks, 1982; Thoits, 1983). Yet, other researchers believe that social support acts only as a buffer or moderator when life stressors are present (Henderson, 1981; Pearlin et al., 1981). Reviews by Cohen and Willis (1985) and Kessler and McLeod (1985)

suggest that buffering may occur only with perceived or functional support measures, while more structural measures like network membership may influence mental health directly. According to Ullah, Banks, and Warr (1985), neither the direct nor the indirect approaches may be comprehensive enough to explain the entire relationship between social support, life events, and psychological health. Other researchers have found evidence that social support can act in a direct and indirect manner simultaneously [see Bolton & Oatley, 1987; Cohen & Willis, 1985]. Because of the apparent contradictions in the literature, Sherkat and Reed (1992) have argued for a more in-depth analysis of both the direct and indirect effects of social support on well-being.

Much of the available literature on social support measures attempts to operationalize the global construct of social support. Few available studies have selectively explored the differential effects of various aspects of social support (Revicki & Mitchell, 1990). In general, the literature has neglected structural support variables, for example contact frequency with network members (House & Kahn, 1985), and few studies have tested the buffering effects of social support on stress in the most vulnerable, psychiatrically disturbed populations (Leavy, 1983). When researchers had evaluated the buffering effect of social support in psychiatric populations, most focused on neurotic or non-psychotic populations, neglecting

psychotic clients (Romans & McPherson, 1992).

Literature on the interaction effects of stressful life events with social support focuses on specific short duration stressors like a death in the family or temporary unemployment. Yet, according to Revicki and Mitchell (1990), chronic stressors appear to be more salient in predicting psychological well-being than discrete stressful life events, at least in an elderly population. According to Sherkat and Reed (1992), simple models that describe the relationship between stressful life events, social support, and negative health consequences are mis-specified because they do not consider factors that intervene in these relationships.

Traditionally, the literature that tests stress buffering theory assumes that social supports and stressful life events are independent of one another (Brugha, Bebbington, Sturt, MacCarthy, & Wykes, 1990). However, Atkinson et al. (1986) have argued that the assumption of independence between stressors and supports seems tenuous, considering that social support indices and stressful life events are often correlated (Carveth & Gottlieb, 1979).

Social support is widely accepted as a multidimensional construct (Cobb, 1979). According to Reis (1988) numerous different compound measures of social support are used in the research literature, and this is generally recognized to be a problem (Cohen & Syme, 1985). Yet, there are significant similarities among most

of the social support measures, and empirical results using these various measures tend to be consistent (Olsen, 1993).

Although both quantitative (structural) and qualitative (functional) measures of social support have been successfully used in the support literature, Revicki and Mitchell (1990) suggest that the buffering effect of social contacts is evaluated best as a quantitative or structural variable. This view is contrary to literature reviews by both Cohen and Willis (1985) and Kessler and McLeod (1985). According to these authors the reviews indicated that buffering effects appeared to be found most often with qualitative (perceived or functional) measures. Structural support indices are also considered the more objective or quantifiable social support measures (Finlayson, 1976; Mancini, 1979) and although they can be discriminated from, they underlie (Hanson & Ostergren, 1987), and correlate well with the more subjective functional (qualitative) variables (Sarason, Levine, Basham, & Sarason, 1983).

Gottlieb (1983) and Thoits (1982) have argued that the stress-buffering effects of social relationships may reflect a personal rather than an environmental factor. People's perceptions of social support are confounded with personality characteristics (Henderson, Byrne, & Duncan-Jones, 1981) and by prior mental health status (Monroe, Bromet, Connell, & Steiner, 1986). According to Brugha et

al. (1990), in a depressed cohort, the number of contacts clients made was stable but the perception of satisfaction with emotional support was less stable over time. Qualitative measures of social support, like perceptions of support, are more prone to the confounding effects of personality characteristics and prior mental health status than structural or quantitative measures (Bolger & Eckenrode, 1991).

Structural support measures indirectly indicate the availability or adequacy of social support (Sherbourne, 1988). Contact frequency is an index of the accessibility of individuals in a person's network (Cutrona, 1986), and network contact is a prerequisite for social support to occur (Vega, Kolody, Valle, & Weir, 1991). Those with more frequent contact with their networks ask for support more frequently and perceive support to be more available (Fiore et al., 1986). Also, according to Cutrona (1986), "frequent contact increases the speed with which an individual's needs for support would be communicated to others and would increase the probability that a supportive individual would be present to offer help when needs arise" (p. 349). Contact frequency indices are almost normally distributed and are more reliable (Hanson & Ostergren, 1987) and stable (Marsden, 1990) than items measuring number of individuals in the social network. However, a close association exists between items measuring number of individuals in a person's social network and contact frequency, making the latter

the quantitative social support variable of choice (Hanson & Ostergren, 1987).

Education

According to Hoffmann and Mastrianni (1993), the goal of education is to impart the logic of inquiry, discipline, and observation that make it possible for a person to develop a systematic knowledge of the world and self. Education increases cognitive flexibility and coping and exposes people to different ways of viewing life (Wheaton, 1980). Education also symbolizes worth to oneself and to others (Ross & Huber, 1985). Mastery and control are important for psychological well-being. Education appears to function not only by supplying a person with information, credentials, and skills but by reducing feelings of hopelessness and increasing active problem-solving approaches to life's stressors (Wheaton, 1980).

Individuals with higher levels of education appear to have better social support (i.e., friends who are well educated can better help with information) (Ross & Huber, 1985) and larger family incomes. Better educated individuals are also more likely to feel in control of their lives (Ross & Mirowsky, 1989) and experience more support since they have higher levels of friend contact as well (Vega et al., 1991). Education and income are two of the most important socioeconomic status indicators for psychological well-being (Ross & Huber, 1985). Well-educated persons suffer less from the economic hardship due to low

income than individuals who are poorly educated (Ross & Huber, 1985). Having

less education or belonging to the lower social classes is often related to higher

rates of disease, mortality and morbidity (Hanson & Ostergren, 1987). Persons

with higher levels of education (Sherkat & Reed, 1992), and larger family incomes

(Ross & Mirowsky, 1989) have lower levels of depression. Yet, Sherkat and

Reed's (1992) results indicated that after including support constructs in the

model, education's influence became non-significant. However, "persons with low

levels of education face a multiplication of disadvantages; they have lower levels of

control and of support. Either control or support could compensate for the

absence of the other, but poorly educated people lack both" (Ross & Mirowsky,

1989, p. 219). One's educational level also influences employment status (Costello,

1991). According to Friedman (1966; cited in Friis & Nanjundappa, 1986), lack of

an education and skills are severe employment impediments in competitive

employment markets.

Employment

Work, according to Szasz (1974), is the best general panacea known to

medical science (cited in Lloyd, 1986) and the relationship between employment

status and psychological well-being is complex (Roberts, Roberts, & Stevenson,

1982). According to Murray-Parkes (1979), when working was necessary just to

avoid starvation, work functioned to obtain food. However, when social policies

provided food for unemployed individuals, it became apparent that work served

other functions. Apart from meeting physical needs, work fulfills a number of

important social and psychological needs (Jahoda, 1982). Employment seems to

offer the individual a means of structuring time purposefully, allows for personal

development, and provides opportunities for social interaction (Lloyd, 1986).

Social roles such as employment allow people to feel worthwhile (Bolton &

Oatley, 1987). The status ascribed to particular forms of employment provides the

individual with a self-image, self-esteem and a way of relating to society (Lloyd,

1986). Employment is an important social marker and all individuals experiencing

unemployment should be significantly influenced (Brenner & Mooney, 1983).

Unemployment, especially for prolonged periods, is a severe stressful life

event (Pearlin, 1982) that threatens physical security, social identity (Weber,

1946), and self-esteem (Dressler, 1986). Joblessness, by itself, creates stress that

can aggravate or cause health problems (B. S. Dohrenwend, Krasnoff, Askenasy,

& Dohrenwend, 1978). In general populations, unemployment has been directly

associated with increases in psychiatric admissions (Ahr, Gorodezky, & Cho,

1981), perceived physical illness, anger, paranoia, drinking problems, family

conflict (Kirsh, 1983), general psychological distress (Brenner & Starrin, 1988),

anxiety (Cobb & Kasl, 1977; cited in Hamilton, 1993), and depressive

symptomatology (Friis & Nanjundappa, 1986). According to Madonia (1983),

unemployed individuals who are used to the daily structure and psychological

gratifications of employment may feel insecure, inadequate, and display a decrease

in autonomous behavior and an increase in dependency. According to Bond and

Feather (1988), unemployed individuals who reported higher levels of daily

structure and purpose in their use of time had a higher self-esteem and fewer

depressive symptoms.

The anxiety (Cobb & Kasl, 1977; cited in Hamilton, Hoffman, Broman,

& Rauma, 1993) and distress (Brenner & Starrin, 1988) associated with

unemployment peak early in the experience and eventually fade (Hamilton et al.,

1993). Depression, on the other hand, can be a long lasting mental health

consequence of unemployment (Perrucci et al., 1988; cited in Hamilton et al.,

1993). Unemployed individuals, even after controlling for other sociodemographic

variables, were found to have significantly elevated rates of depressive symptoms

(Dressler, 1986). According to Madonia (1983), debilitating psychiatric

symptomatology resulting from unemployment may require crisis intervention and

short-term psychotherapy. Yet, an individual's psychological response to

unemployment is not uniform (Liem & Rayman, 1982).

The experience of unemployment can be modified by other depression related variables; however, unemployment also has an independent effect on depressive symptoms (Dressler, 1986). According to Dressler, having a smaller income, being female, and younger are related to higher levels of depressive symptomatology. However, after controlling for these demographic characteristics, depressive symptoms are higher among the unemployed, those with less education, those who perceive themselves as beset by more chronic non-economic life changes (Dressler, 1986), and those with fewer financial and social support resources (Brown & Lawrence, 1985). In fact, the impacts of other non-economic stressful life events are exacerbated as the person's ability to adjust is compromised by unemployment (Dressler, 1986).

The relationship between social support and employment is complex and non-recursive in nature. Being employed increases one's social support since employed individuals usually have larger social networks (Atkinson et al., 1986) and interact with more people on a daily basis (Hammer et al., 1982). As far back as the Great Depression, unemployment has been found to lead to increases in the social isolation of the non-working individual (cited in Feather, 1989; Bakke, 1933). According to Atkinson et al. (1986), the social networks of unemployed and re-employed individuals tended to be in 'flux' and unemployed individuals

report experiencing lower levels of support over time. However, one's pre-unemployment level of social support has been found to influence an individual's response to unemployment. Social support helps to moderate the effects of unemployment on mental health (Gore, 1978). The lack or loss of employment can cause depression, especially when no alternative source of social interaction and support are available for the unemployed individual (Bolton & Oatley, 1987). According to Cohen and Willis (1985), social support buffers the negative psychological effects of unemployment by providing protection from the total loss of social interaction opportunities that are important for an individual's sense of worth.

Both direct and buffering theories have been proposed to explain the moderating effect of social support on the harmful effects of unemployment. According to Ullah et al. (1985), the direct effects model proposes that the beneficial effects of support exert only an overall main effect that is similar across unemployed individuals, while the stress-buffering model suggests that support interacts with other moderator variables affecting the experience of unemployment. According to Bolton and Oatley (1987), low levels of social support act both as an independent stressor, and via statistical interaction, to make people vulnerable to adversity (see: Cohen & Willis, 1985; Leavy, 1983; Oatley & Bolton, 1985).

The literature on unemployment and its relationship to social support and psychiatric symptomatology is complex and often confounded by the non-recursive relationships between the variables involved, leading to a less powerful test of theories with standard statistical methodologies (Cohen & Willis, 1985). For example, stressors, like unemployment, and potential supports are dependent; "individuals with poor social support may have higher psychological symptom levels, not because they had limited support for coping with stress, but because unemployment produced both elevated symptoms and lowered support" (Atkinson et al., 1986, p. 327). According to Hall and Johnson (1988), being subjected to a stressful life event and low social support greatly increases the risk of depression, especially for the unemployed.

Little literature is available concerning the impact of being unemployed in populations that are most likely at risk of experiencing the event. Much of the literature focuses on the effects of unemployment in general populations: few studies have dealt with the effects of work status and those with psychiatric impairments (Lindsey & Ozawa, 1979). Depressive symptomatology displayed by general population members is usually physiologically and psychologically distinct from more severe conditions observed in psychiatric hospital clients (Hall & Johnson, 1988).

Socioeconomic Status, Income, and Financial Adequacy

Studies using North American populations usually find an inverse

relationship between socioeconomic status and psychopathology (Kessler, 1982;

Kessler & Cleary, 1980). However, the relationship between socioeconomic

factors and diagnostic categories vary (Link, Lenon, & Dohrenwend, 1993).

Socioeconomic status can influence psychological distress (Dohrenwend, 1969),

length of psychiatric hospital stays (Mai et al., 1993), and treatment of psychiatric

symptomatology (i.e., whether psychiatric hospitalization is recommended over

community-based treatment) (Mollica & Milic, 1986). Yet, socioeconomic status

does not predict recovery from psychiatric symptomatology (Keitner, Ryan, Miller,

& Norman, 1992). Pearlin et al. (1981), believed that the relationship between

socioeconomic status and psychiatric distress is mediated by financial resources.

The demands and resources of positions in the social hierarchy create differences in

distress levels (Pearlin et al., 1981) and financial stresses are positively related to

psychological distress, including depressive symptomatology (Feather, 1989).

According to Dooley and Catalano (1980) decrements in socioeconomic status

constitute stressful life events and have been reported to be related to the

appearance of psychological symptoms.

Socioeconomic status and the existence of economic hardship are usually

determined by the individual's available financial resources. Individuals who are

hampered in their abilities to generate economic resources are at greater risk for

stress-related outcomes and depression (McKenry, Browne, & Kotch, 1990).

"Family income, from whatever source--a spouse's earnings, social security, or

public assistance--is important to psychological well-being because it allows one to

pay the bills, feed, clothe, and care for the health of one's family" (Ross & Huber,

1985, p. 316). Lack of financial resources reduces an individual's ability to meet

basic needs thereby influencing psychological health and adjustment (Feather,

1989). Economically disadvantaged individuals, below the poverty level, have been

found to have significantly higher rates of depressive symptoms and more frequent

lifetime diagnoses of major unipolar depression (Narrow, Rae, Moscicki, Locke, &

Regier, 1990). Incomes of less than $20,000 are negatively correlated with

dysthymia rates (Weissman, Leaf, Bruce, & Florio, 1988).

After According to Maffeo, Ford, and Lavin (1990), family and personal

income both influence depressive symptomatolgy, with low family income

creating financial stress and low personal income acting negatively on self-esteem.

Personal earnings symbolize worth in North American society, making an

individual's income important for self-esteem (Ross & Huber, 1985). Although the

income from unemployment compensation (Ross & Huber, 1985) and welfare

(Serban & Thomas, 1974) is important to pay the most basic of expenses, this kind

of income does nothing for an individual's self-worth. In fact, welfare creates a

psychological factor that undermines psychiatric care and promotes further

deterioration of the recipient's status and self-concept (Serban & Thomas, 1974).

Income, from whatever source, interacts with unemployment, education,

and social support contributing to mental health outcomes. Studies of mental

health problems in the unemployed often underestimate the importance of financial

concerns (Rodgers, 1991), yet financial problems (e.g., household income)

moderate the relationship between unemployment and depressive symptoms

(Frese, 1987). According to Feather (1989), economic hardship measures are

needed when the psychological effects of unemployment are evaluated since

financial problems are much higher in individuals without employment (Frese &

Mohr, 1987). Chronically unemployed individuals face economic hardship due to a

lack of financial support leading to a loss of control and subsequent feelings of

helplessness and depression (Ross & Huber, 1985).

A high positive correlation exists between education and income (Brown

& Lawrence, 1985) and low levels of both variables are associated with an

increased risk for psychiatric symptomatology (Ross & Mirowsky, 1989). Poverty

synergistically interacts with a lack of education creating more economic hardship;

low education translates into low earnings and low education increases the

difficulties of dealing with low income (Ross & Huber, 1985). Depressive

symptomatology can aggravate the extent of a client's dissatisfaction with financial

status, yet Carpiniello, Catra, and Rudas, (1989) were inclined to believe that

financial adequacy was more likely to be driving the depressive symptomatology.

These two factors can be circular in their effect on the poorer and more afflicted.

Poorer individuals are more likely to suffer depressive symptomatology resulting in

lost capacity to work, reducing income, creating financial strain, leading to more

depressive symptomatology.

Loss of income, resulting from unemployment, causes disruptions in the

family and non-familial social relationships (Fryer, 1988), reduces social interaction

(Aiken, Ferman & Sheppard, 1968), and eliminates sources of recreation and other

stress-reducing activities (Madonia, 1983). The unemployed spend progressively

less time in activities that require spending money leading to an increase in passive

unstructured use of time and lower scores on indicators of psychological health

and adjustment (Feather, 1989). Financial difficulties and poverty lead to a

reduction of the scope of one's social life facilitating the development of depression

(Frese, 1987).

According to Auslander (1988), few existing research studies focus on

the health effects of social networks among the poor; yet both poverty and poor

social support have been shown to influence health and the poor have been shown

to have fewer network resources. Overall, economically disadvantaged individuals

have been found to have smaller social networks (Fisher, 1982), fewer friends

(Auslander, 1988), poorer social adjustment (Garvin, Kalter, & Hansell, 1993),

and less frequent contact with network members (Rosenberg, 1970). The effect of

poverty on health is buffered by frequent contact with friends and family and this

relationship is even more important for the poor than for general populations. The

"poor who had no ties or saw them infrequently were in worse health than those

who saw their ties more frequently" (Auslander, 1988, p. 206).

According to Pearlin et al. (1981), the influence of chronic stress on the

relationship between socioeconomic status and health has received little attention

in the literature. Yet, chronic economic difficulties are extremely important factors

in the etiology of depression (Ross & Huber, 1985). Pearlin et al. (1981) proposed

that chronic economic strain may help in explaining the relationship between

income and depression; as income decreases economic hardship increases and as a

result, depression also worsens. However, the correlation between income and

depressive symptomatology is problematic; most of the difficulty arises from the

lack of clear distinctions between subjective dissatisfaction and objective financial

measures (Carpiniello et al., 1989). Income does not have a direct effect on perceptions of level of living (Marans & Rogers, 1975; cited in Keith, 1985), but indirectly through its effect on perceived adequacy of income (Keith, 1985). According to Marans and Rogers, objective status characteristics, like family income, are insufficient to explain assessments of one's environment, attitudes, or satisfaction with various dimensions of life. Subjective dimensions (perceptions) mediate the objective characteristics of the environment (Laing, Kahana, & Doherty, 1980). While objective measures of family income have a large impact on perceived economic hardship, the perceptions are not a one-to-one reflection of income (Ross & Huber, 1985).

Hospitalization

In developed countries, psychiatric hospitalization has historically been the main form of treatment for the mentally ill with major mental disorders (Reynolds & Hoult, 1984). However, prolonged psychiatric hospitalization can lead to negative consequences including: dependence and helplessness (Decker, 1972), stagnation of employment and social skills, internalization of the patient role (leading to chronicity) (Freeman, 1980), stigmatization leading to community members distancing themselves from the ex-patient (Link, 1982), and difficulty in assuming roles previously held in one's social environment (Hoffmann &

Mastrianni, 1993). With the arrival of the community mental health movement, the

delivery of mental health services has changed (d'Arcy, 1978). The goals of this

movement were to benefit psychiatric clients by reducing the negative effects of

prolonged psychiatric confinement, providing psychiatric health services in a more

normal environment (Hoffmann & Mastrianni, 1993), and shortening psychiatric

hospital stays (d'Arcy, 1978). This movement has resulted in less restrictive,

short-term, and crisis intervention style treatment options (Caton & Gralnick,

1987). Yet, psychiatric hospitalization remains a large part of the appropriate

medical treatment of individuals with chronic psychiatric illnesses (Solomon,

Davis, & Gordon, 1984).

Hospitalized psychiatric clients consume large quantities of health care

resources. According to Bengelsdorf, Church, Kaye, Orlowski, and Alden (1993),

whenever possible, avoiding hospital admissions by substituting prompt, intensive

outpatient treatment can save both the human and financial costs of extended

hospital stays. Yet these authors warn against cost-cutting at the expense of

humane and safe care for the more seriously ill.

Explaining the use of mental health resources is important for ensuring

the availability of appropriate treatment for psychiatric clients and controlling

medical expenses. Usage of mental health resources is influenced not only by client

status, but many administrative, political, social, and legal factors (Lewis & Hugi,

1981). Since short hospital stays were found neither to increase the likelihood of

readmission (Baker & Rochon, 1989) nor deteriorate the quality of care received

(Schwarz, 1988), changes in social policy and court rulings have aimed at, and

resulted in, shorter stays in inpatient psychiatric facilities (Mai, Gosselin, Varan,

Bourgon, & Navarro, 1993).

The majority of literature on the factors influencing the usage of mental

health resources focuses on readmission rates. More frequent admissions obviously

lead to an increase in total length of stay and resource usage; however, admission

rates do not, by themselves, portray the entire picture of mental health service

utilization. Clients with longer hospital durations are more likely to be

rehospitalized in the future (Davis, 1985).

Mental health service usage, measured as: length of psychiatric stay(s),

admission rates, and costs, are influenced by numerous variables including the

client's mental status or symptomatology (Ware, Manning, Duan, Wells &

Newhouse, 1984; cited in Sherbourne, 1988). However, the psychiatric client's

symptoms (Keitner et al., 1992) and diagnosis related groups are poor predictors

of resource use (Essock & Norquist, 1988; Mattes, 1987). According to Mai et al.

(1993), age, sex, marital status, the presence of concomitant physical illness,

previous psychiatric admissions, involuntary admission, and social functioning have

all been shown to influence average length of psychiatric hospital stays. Although

sex and age correlate with length of hospital stays (Taube et al., 1984), by

themselves, they do not improve significantly the prediction of resource use

(Gordon, Vijay, Sloate, Burket, & Gordon, 1985). According to Keitner et al.

(1992), a patient's age, education, and socioeconomic status do not help in

predicting recovery rates either.

Length of stays in a psychiatric facility is influenced by economic,

demographic and social characteristics (Laessle, Yassouridis, & Pfister, 1988; Mai

et al., 1993). When economic conditions are poor, patients return to the hospital

more frequently (Ahr et al., 1981). According to Allen, Coyne, Lyle, and Spohn

(1992), longer stays in a psychiatric facility are also associated with poor pre-

morbid functioning, a more chronic course, and less outside support. American

clients who are repeatedly admitted to psychiatric facilities appear to suffer from

both social and economic problems (Munves, Trimboli, & North, 1983) and these

types of factors, in a Canadian teaching facility, were found to contribute to

extended stays (Mai et al., 1993).

Social support factors and life stress events influence psychiatric

symptomatology and service usage. However, the relationships between social

support, life stress, and mental health resource use depend upon the type of stress assessed and how social support is evaluated (Sherbourne, 1988). Therefore, researchers need to evaluate different types of stressors and which components of social support predict mental health service usage. Also, Cohen and Sokolovsky (1978) believed that a stronger focus should be placed on separating out the effects of qualitative versus quantitative dimensions of the support concept.

A positive association between isolation and psychiatric symptomatology exists (Wilkinson, 1975). According to Sherbourne (1988), regardless of life stress events, the presence of friends and relatives reduces the use of mental health services. Whether social support works directly on mental health service consumption, or indirectly through a buffering mechanism, is not clear. Sherbourne found chronic stressors were important predictors of service use, but acute stressors neither predicted service use, nor were reactions to acute stressors buffered by the available social support. These results indicate that it may be the chronicity of the stressor that is the important factor in the use of mental health services.

Lack of social support, inadequate income, and unemployment are chronic stressors that have been found to contribute to both readmission rates and extended hospital stays. "Those who are rehospitalized are likely to be in a state of

socio-psychological-economic dependency, have poor interpersonal relationships

with significant others, lack meaningful social outlets, and have poor

self-images"(Franklin, Kittredge, & Thrasher 1975, p. 751). Clients with

inadequate social support upon discharge are admitted more often and stay in the

psychiatric facility longer (Holsten & D'Elia, 1985). Readmitted patients also have

fewer visitors (Franklin et al., 1975).

   According to Allen et al. (1992), the relationship between unemployment

and psychiatric hospitalization is hard to disentangle. Patients who have had to

spend a lot of time in the hospital are likely to have poor employment records. As

a result, they are also likely to have difficulty finding employment (Allen et al.,

1992). Clients who receive income from employment (either theirs or family

members') were less likely to be readmitted (Franklin et al., 1975). Individuals

receiving financial support from social assistance (Ahr et al., 1981) or who were

young (Davis, 1985), or unemployed (Woogh, 1986) were more likely to be

readmitted. Lower levels of education are associated positively with psychiatric

admission rates (Levav & Arnon, 1976). However, overall, hospitalized or

readmitted clients are not likely to be from among the less educated (Woogh,

1986).

Path Analysis

Path analysis was originally developed by Sewell Wright (1921, 1934), a genetic statistician, for analyzing the causal relationships between measured variables. Burkes (1928) and Peaker (1971) extended path analysis to the field of education while others applied these techniques in the social sciences (Blalock, 1961, 1968; Duncan, 1966). Keves (1988) examined the fundamental principles underlying path analysis for measured variables and Loehlin (1987) discussed the basic analysis of latent variables. Path analysis has developed to date into a complex set of approaches and computer programs that explain the relationships between both measured and latent variables in both recursive and nonrecursive models. In recursive models the flow of causation is unidirectional in nature. Unlike the recursive model, the nonrecursive model allows for reciprocal causal feedback loops. Nonrecursive models are very difficult to understand and require complex statistical techniques for estimating effects (Cohen & Cohen, 1983).

Linear causal modeling, including path analysis procedures, permits a researcher to examine networks of interrelated variables. A basic assumption underlying path analysis is the specification of the model by temporally ordering the theoretically salient variables. Causal analysis in this instance is different from experimental causation as there is not one cause-effect relationship to be

manipulated or considered, but rather a complex network of linkages among all the

unmanipulated variables involved. According to Hamilton et al. (1993), causal

modeling research is quasi-experimental in nature and models represent 'pictures of

possible reality'. Unlike an experimental intervention, tests of the theorized models

do not "constitute the construction of that reality" (p. 244). Causal inferences must

be more tentative since quasi experimental designs, including path analysis, cannot

prove causality (Spady & Greenwood, 1971). Path analysis allows one to estimate

the magnitude of the relationship between the variables in the specified model and

uses these estimates to provide information about the underlying causal processes

(Spady & Greenwood, 1971). The match between theoretically driven or expected

major pathways and those obtained from the data is generally believed to provide a

reasonable estimate of the validity of the model (Berry & Williams, 1987). "While

it is possible to test the mathematical accuracy of a simple model, its causal validity

(including comprehensiveness) can only be supported on theoretical and

substantive grounds" (Spady & Greenwood, 1971, p. 3).

Kendall and O'Muircheartaigh (1977) discussed two basic types of path

models, the saturated additive model and the unsaturated model. A saturated

model is a recursive model in which each variable is related to each variable

preceding it in the causal hierarchy. In contrast, an unsaturated model is one in

which all the variables are not necessarily related to all causally prior variables, not all of the variables are ordered hierarchically, or some possible paths are omitted. Some paths may be omitted (set to a zero value) because theory dictates that they do not influence the variables that follow them in the model or their measures of error are too large.

Path analysis methodology forces the researcher to specify explicitly the presumed causal relationships among the variables in the proposed model, and allows for the decomposition of the original zero-order correlation between any two variables into precise direct and indirect effects (Spady & Greenwood, 1971). Direct effects are effects one variable has upon another without the mediating or moderating effect of other variables involved in the model. An indirect effect is one in which a variable influences another via a third variable. Variables in a proposed path model are hierarchically causally ordered. The order of the variables in the path model depends upon the available literature and theoretically feasible relationships. Variables are considered exogenous, if they can influence, but are not themselves influenced by, other variables in the model. Variables that are not designated as exogenous become either endogenous or outcome variables. An endogenous variable is a variable that is influenced by preceding variables in the model, and in turn influences the variables that follow it in the model. The outcome

variable is the final variable in the causal model; it is influenced by any combination of the preceding exogenous and endogenous variables. A variable can function as both an independent and dependent variable depending upon the relationship being assessed. For example, an endogenous variable can function as a dependent variable in relation to the exogenous independent variable that precedes it in the model and it can be considered as an independent variable when one is considering the effect it has on the outcome or dependent variable that follows it in the model.

According to Kendall and O'Muircheartaigh (1977), simple path analysis models require linearity, additivity, and independence of errors. The variables involved in the modeling process need to be linearly related to the other variables. The set of multiple regression equations needs to be additive in nature without interactions between equations. The error terms are assumed to be uncorrelated with each other and with other prior variables.

An advantage of path analysis is that both the direct and indirect effects can be tested for statistical significance (Sobel, 1988). Many computer programs are available to decompose the path model effects. Each uses a different approach to break down and test the effects. The underlying mathematical framework of path analysis used by most of the available computer programs is regression. Simple and multiple regressions are used to

estimate the magnitude of both the direct and indirect effects of variable pairs.

SASPA (Huynh, 1992), an extension of a SAS (SAS Institute Inc., 1992)

computer program by J. Scott Long (see Sobel, 1987), and SAS's PROC

CALIS are two programs available for testing model effects. PROC CALIS

(LINEQS and RAM statements) is by far the easier to use with regard to time

and programming expertise and provides model fit indices. However, SASPA,

unlike CALIS, supplies individual path error measures (for both direct and

indirect effects) and test statistics (Z-tests with corresponding probabilities) for

one and two-tailed tests. Both CALIS and SASPA provide equivalent direct and

indirect effects. CALIS would be the better choice if model fit was the research

question. Unlike SASPA, CALIS provides a selection of model fit indices

including: the Null Model Chi-square statistic, the Bentler-Bonett normed fit

index, and Bentler's comparative fit index. A good model fit is indicated by

values in excess of .90 for the Bentler and Bentler-Bonett indices (Bentler,

1989; Bentler & Bonett, 1980). However, if specific hypotheses are being

tested, SASPA would be the better choice because each effect is evaluated

against the respective error measures and the program provides the

corresponding Z-value and probability.

SASPA uses both standardized or unstandardized beta coefficients

from simple regression models with an intercept to estimate the total effect one

variable has upon another. The total effect is made up of a direct, indirect,

unexplained, and spurious effect (see Figure 1) and represents the theorized

causal relationship between the two variables being considered. The total net

effect is the sum of the direct and indirect effects. The total gross effect is the

sum of the direct, indirect, and unexplained effects.

Figure 1. The decomposition of the total effect of one variable upon another

as broken down by SASPA (Huynh, 1992).
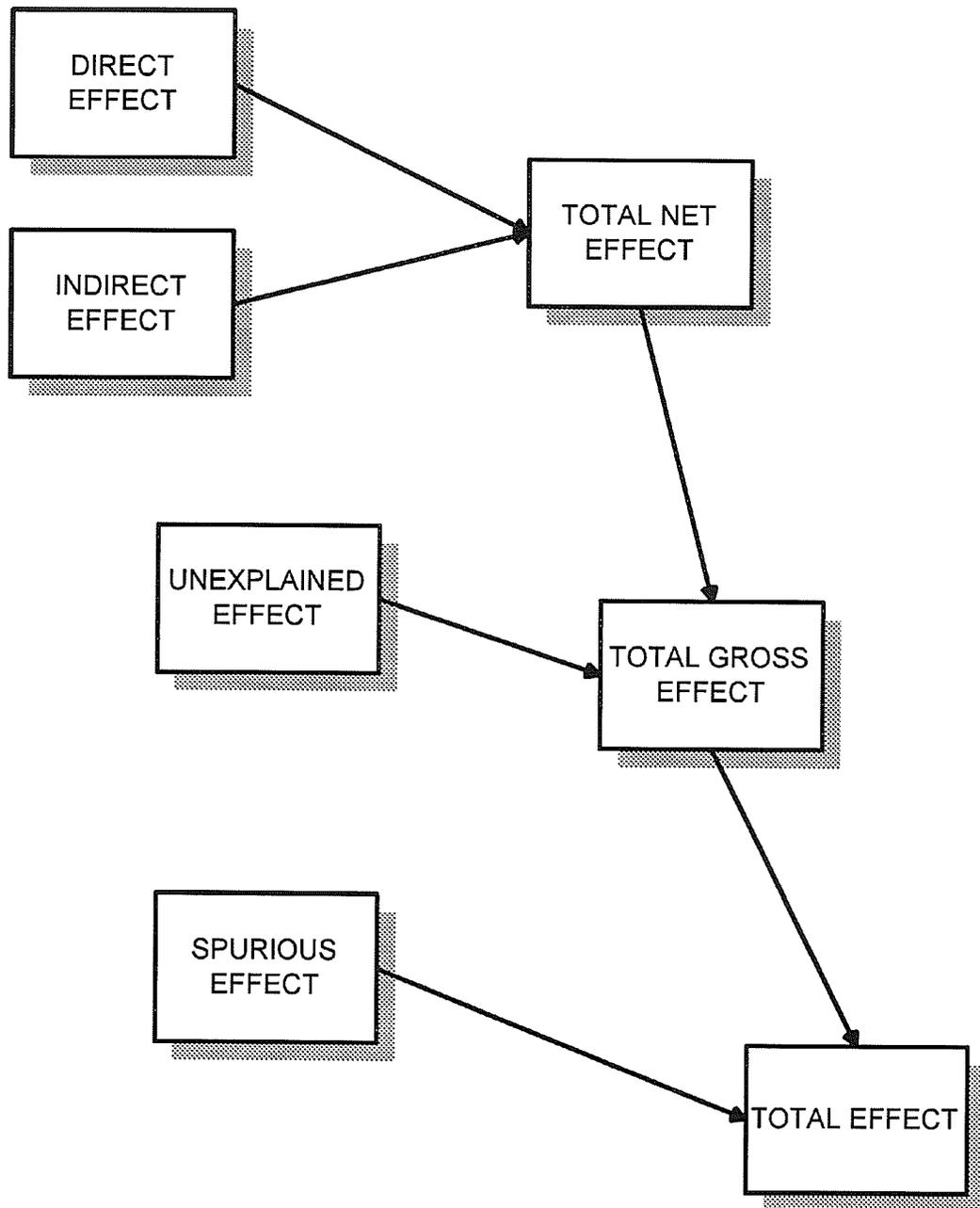
Direct effects are estimated using the partial regression coefficients from the multiple regression model containing all the theorized causes of the dependent variable. Indirect effects exist when three variables are involved. Here, one of the variables is a proposed cause of one variable while it is the effect of another variable. The product of the direct effects, forming a causal pathway between two or more variables, is used as an estimate of the indirect effect. If more than one pathway exists to a particular effect, the indirect effect becomes the sum of the products of the direct effects that form the sequence of causal estimates from a cause to an effect (J. Cohen & P. Cohen, 1983). The direct and indirect effects are summed to arrive at the total net effect. Systematic error, error that cannot be explained or a non-causal component of the model (Fox, 1980), is represented by the unexplained effect. The difference between the total effect and the total gross effect is used as an estimate of the spurious effect and represents random or residual error due to sampling fluctuation. If either the unexplained or spurious effects is/are larger than the direct effect then the path pertaining to the error measurement is deemed invalid. The presence of an invalid path(s) indicates the model has been mis-specified, the path(s) needs to be deleted, and the model reanalyzed.

Current Research

Literature Shortcomings

Many previous studies have evaluated the influence of social support, stressful life events (like unemployment and low income), upon mental health status. However, few have evaluated the effects these factors have on the consumption of mental health services (Sherbourne, 1988). Moreover, most of the studies looking at the influence of these variables evaluate some measure of current mental health or mood instead of diagnosis (Goulding, 1988) or resource usage. Instead of simply using a current measure of mental health, like psychological distress, that may or may not indicate general mental health, Bolton and Oatley (1987) recommend psychiatric inpatient treatment may be a more salient measure of mental health.

Most literature focusing on psychiatric symptomatology resulting from poor social networks and life stress has been conducted on samples that are either normal population members or non-psychotic clients (i.e., neurotic) (Romans & McPherson, 1992); and focus upon what Frank (1973) calls demoralization or what Finlay-Jones and Burvill (1979) would label minor psychiatric morbidity. Because of researchers focusing on normal or non-psychotic populations, little research has been conducted on the influence of these variables on

symptomatology or hospitalization in the most susceptible populations. The

available literature that does evaluate some of these variables in client groups only

considers discharged patients; this is likely due to the problem of finding a sample

of clients who have not been admitted to a psychiatric facility. By ignoring

diagnosed psychiatric clients who have avoided hospitalization, researchers may

not have considered the possible salient characteristics that predict better coping

and reduced resource utilization or have failed to identify those with inabilities in

acquiring access to needed resources.

According to Roberts, Roberts, and Stevenson (1982), much of the

current research has failed to consider demographic variables like age, income, and

education. Yet, these demographic variables have been found to influence

psychological well-being. Those studies that have addressed the effects of age, sex,

social class, and socio-psychological influences on physical or mental health status

in chronically ill patients have usually been conducted with severely impaired

clients, ignoring better functioning psychiatric clients (Patrick et al., 1986).

According to Tausig (1992), there are many definitional and operational

variations in the support literature that are due to a failure to distinguish between

structure of the support network, mobilization, and the effects of support on health

outcomes. Much of the literature fails to consider the multidimensional nature of

social support (Barrera, 1986). Many available social support studies only use

self-reports of functional qualitative measures of support (i.e., perception of

support). Consequently, these measures do not account for distortions in reporting

due to psychiatric impairment (Goodman & Johnson, 1986) which may result in a

contamination effect (Eaton, 1978). Also, and unfortunately, research has often

focused on variables that cannot be manipulated or treated to influence a change in

outcomes. For example, it would be a lot easier to increase a client's contact

frequency than change their perception of support, especially if they are still

experiencing psychiatric symptoms. Because of the many limitations in the

literature, the full ramifications of these support and stress factors on mental health

and health service resource utilization are not well understood.

Research Objectives

Usually, past literature has taken bivariate, correlational, and

unidirectional approaches to the variables of interest (Revicki & Mitchell, 1990)

and has not evaluated the interrelationships among social contact and

unemployment, income, and morale (Jones, 1988). The present study, via path

analysis, evaluated the combined effects of social support (contact frequency and

satisfaction with support), education, employment, income, and perception of

financial adequacy on psychiatric symptomatology and total psychiatric

hospitalization in a group of Depressive and Manic-Depressive members of a

self-help group, The Society for Depression and Manic-Depression of Manitoba.

This research allowed for a priori causal relationships between the networks of

interacting variables to be evaluated. The sample was not restricted to

psychiatrically admitted clients; rather, the focus was on a population of

individuals with a psychiatric diagnosis who are members of a self-help group.

Some group members have been in a psychiatric facility for treatment while

others were treated privately or on an outpatient basis. Therefore, this study had

the opportunity of evaluating the relationship that social functioning variables

have with psychiatric symptomatology in members of at-risk populations who

may not have been admitted to an inpatient psychiatric facility for treatment.

In the first stage of the analysis, outliers and missing values were dealt

with. The second stage of the analysis controlled for the influence of age group,

sex, marital status, and urban versus rural living situations. The literature on the

influence of these variables is mixed and is discussed more fully in the methods

section. The third and final stage of analysis evaluated the hypothesized models

and computed model fit indices. Both the direct and indirect influences of each

variable were considered in the final model specification. With the causal effects

of pertinent variables clearly delineated, patient management practices,

specifically service specification and delivery, can be changed to affect the most

salient changeable predictor variables, possibly causing a reduction in length of

hospital stays and reduced symptomatology for these psychiatric populations.

The more information we have about the social functioning variables that

contribute to psychiatric symptomatology and hospitalization, the better we can

plan programs to reduce the personal, emotional, and financial costs associated

with psychiatric hospitalization (Ahr et al., 1981) and prevent repetitive

hospitalizations (Goodman & Johnson, 1986), while still providing clients

appropriate medical treatment.

<div align="center">Variable Definition</div>

Questions measuring current contact frequency consisted of a

combination of questions modified from both the Winnipeg Area Study (WAS,

1988) and the Weissman (1971) Social Adjustment Scale. Portions of the

questions and response scales came from both sources; however, the response

scales are most similar to Weissman's and the questions are more similar to the

WAS. They gave a measure of the frequency of contacts between the

respondents and others in their social network in structural terms. This measure

is similar in nature to the measure used by Strauss and Carpenter (1977).

According to Rushton, Brainerd, and Pressley (1983), the principle of

aggregation is an effective means of minimizing error associated with individual

measures. The principle states that "the sum of a set of multiple measurements

is a more stable and representative estimator than any single measurement"

(Rushton et al., 1983, p. 18). Therefore, contact frequency was computed by

summing the responses to four of five questions about the respondents' social

interaction during the last two weeks. Four of the questions asked how often the

respondent had gone out with, depended upon for help of any sort, invited over,

called (or was contacted by), or visited their friends and/or relatives. The fifth

question asked how many people the respondents thought they had interacted

with during the last two weeks that they would not consider either friends or

relatives. For example, going to a convenience store and talking to the clerk or

the number of people they interacted with at work. Each question was in Likert-

type format with a five point response scale. Only the first four questions were

summed to arrive at a contact frequency score since the fifth question did not

correlate with the first four and reduced the overall scale Cronbach's Alpha.

Without the incongruent question the Contact Frequency inter-item correlations

ranged between r = .40 and r = .57 with an overall scale alpha = .77. The

client's satisfaction with social support was also assessed. Respondents were

asked to indicate (in Likert-format) how satisfied they were with the support

they received from others. A score of 1 indicated that they were very

dissatisfied while a score of 7 indicated they were very satisfied with the support

they received from others. Both measures of social support were used in model

specification and hypothesis evaluation.

Education, employment, and income are closely related variables and

are often used, separately or in combination, as a measure of socioeconomic

status or functioning. For the purposes of this research, education was

operationalized as the number of years of schooling each client acquired

(Winnipeg Area Study, 1988). The respondent's employment score was

computed by summing the number of weeks of part-time employment with

twice the number of weeks of full-time employment. This weighting of part and

full-time employment was necessary to give more weight to employment weeks

that were full-time in nature. The respondent's employment score assessed the

amount of time the respondents spent in paid employment the year preceding

data collection. This measure does not assess the level of unemployment directly

but indirectly through the frequently indicated low levels of the employment

score.

Income was operationalized as the respondent's income score and the

family's gross income for the 1994 tax year. Although Myers and Bean (1968)

found similar results with either family or individual income, family income is the

more desirable measure when one is considering "the consequences of the

debilitating effects of the social treatment of psychiatric patients" (Link, 1982, p.

206). Yet, personal income has been found to influence psychiatric

symptomatology by influencing self-esteem (Ross & Huber, 1985). Family income

was evaluated with the same question the Winnipeg Area Study (1988) used with

slightly modified response scales and gave a measure of the total financial

resources available to respondents. The modification in response scales was

necessary since many people diagnosed with psychiatric disorders are living well

below the poverty line; so few respondents were expected in the highest income

brackets that two of the highest income brackets were eliminated. Since income is

a sensitive issue with survey respondents under the best of circumstances

(Dillman, 1978), the lower income brackets were expanded slightly so that

respondents were not forced to answer the lowest available alternative. To avoid

a reduction in response rates that was evident on the income question in

Macdonald's (1992) survey results for this population, personal income was not

asked for directly. Personal income was computed by asking respondents what

percentage of the total family income they contribute. This less direct approach,

requiring more cognitive effort, seemed less offensive to clients during

pretesting and improved the response rates on the income component over

MacDonald's survey. Preliminary correlational analysis indicated that both

personal and family income behaved in the same manner with symptomatology.

The magnitude and direction of the relationships between both the income

measures with the symptomatology variable were identical. Therefore, since

personal income was computed from family income it was excluded from further

analysis of models.

Perceptions of financial adequacy were evaluated by summing the

responses to questions about the respondent's satisfaction with the income they

had available to meet their basic financial needs. These questions were in part,

from the 1988 Winnipeg Area Study with adjustments made for future savings

and excluding questions about satisfaction with living accommodations. The

questions making up the financial adequacy perception were similar to the

measure employed by Feather (1989). Components of financial adequacy included whether the respondent was satisfied with the funds available for clothes, personal expenses, things for the home, money to do things for and to spend on the people they love, saving for the future, funds for leisure, and for their family's financial needs.

The length of psychiatric hospital stays is strongly associated with the cost of health care and is also considered as an easy to assess quality-of-care indicator (Mai et al., 1993). Yet, often studies use a measure of current mental health or psychological distress during the period of influence by an acute stressor (i.e., death in the family) to measure the influence of other salient variables. Bolton and Oatley (1987) believed psychiatric inpatient treatment would be a more clear-cut measure of psychiatric disturbance. However, this measure does not take into consideration the variable influence of various sociodemographic characteristics or symptom severity; but, it does show the amount of mental health resources consumed by those admitted.

For the purposes of this research, length of psychiatric hospital stays was assessed in three ways. Two global measures were taken. They were operationalized as the number of nights the respondent had spent in a psychiatric

facility [similar to a measure taken by Glick and Zigler (1986)] and the number

of such admittances over the last three years. Also, respondents were asked how

many nights they had spent in a psychiatric facility during the last year. All

three measures of hospitalization intensity were considered in determining the

final model specification. Unfortunately, none of the hospitalization measures

(in the smaller sample) proved to be normally distributed. The decision was

made to evaluate the influence of the social functioning variables against the

most extensive global measure, three year hospitalization, since it allowed the

largest sample and was the best distributed of the three measures.

A measure of current symptomatology was also assessed with a single

Likert-type question. Respondents were asked to indicate how severe their

psychiatric symptoms had been the two weeks preceding the survey date. A

score of 1 indicated no psychiatric symptoms while a score of 7 indicated the

most severe symptoms the respondents had ever experienced. This measure of

symptomatology is not a simple depression assessment but also included manic

symptomatology and/or any other symptomatology considered by the client as

psychiatric in nature. It was also self-reported as well as self-referenced. For a

detailed breakdown of the survey the reader is referred to the appendix.

Hypotheses

The primary hypotheses predicted inverse relationships between the social support variables (contact frequency and satisfaction with support) and the outcome symptomatology and hospitalization variables. Since secondary hypotheses were numerous, in order to facilitate both clarity and readability, the reader is referred to Figure 2 and Figure 3 for the symptomatology and hospitalization models, respectively. The hypothesized relationships in both models are indicated with valence signs. The specified relationships could represent the direct, indirect, or total effects of the variables involved.

Figure 2. The preliminary fully specified symptomatology path model.

Valence signs indicate the direction of twenty-one hypothesized variable

relationships {(+) positive and (-) negative correlation}.
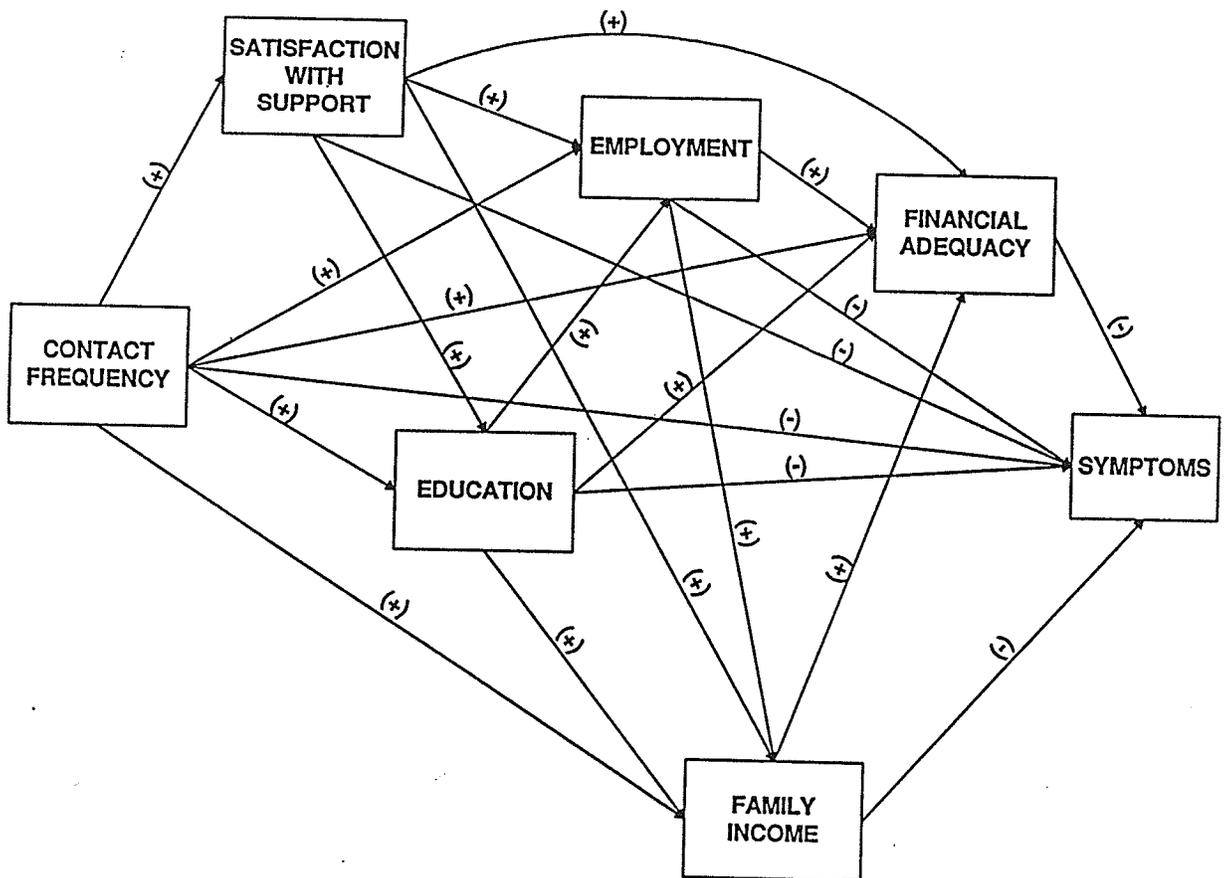
Figure 3. The preliminary fully specified hospitalization path model.

Valence signs indicate the direction of twenty-eight hypothesized variable

relationships {(+) positive and (-) negative correlation}.
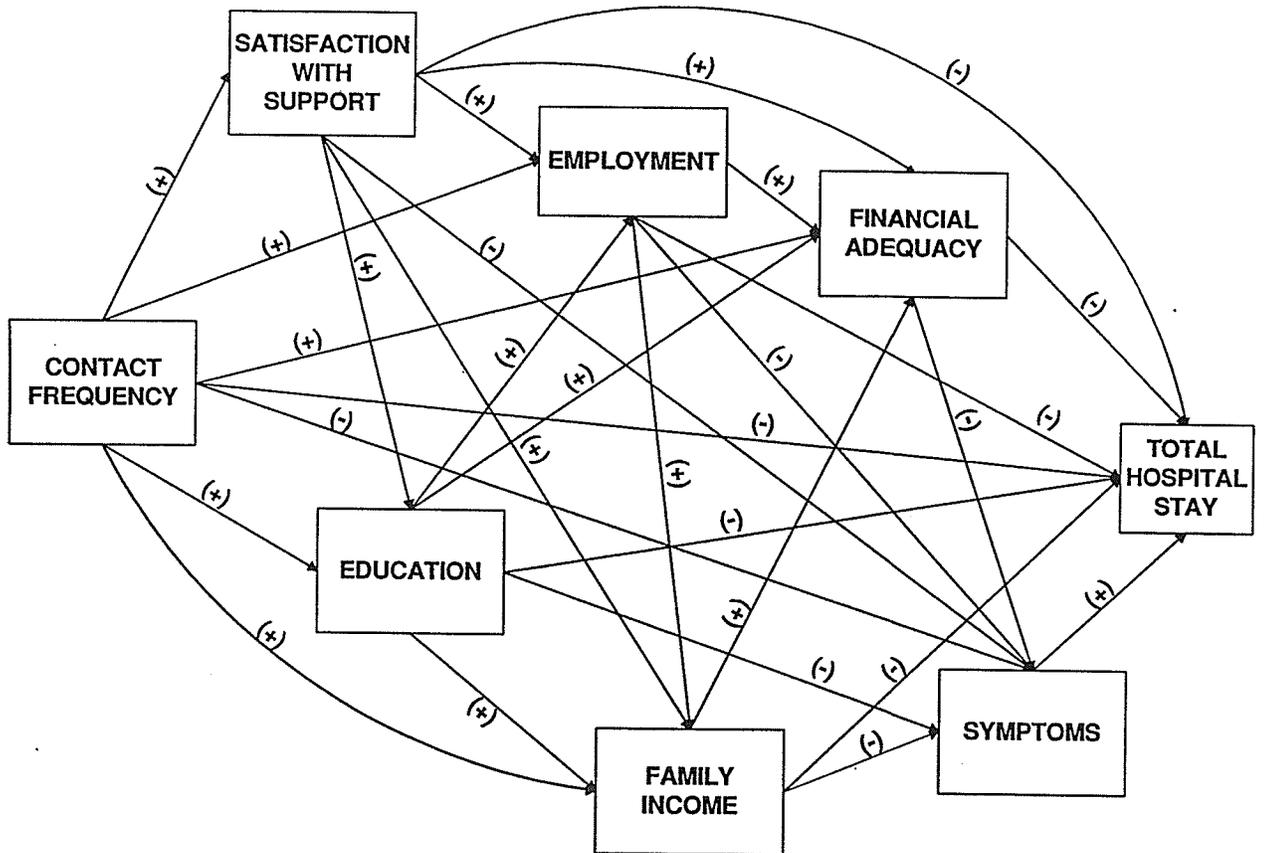
Rationale for Hypotheses

Although directional predictions were being made, the reader is cautioned that with this type of cross-sectional, quasi-experimental, design the question of causation cannot be answered unequivocally. However, the hypotheses presented are supported by both the literature and on theoretical grounds. Krause, Liang, and Keith (1990) warned that even with theoretical support, several alternative causal orderings could be specified for any model.

The following causal order assumptions were made for this research: As satisfaction with support and the frequency of contacts between respondents and those in their social network reduce, it will affect their overall well being. Reduced perceived support and contact with persons (family and friends) who could help further not only educational goals but opportunity for employment would negatively affect employment and employability, reducing available income, thereby negatively influencing perceptions of financial adequacy. The combined effect of these social functioning variables would increase the burden of chronic stressors in a respondent's life and influence psychiatric health leading to more psychiatric symptomatology and extended hospitalizations.

Psychiatric clients are often socially withdrawn, yet, according to Cohen

and Sokolovsky (1978), frequency or length of psychiatric hospitalization seems

unlikely to have caused this withdrawal. Yet, the 'Social Breakdown Syndrome'

would propose that reduced contact is the result of lost role functioning and

identity resulting in a passive withdrawal of the client diagnosed with a psychiatric

illness (Kuypers & Bengtson, 1973). The social support/health relationship could

function in both directions or be a result of another unmeasured variable (Hammer

et al., 1982). But, according to Berkman and Syme (1979), it is more likely that

social networks influence health outcomes. Kaplan, Salonen, Cohen, Brand, Syme,

and Pyska (1988) have stated that available research fails to support the theory

that illness causes social support inadequacies. According to Wellman, social

contact leads to better social support, and better social support can result in better

employment opportunities that can translate into more stable financial resources

(cited in Hobfoll & Jackson, 1991). For example, contact with a network can

inform members of available job opportunities and provide members in need with

valuable introductions to prospective employers.

The inverse relationship between socioeconomic status and psychological

distress is well documented (Kessler, 1982; Wheaton, 1978). According to Pearlin

(1982), longitudinal analysis supports a causal interpretation of the relationship

between socioeconomic status variables and health. The order of the

socioeconomic variables of education, employment, and income are based upon

work by Turnbull, George, and Landerman (1990); education is assumed to be a

causal factor in employment status, which is, in turn a causal factor in income.

The relationship between employment (unemployment) and psychiatric

health is harder to disentangle. According to Dressler (1986), "it is much more

likely that unemployment preceded and contributed to the reporting of depressive

symptoms"(p. 644). According to Bolton and Oatley (1987), in a panel study,

unemployed depressed individuals became less depressed upon finding employment

and those who remained unemployed became more depressed. Yet, according to

Hamilton et al. (1993), not only can unemployment lead to depression, but,

depression can lead to unemployment. The reciprocal relationship, between

unemployment and depression, may be due to selection biases in cross-sectional

samples; it is just as possible that distressed individuals are more likely to become

unemployed as unemployed individuals becoming depressed (Hall & Johnson,

1988; Kessler, House, & Turner, 1987). In a longitudinal design, Kessler, Turner,

and House (1989) did not find support for the idea that distress from

unemployment reduces the likelihood of future employment. These researchers

found that those who became depressed after losing their jobs were somewhat,

although not significantly, more rather than less likely to find employment. Frese

(1987) also believes that depression is the result of unemployment rather than the

inverse and that the effect of unemployment is moderated by hope and one's

financial situation.

According to Ross and Huber (1985), the interaction of education and

income significantly influences perceptions of economic hardship. Longitudinal

analysis supports the notion that economic hardship influences depressive

symptomatology rather than vice versa (Stolsenberg, 1980). Pearlin et al. (1981)

found that changes in family income influenced economic strain leading to changes

in depression.

The causal orderings specified in these proposed models are supported by

literature. However, several causal orderings are possible based upon the available

literature. The present model tests one pattern of orderings; but in reality many of

the aforementioned variables could be placed in numerous places in this type of

social causation model. For example, family income could precede social support

and education, and hospitalization at one point in time may influence social support

in another. There are many different patterns possible for this type of research

especially if one considers the variables in time, and many of these relationships are

non-recursive, meaning that they work in both directions in time. For example, if

someone has a poor level of contact with a supportive network at the beginning of

a psychiatric illness and is admitted to an inpatient psychiatric facility, this may

serve notice to the family that there is a problem. After the individual is released

from hospital individuals in the client's network may now make a point of seeing

the client more frequently. This increased contact could result in symptoms being

recognized earlier and treatment handled on an outpatient basis or another

hospitalization. The hospitalized individual could also alienate network members

resulting in a reduction of contact after the first hospitalization. Either direction of

causation is possible and is partially supported by the available literature

Methodology

Survey Protocol

A mail survey approach was selected to carry out this research because

mail surveys can be completed within time and financial resource restrictions while

still maintaining the clients' confidentiality in this clinically sensitive population. A

convenience sample (the entire mailing list of the self-help Society) was used rather

than a random sample of the general Winnipeg population for a number of reasons.

First, sampling the entire group resulted in a large enough sample; a sample size of

more than 100 respondents is needed for the assumption of normality required by

the path analytic procedure. Second, the target group of respondents included

people with the psychiatric diagnosis of unipolar or bipolar depression (Manic-

Depression) and these clients are rare in the general population and would be expensive to identify in a general representative population sample. Third, because of the sensitive nature of the illness, these clients were less likely to respond to any surveys received from unknown persons or agencies, making contact through an established connection important (i.e., the Society). Finally, this sample was better to assess than a discharged hospital cohort since the Society membership included individuals who had never been hospitalized.

Because the population being evaluated was a psychiatric population and many may not have been functioning at their best, the survey instrument was brief while still covering the necessary variables. A short (four pages), primarily closed question format, mail survey was distributed to all members of the society mailing list ($\underline{N}$ = 922). The specificity of closed responses reduces the risk of misinterpretation (Converse & Presser, 1988) and minimizes the amount of cognitive energy required to complete the questionnaire (Converse & Presser, 1988; Dillman, 1978). A more open format (fill in the blank) was used for questions with responses that may have been unintentionally attenuated with closed response categories (for example when requesting feedback about Society services).

The survey packages included: a cover letter on Society letterhead

explaining the goals of the research, promising confidentiality, and asking for voluntary participation, the survey, and a stamped self-addressed envelope. Surveys were mailed from the Society office by staff who have access to the mailing list. Each survey was numbered for follow-up purposes (explained to respondents in a letter of introduction). As each survey was mailed, the identification number was recorded on the mailing list so the staff member could record responders' numbers to facilitate follow-up procedures (Dillman, 1978). Surveys were returned to the Society offices to reduce the concerns respondents may have about others having access to their responses. Each person on the mailing list has had personal contact with the self-help group at some time in the past and would either be a client, the friend of a client, or a client's family member. The members of this group tend to contact the group when psychiatric symptoms have had a major impact on their or their family member's life. Group members are also recruited in psychiatric hospital facilities. These kinds of groups are less likely to attract people who are experiencing less severe or less frequent psychiatric symptomatology, for example, someone who has a reactive depression after the death of a loved one and who is treated by a family practitioner or clinical psychologist.

Prior to pretesting the survey instrument was fully evaluated. Evaluation

sessions with the director of the association, staff members, and with patients were

held to ensure instrument suitability, comprehensibility, and palatable completion

time. The survey questions (variables) were pretested on a small sample of recently

discharged clients, in conjunction with a survey evaluating the usefulness of a new

outreach worker position at the University of Manitoba Health Sciences Center

(Murray, 1995).

Since the Society's mailing list does not identify which of its members

were clients and which were friends and/or family members, the entire list of

Society members was used as the sampling frame. At last count, the Society

membership list had approximately 976 individual names for the entire province of

Manitoba. In a survey conducted of the Society's mailing list in the past

(MacDonald, 1992) the overall response rate for the entire mailing list was 40%.

Based upon Society meetings, approximately 30-40% of those who attend are

family and friends and the other 60-70% are clients. Of the 365 surveys

MacDonald dispatched, approximately 35% went to non-eligibles (non-clients). Of

the remaining 237 surveys, 143 were returned after a follow-up letter was mailed

to initial non-responders. Based upon these figures a client response rate of forty

percent was expected especially since no follow-up mailing was planned for non-

responders. A follow-up mailing was decided against because this research was

going to continue longitudinally, and, therefore respondents who chose to continue

would be receiving surveys every six months. To send follow-up reminders was

going to become not only confusing but possibly annoying to respondents. Also

since clients are members of a psychiatric population a follow-up may have been

considered as annoying especially if the client was not well at the time. For

example, if a client intended to send back the survey but forgot for any number of

reasons related to being ill, then reminding them may remind them of their inability

to function normally. Also, the author does not wish to damage the relationship the

membership has with the Society thereby alienating possible future survey

respondents.

Respondents and Response Rate

The individuals (976 individuals) on the mailing list were asked to

complete the survey if they belonged to the client designation, give it to the client

they were associated with, or indicate they were not clients and mail back the

survey in the envelope provided. For the purposes of this research 'client' refers to

a person who has psychiatric symptoms that were or are severe enough to receive

a psychiatric diagnosis from a health professional. Although Dimirsky (1990)

reported that chronic mental disorder should be identified by a more

multidimensional clinical diagnosis this study used groupings based upon a

traditional medical diagnosis category for the primary identification criterion.

Independent clinical diagnoses were not made for to do so would have involved

identifying and contacting clients and would violate the Society's basic ideology of

appropriate mailing list usage. The mailing list was designed to contact members

and keep them informed, not to identify clients for clinical subject pools.

Individuals were included in the sample(s) if their response to a question regarding

their psychiatric diagnosis showed that they have received a diagnosis of any form

of Depressive or Manic-Depressive disorder. The proportion of individuals in the

total responding sample ($\underline{N}$ = 233) with unipolar and bipolar depressive disorders

was approximately the same (44% unipolar, 39.7% bipolar, and 15.5% not clearly

defined or multiple diagnoses). Less than 1% of the respondents did not indicate

any form of diagnosis. Ninety-three percent of the sample clearly indicated that

they had received their diagnosis from a qualified health professional and the other

7% either did not indicate who gave them a psychiatric diagnosis or mentioned

someone other than a medical doctor, psychologist, psychiatrist, or psychiatric

nurse. These individuals were included in the sample since they either indicated

that they were taking medications for psychiatric symptomatology, that they had

been hospitalized for psychiatric reasons, or had interactions with a social worker

and a psychiatric hospitalization history.

Of the total mailing 54 surveys were returned because of invalid or no

forwarding addresses, leaving 922 active surveys. Of the active surveys 333 were

returned in the two months following the mailing resulting in an overall response

rate of 36% (333/922). Non-eligible returns (100 surveys) were ones in which the

individual receiving the survey indicated that they were not eligible since they did

not have a psychiatric diagnosis. Since 100 of 333 responders were ineligible the

percentage of members of the mailing list who were clients was computed to be

approximately 70% (233/333). The eligible clients' response rate was 36% (922 *

.70 = 645; 233/645 = 36%). This response rate is similar in magnitude to both

MacDonald's (1992) response rate and the response rate of 40% acquired from the

evaluation study in a small hospitalized sample (Murray, 1995). The response rate

for the current sample of 36% does not compare well to the 1995 WAS's

completion rate of 71.4%. However, the WAS uses a telephone survey approach

with 10 repeated call-backs while the design of this research called for a single

wave mail survey.

Due to a lack of random sampling of the mailing list, it is possible that the

acquired sample is not representative of the full membership. In an attempt to

evaluate if a response bias was operating in the group of respondents who

complied with the survey request, both gender and postal code information were

recorded along with the survey identification number. The mailing list included

individuals from urban and rural sections of Manitoba. The postal codes were

available for 920 of the active surveys. The proportion of urban (82.5%) and rural

(17.5%) postal codes in the active survey list was close to the proportion of the

aforementioned designations in the total mailing list (81.7% and 18.3%,

respectively). Therefore, the sample used in the study was representative of the

mailing lists urban/rural distinction.

A clear determination of gender was made for 929 individuals on the

mailing list. Some members of the list could not be clearly identified as belonging

to either gender because the mailing list only included either the individual's first

initial, the mailing list entry title was Mr. and Mrs. and the client could not be

identified, or determining the individual's gender was impossible due to an ethnic

first name. The identified group consisted of 560 (60.3%) females and 369

(39.7%) males. The sex of the sample respondents was 62.5% female and 36.6%

male. Therefore, the sample obtained was representative of the gender split on the

original mailing list. The gender split in the Winnipeg Area Survey results (1995)

also display an over representation of females (56% females and 44% males).

This research relies on retrospective self-report data. Since memory plays

a role in determining accuracy of reporting, this approach can lead to a

contamination effect or an availability bias. Self-administered questionnaires

usually lead to an underreporting of behavioral items but reduce the underreporting

of embarrassing information (Bradburn, 1985). Since the respondents are being

asked to recall information for a three year period, a one year period, and a two-

week period, an availability bias is expected to influence the responses assessed

over longer time frames. Salience of the events being recalled also influences

response bias; recall is more difficult if there are many similar incidents and easier

if the events have an emotional component (Bradburn, Rips, & Shevell, 1987).

Hospital stay information may be underreported to some extent because of the

influence of memory for the time frame; however, since psychiatric hospitalization

is a salient emotional event for clients, recall should be reasonably accurate. In

most cases pretest information indicated that respondents could answer, to the day,

the time they had spent in the hospital. Also, according to Eaton (1978) in a re-

analysis of panel data, the "effect of recall distortion on the life events-mental

disorder relationship is negligible"(p. 230). However, before measures can be

considered completely adequate, their validity needs to be established through

independent sources (Birkel & Reppucci, 1983).

In an attempt to verify hospitalization data one of the Society volunteers

with a recent hospitalization history contacted some of the respondents reporting a

psychiatric hospitalization history. The volunteer discussed the reason for the

phone contact with 13 of 76 respondents with a three year hospitalization score.

At this time the respondent was asked to answer the hospitalization questions

again after checking any of the information they had available about their

hospitalization history. Three questions were asked of respondents. The first

question asked how many times they had been admitted for inpatient treatment

during the last three years. The second and third questions asked how many nights

they had spent in an inpatient facility during the last year and the number of

psychiatric admittances in last three years, respectively. Although responses at this

time did not exactly match the earlier survey responses (results showed a reduction

from first to second measure in all three cases) results of three Wilcoxon Matched-

Pairs Signed Rank Tests indicated no significant pair-wise differences in

hospitalization variables. ($\underline{Z}_{(number\ of\ hospitalizations)}$ (12) = -1.57, $\underline{p}$ = .116; $\underline{Z}_{(one\ year\ stay)}$(12) = -

1.46, $\underline{p}$ = .144; $\underline{Z}_{(three\ year\ stay)}$(12) = -.18, $\underline{p}$ =. 859; all two-tailed tests). The results

of the paired signed rank tests, while non-significant, probably due to a lack of

power from the small sample, do directionally support a general decline in

accuracy (underreporting possibly due to forgetting) of reporting over time as

suggested by Bradburn et al. (1987). This underreporting will serve to reduce the

variability of the hospitalization variable, as a consequence the correlations and

beta weights will be under estimated (Tabachnick & Fidell, 1989).

Employment and income information are less emotionally charged measures; however, most people are accustomed to reporting yearly income to the tax department so they should have little difficulty estimating the requested income information or checking their tax returns. Employment measures should be salient for respondents. Estimating either number of weeks they worked during the year or the number of hours they were employed in the last two weeks should not be too difficult for them.

According to Bradburn, Rips, and Shevell (1987), although both omissions (forgetting) and telescoping (bringing events forward in time into the survey time frame) play a role in the response bias, the longer the time period respondents are asked to remember over the greater the omissions regardless of the type of information being recalled (also see, Sudman & Bradburn, 1973). Omissions lead to under reporting events and reductions in variable variability. Any degradations in variable variability in correlational or regressional research result in reductions of the size of both the correlation coefficient and the beta weights of existing relationships resulting in an underestimation of the effect sizes and conservative results (Tabachnick & Fidell, 1989).

Other response bias issues that may influence the results involve response

set biases and a nonresponder bias. The questionnaire response scale scores (i.e., adequacy of financial situation and contact frequency) were not counterbalanced (reverse scored) to avoid response set patterns. This kind of adjustment in the response scale scoring was avoided to ensure ease of reading, increase comprehensibility, reduce confusion, and to facilitate a shorter completion time. The author felt that the possible disadvantages of a response set bias would be more than offset by the aforementioned advantages.

According to Narrow, Rae, Moscicki, Locke, and Regier (1990), another important consideration in nonresponse is that depressed respondents, because of the intrinsic nature of the disorder are also more likely to be among the nonresponders. To try to eliminate some nonresponse bias and ensure a high response rate the surveys were not mailed in the peak depression winter months of December, January, and February or the peak manic symptomatology months of June, July, and August. March-May and October-November appear to be the best months for soliciting information from clients in both Depressive and Manic-Depressive diagnostic categories (see Goodwin & Jamison, 1990). Surveys were mailed out to all members on the mailing list at the end of November, 1995 and two months were allowed for the return of the surveys. The largest portion was returned during the first month; however, surveys continued to be returned steadily

till the end of the seventh week. Three surveys were returned after the two-month

period and were not included in these results. Biases may have resulted due to

illness. Individuals who are presently very ill or hospitalized may be more likely in

the ranks of those choosing not to or unable to respond. However, response rate

results (40%) from a recent survey of clients just released from the University of

Manitoba Psychealth Centre at the Health Science Centre indicated that even

clients who are still very ill respond at a similar rate to the one obtained in this

research.

Control Variables

    Numerous variables have been found to influence psychiatric

symptomatology and hospitalization including: age, gender, marital status, and

urban versus rural living. The literature is not clear whether these effects really

exist or are due to the influence of related variables. The following sections discuss

the literature pertaining to the influence of each of the aforementioned variables

and concludes with measures taken to ensure that any possible effects that existed

did not interfere with conclusions about the predictor variables from this research.

    Age. In general, epidemiological studies of community samples

demonstrate a curvilinear association between age and depressive

symptomatology, with the rates being higher for seniors and young adults

(Schwab, Holzer, & Warheit, 1973; Dresler, 1986). The relationship of age with depression has been challenged because other depression-related variables are correlated with age (Blazer, Burchett, Service, & George, 1991). For example, disability has been found to correlate with both age and depression (Berkman, Berkman, Kasi, Freeman, Leo, & Ostfeld, 1986). Disability then may be the explanation of the relationship between depression and an advanced age (Blazer et al., 1991). Also, since individuals with lower levels of education (Kovess, Murphy, & Tousignant 1987) and employment (Perrucci et al., 1988; cited in Hamilton, 1993) are at higher risk for depression, and given that younger people are more likely to be both less educated and have lower employment rates, then the correlation of age with employment and education may also explain the higher rates of depressive symptomatology in the young.

Other researchers have come to the conclusion that age was not a salient variable because once the influences of other variables were considered the relationship between depression and age looses its significance (Blazer et al.,1991). Age apparently has no influence on the effects of social networks (Olsen, 1993) or the relationship between support and well-being (Vaux, 1985). Yet, younger unemployed persons receive considerably more aid from their parents while marital status did not influence support received (Hanlon, 1981). Link (1982) also

excluded age and gender from a model explaining psychiatric impairment and

patient status because their effects were not significant.

Gender. In general women have been found to suffer more depressive

symptomatology than men (Radloff & Rae, 1979). Current literature indicates that

this phenomenon may be due to women being subjected to more 'depressing life

circumstances'. Adverse social conditions, in sufficient magnitude or in interaction

with predisposing conditions, can lead to depression (Gander & Jorgensen, 1990;

Maffeo et al., 1990). According to Greene (1987), sex differences in depression

scores are less likely to be observed if other variables that may modify the situation

are controlled. Maffeo et al. (1990) reported that no sex differences in depressive

symptoms remained after the effects of salary, age, and education had been

accounted for, suggesting that overall sex differences in depression were

moderated by social conditions. Goulding (1988) stated that the gender differences

found in depressive symptomatology lack robustness and that, when differences

occur, they can be explained indirectly through differences in employment, income,

and education.

For example, unemployed people report more depressive

symptomatology than employed individuals (Eaton & Kessler, 1981; Gore &

Mangione, 1983). According to Brown and Harris (1978), employment (among

other factors) protects women from depression. Unemployed females have been

found to have higher levels of depression (Kessler & McRae, 1982) and lower

levels of social support (Hall & Johnson, 1988). Nathonson (1980) and Waldron

(1980) have suggested that the positive effects of employment on health (for

women) is due to a reduction in isolation. However, men are not immune to the

effects of social interaction and support provided by employment. Bolton and

Oatley (1987) found unemployed men who developed depressive symptomatology

interacted less socially, prior to unemployment, than non-depressed jobless males.

Today's women, including mothers, face different role prescriptions than those

maturing in the past; they are expected to be employed (Reading & Amatea,

1986). According to Murphy (1986), historical trends have shown that as men's

and women's employment rates have converged (women are now employed out of

the home more) so have depression scores (resulting in reduced depression scores

in women).

Low income (Eaton & Kessler, 1981) and less education (Ross & Huber,

1985) are also positively associated with economic hardship and depressive

symptomatology. Ross and Huber (1985) found the interactive effect of low

income and less education on economic hardship was especially salient for married

females. The literature indicates a significant negative association exists between

education and depressive symptoms for males (Craig & Van Natta, 1979; Radloff & Rae, 1979). Yet, a "man's education is important to his psychological well-being only in that it increases his income and decreases perceived economic hardship, a woman's education plays an independent role in her psychological well-being" (Ross & Huber, 1985, p. 324). Employed men and women were also more likely to feel their finances were more adequate; however, men were slightly more likely than women to feel their incomes were inadequate (Keith, 1985). According to Goulding (1988), white women and men in a community population tend to be more similar than different in levels of depressive symptomatology. But, women are more likely to be demographically disadvantaged; in other words, they are less educated, more likely to be unemployed, and have lower income levels. Therefore, women are more likely to have extreme depression scores (Goulding, 1988).

Marital Status. The effect of marriage on psychiatric symptomatology is unclear. According to Ross and Huber (1985), the inverse effect of marriage on depression may be partially explained by an increase in social support. Yet, Hall and Johnson (1988) warned against assuming that marriage necessarily functions in a supportive manner by reducing the impact of stressful life events. Also, Krause, Laing, and Keith (1990) found that the direct, indirect, and total effect of marital status on psychological distress were not statistically significant.

According to Davis (1985), marriage rates have also been found to interact positively with age, with lower rates of marriage among younger subjects. Davis explains these findings as resulting from one of two possibilities. Either, older individuals have had more opportunity to get married simply by virtue of time, or marriage acts as a screening device, excluding those who are more disabled and less socially competent. As individuals mature, they become more competent socially and financially making them more attractive marriage partners. A disabled person's development (social and economic) may lag behind other non-disabled individuals in the same age grouping making them less desirable partners.

The literature pertaining to the influence of marriage upon psychiatric symptomatology is unclear; however, the effect of marriage on psychiatric hospital stays is unequivocal. Married individuals, regardless of gender, spend significantly less time in inpatient treatment, possibly indicating an increase in coping ability (Shanks & Atkins, 1985). According to Cochrane and Stopes-Roe (1981), in a British sample, marital status, for both sexes, was also associated with a lower risk of being admitted for inpatient psychiatric treatment.

Urban/Rural. According to Mueller (1981), the literature on differences in depression rates in urban versus rural settings is equivocal. Research focussing on symptoms of depression has not yielded consistent results, while surveys

assessing depression as a syndrome appear to find consistently that urban dwellers

report higher prevalence rates (J. Henderson & Pollard, 1992). Urban and rural

populations often differ on many demographic variables that are related to the risk

of depression (Neff, 1983). Measures of social networks tend to differentiate less

in rural areas since friends and relatives are likely to be seen at work or while

shopping (Olsen, 1993). A rural birthplace has also been found to correlate with

good employment and social outcomes (Munk-Jorgensen & Mortensen, 1992).

In a Quebec metropolitan sample, Kovess et al. (1987) found "a

significantly greater risk of major depressive episode than either the countryside or

the county town samples after allowance had been made for sex, education,

employment status, marital status, and experience of negative life events" (p. 461).

Yet, these researchers did not find a difference in satisfaction or frequency of

social interaction except in church going. Country residents tended to attend

church more frequently than urban dwellers. "Consequently, neither frequency of

nor satisfaction with social interactions seems likely to explain the urban-rural

differences in rates of depression" (Kovess et al., 1987, p. 462).

There are few mental health services or supports that exist outside major

urban centers. In Manitoba, people with psychiatric disorders tend to congregate in

the major urban centers and Winnipeg is known to have a better range of

psychiatric services than either rural areas or smaller urban settings. According to

Mueller (1980), increased rates of depressive symptomatology in urban settings

may be due to increased isolation resulting in a lack of social support leading to

depression [see (Brown & Harris, 1978)]. Kovess et al. (1987) attributed much of

the difference in depression rates in metropolitan areas to the large number of

unemployed males. These researchers found that the unemployed experience more

depression than the currently employed and that the urban unemployed suffer

much more than their rural counterparts.

According to MacDonald, in a 1992 survey of the same population, there

were no differences in symptomatology measures pertaining to manic or depressive

symptomatology resulting from age groupings, gender, or urban/rural residence.

According to recent literature reviews by Hartmann (1988) and Moss (1989) [cited

in McDonald, 1992], there was little difference between males and females, rural

or urban dwellers, or between age groupings in the degree of impairment from

mood disorders.

Assessing Control Variables

At this point the influences of the control variables were assessed. The

age groupings were decided upon once the range (12-113 years of age) of the

variable was determined. The age range covers 100 years; both the 12 and 113

year old are extremes, but there was no logical reason to eliminate them from the

total sample. The other information given by these individuals was congruent with

their reported ages. A three-way split was performed to ensure approximately

equal sample sizes in each age groupings. Group 1 consisted of individuals 12-39

years of age ($\underline{N}$ = 72, $\underline{M}$ = 31.76, $\underline{SD}$ = 1.90), Group 2 consisted of individuals 40-

50 years old ($\underline{N}$ = 83, $\underline{M}$ = 44.5, $\underline{SD}$ = 1.75), and finally Group 3 was made up of

individuals 51-113 years of age ($\underline{N}$ = 77, $\underline{M}$ = 62.4, $\underline{SD}$ = 1.83). There were no

significant differences in either symptomatology, $\underline{F}$(2, 220) = .07, $\underline{p}$ > .05, or

number of nights of inpatient hospitalization treatment, during three years, for the

three age groupings, $\underline{F}$(2, 64) = .10, $\underline{p}$ > .05, and the homogeneity assumption was

tenable according to Levine's test of homogeneity. The raw age variable (for the

entire sample) did correlate negatively with number of nights in an inpatient

treatment facility, $\underline{r}$(223) = -.16, $\underline{p}$ = .015 two-tailed. This negative correlation

could be due to the disease patterns common in both unipolar and bipolar

depression. Clients who are diagnosed with these disorders usually begin to display

symptomatology in the late teen years (Goodwin & Jamison, 1990) and it takes

time for diagnosis and treatment to have an effect. Many clients spend years

finding just the right treatment for their particular symptomalogy pattern.

However, when one considers only those with a hospitalization history (excluding

outliers) during the last three years the negative correlation between age and hospital stay becomes nonsignificant, $r(67) = -.04$, $p = .738$.

The sample was then split dichotomously according to respondents' gender, marital status, diagnosis (unipolar/bipolar), and hospitalization history. Males and females did differ in symptomatology reported. Females tended to report more symptomatology during the two weeks prior to the survey, $t(228) = 2.78$, $p = .006$ (equal variance two-tailed test). However, there were no sex differences in the length of time spent in an inpatient treatment facility over the last three years, $t(219) = .20$, $p = .839$ (equal variance, two-tailed test). Marital status results indicated that there were marginally significant differences in self-reported symptomatology based upon marital status. The literature is not clear whether married individuals are less symptomatic than their single counterparts. However, present results indicated that single individuals tend to report more symptoms [M(single) = 3.33, SD = 1.86; M(cohabitating) = 2.86, SD = 1.76; $t(219) = 1.96$; $p = .051$ equal variance, two-tailed test]. The literature appears to be clear about the effect of marriage on psychiatric hospitalization: Married individuals, regardless of gender, spend significantly less time in inpatient treatment, possibly indicating an increase in coping ability (Shanks & Atkins, 1985). This relationship did not hold for the current sample. Married individuals (in the entire sample) spent slightly, but

not significantly, less time in an inpatient treatment facility during the last three

years [M(single) = 18.87 nights, SD = 45.21; M(married) = 17.19 nights, SD =

38.21; t(232) = -.30; p = .764, equal variance, two-tailed test]. Married individuals

in this sample (who reported an inpatient stay during the last three years) tended to

spend a little more time in inpatient treatment [M(single) = 47.9 nights, SD =

62.01; M(married) = 54.64 nights, SD = 51.24; t(76) = .52; p = .602, equal

variance, two-tailed test] although the relationship was not significant. This

aberrant finding may be due to the population being considered in the current

sample. These individuals are members of a self-help group indicating a propensity

for help-seeking or at least an absence of fear in obtaining help. It is possible that

members of these groups are more supported by their partners and therefore they

are more inclined to seek help, are more effective in seeking treatment, or have

partners who are more effective in delaying early discharge. It is also likely that

this group of clients is better supported than persons who are not affiliated with a

self-help group. Single individuals in the group may also receive more support

from group membership equating their support with those of married individuals.

The entire sample of 233 respondents consisted of two primary

diagnostic groups, unipolar and bipolar depressive disorders. The severity of

psychiatric symptomatology is usually more intense in the bipolar group because of

the extreme points in the spectrum from mania to depression (Goodwin &

Jamison, 1990). When considering only the group with a measure of psychiatric

hospitalization during the last three years, bipolar individuals spent slightly, not

significantly, more nights in inpatient treatment facilities [M(unipolar) = 43.6, $\underline{SD}$

= 43.15; M(bipolar) = 57.5, $\underline{SD}$ = 68.91; $\underline{t}$(76) = -.95; $\underline{p}$ = .172; equal variance,

one-tailed test]. This result likely failed to attain significance due to a lack of

power in this small sample. In examining the entire sample it becomes more

evident that clients with bipolar disorders spend significantly more nights in

inpatient facilities [M(unipolar) = 12.76, $\underline{SD}$ = 30.45; M(bipolar) = 24.46, $\underline{SD}$ =

52.97; $\underline{t}$(219) = -1.81; $\underline{p}$ = .036 unequal variance, one-tailed test]. The variances

were also not equal; the bipolar group three year hospital stay results were

significantly more variable according to Levine's test for homogeneity, $\underline{F}$(2, 229) =

6.76; $\underline{p}$ = .01. The symptomatology measure results were the opposite of the

hospitalization findings. It appears that, during the two weeks prior to respondents

receiving the surveys, unipolar clients reported experiencing significantly more

severe symptomatology [M(unipolar) = 3.62, $\underline{SD}$ = 1.82; M(bipolar) = 2.76, $\underline{SD}$ =

1.75; $\underline{t}$(192) = 3.34; $\underline{p}$ = .001, equal variance, two-tailed test].

The total sample was then split based upon whether the respondent

indicated they had a history of psychiatric hospitalization. One would assume that

clients with a psychiatric hospitalization history would report more psychiatric

symptomatology than individuals who have never been hospitalized for psychiatric

treatment. This was not the case for the current sample. For the two weeks prior

to receiving the survey, respondents with a psychiatric hospitalization history

reported slightly lower measures of recent self-report symptomatology than their

non-hospitalized counterparts [$\underline{M}$(hospitalized) =2.92, $\underline{SD}$ = 1.85; $\underline{M}$(never

hospitalized) = 3.24, $\underline{SD}$ = 1.75; $\underline{t}$(224) = -1.30; $\underline{p}$ = .194; equal variance, two-

tailed test].

For the purposes of this research, since there is no clear guideline in the

literature (Kovess et al., 1987), postal code designations were used as the criterion

for making the urban/rural distinction. Statistics Canada defines rural areas as

those lying outside urban areas. An urban area is defined by a population of at least

1000 people but with a density of at least 400 persons per square kilometer. All

areas lying outside the urban areas are defined as rural. According to Statistics

Canada (1991), the postal code is a six-character alphanumeric code defined and

maintained by the Canada Post Corporation for the processing of mail. The second

character of the postal code will be a zero if the post office has designated the

corresponding area as a rural area. Characters other than a zero indicate urban

designations.

Urban/Rural distinctions were made after the surveys were returned

based upon the postal code designation on the master mailing list. Results of the

independent samples $\underline{t}$-test indicated there was no significant mean difference in

either symptomatology [$\underline{M}_{urban}$ = 3.14, $\underline{SD}$ = 1.79; $\underline{M}_{rural}$ = 2.66, $\underline{SD}$ = 1.70; $\underline{t}$(213)

= -1.57, $\underline{p}$ = .117; equal variance, two-tailed test] or number of nights

hospitalization [$\underline{M}_{urban}$ = 18.90, $\underline{SD}$ = 43.54; $\underline{M}_{rural}$ = 14.37, $\underline{SD}$ = 34.68;

$\underline{t}$(221) = -.62, $\underline{p}$ = .535; equal variance, two-tailed test] based upon the urban/rural

living situation.

Since in real life all of the aforementioned variables are likely to act upon

an individual at the same time, the contributions of the control variables were

assessed together. The entire sample was split according to the gender, age

grouping, marital status, urban/rural residence, diagnosis category, and whether

the respondent had ever been treated in an inpatient psychiatric facility. A partial

correlation analysis was performed to assess the influence of the control variables.

The partial correlation patterns, when all the control variables were included, were

compared to the raw correlations without controls. Partial correlational procedures

are related to multiple linear regression and provide a measure of linear association

between two variables while adjusting the linear effects of the additional variables.

The results indicated that controlling for all the effects of the possible confounding

variables did not significantly change the pattern of the zero order correlation coefficients between the variables to be used in the models (see Table 1. and Table 2. below). The correlations with and without the control variables were of the same magnitude and valence [except for small zero effect correlations; i.e., education and satisfaction with support]. Large positive correlations with control variables were still large positive relationships without the control variables held constant.

When the correlations on Table 1 and Table 2 were compared it became apparent that the control variables did not drastically alter the pattern of correlations among the variables being considered. Of the 28 zero-order correlational values 16 were significant; this compares to 15 significant relationships in the controlled correlations. Differences that did exist in the size of the significant correlations between the two correlational patterns were not consistent. So no clear advantage was seen in including the controlled variables. At this stage of the analysis the decision was made to ignore the control variables in further analysis. There is, however, an advantage in being able to ignore the influence of the control variables: this simplifies the model testing process and makes program evaluation and planning decisions based upon parsimonious models easier.

Table 1.

Raw zero order correlation coefficients between primary test variables not controlling for demographic variables.

	CF	SAT	SCH	EMP	FIN	FAD	SYMP	STAY
CF	- -	+ .46 p<.001	+ .11 p=.052	- .03 p=.314	+ .05 p=.237	+ .19 p=.002	- .32 p<.001	+ .07 p=.139
SAT		- -	- .001 p=.495	+ .10 p=.056	+ .14 p=.018	+ .28 p<.001	- .44 p<.001	+ .09 p=.091
SCH			- -	+ .24 p<.001	+ .23 p<.001	- .02 p=.411	- .04 p=.260	- .03 p=.325
EMP				- -	+ .44 p<.001	+ .11 p=.042	- .23 p<.001	- .17 p=.006
FIN					- -	+ .43 p<.001	- .17 p=.006	+ .01 p=.435
FAD						- -	- .32 p<.001	+ .02 p=.378
SYMP							- -	+ .16 p=.007
STAY								- -

Note. The abbreviations are as follows: p = one-tailed probabilities, CF-contact frequency, SAT= satisfaction with support, SCH=years of formal schooling, EMP= employment score, FIN= Family income score, FAD= Financial Adequacy Score, SYMP= Symptomatology measure, and STAY= number of nights in a hospital during the last three years. Sample sizes for the preceding correlations ranged between 223 and 233 respondents.

Table 2.

Partial correlation coefficients after controlling for the effects of age grouping, hospitalization history, postal code, marital status, diagnostic group, and sex.

	CF	SAT	SCH	EMP	FIN	FAD	SYMP	STAY
CF	- -	+ .46 p<.001	+ .12 p=.039	- .08 p=.130	+ .09 p=.087	+ .23 p<.001	- .33 p<.001	+ .05 p=.245
SAT		- -	+ .028 p=.344	+ .06 p=.197	+ .13 p=.036	+ .28 p<.001	- .40 p<.001	+ .05 p=.230
SCH			- -	+ .18 p=.007	+ .23 p<.001	+ .07 p=.148	- .09 p=.093	- .04 p=.306
EMP				- -	+ .35 p<.001	+ .11 p=.063	- .17 p=.012	- .19 p=.003
FIN					- -	+ .36 p<.001	- .11 p=.066	+ .07 p=.146
FAD						- -	- .28 p<.001	+ .08 p=.136
SYMP							- -	+ .22 p<.001
STAY								- -

Note. The abbreviations are as follows: p= one-tailed probabilities, CF-contact frequency, SAT= satisfaction with support, SCH=years of formal schooling, EMP= employment score, FIN= Family income score, FAD= Financial Adequacy Score, SYMP= Symptomatology measure, and STAY= number of nights in a hospital during the last three years. Sample sizes for the preceding correlations ranged between 223 and 233 respondents.

Data Analysis

Data analysis was performed in three distinct stages. In the first stage, all variables were examined for missing values and outliers. According to Tabachnick and Fidel (1989), in correlational and regression research using mean substitution for missing data will lead to more conservative beta weights and correlation coefficients. Therefore, mean substitutions were used for non-patterned missing values. All outliers beyond three standard deviations from the mean of a variable were deleted. At stage two, the influence of the control variables was determined and scale reliability measures were assessed. In the third stage of the data analysis, the path analysis models were evaluated. All data analyses for the current study were performed on either the mainframe computer at the University of Manitoba using SAS (SAS Institute Inc., 1992) programming language or the Windows version of SPSS (SPSS Inc., 1993).

Mean Substitutions and Outliers

Overall, the pattern of missing responses appeared random in nature, except that sicker individuals tended to leave more components unanswered. Of the 233 surveys considered for data analysis there were approximately 7,200 possible responses. This figure can only be approximated because of the nature of some survey questions (e.g., skip questions). Mean substitutions were made for

159 values, which is equivalent to approximately 2.5% of all the data points. The

family income measure, as could be expected, was the most likely variable to be

left blank with a total of 21 missing observations (11%). Each missing data point

was replaced with the mean of the respective question or component prior to

computing scale variables. There were few outliers evident in the data; this was in

part due to the restricted ranges of most of the variables involved. Only the

education and the three-year hospital stay data displayed any outliers. Two

extreme data points were removed from the education variable and there were 11

extreme outliers in the three-year hospital stay variable. These outliers were not

removed, but, Spearman Rank Correlations were used to assess total effect rather

than Pearson Correlation Coefficients. Since the Spearman Correlation is based on

data ranks, it is not as influenced by outliers. This issue is discussed in more detail

below.

Scale Reliability

        Although "high reliability, in terms of both internal consistency and test-

retest stability, is a desirable feature of any measure and a crucial precondition of

validity" (House & Kahn, 1985, p. 85), unfortunately there are few scale reliability

measures available for the existing social support or the financial adequacy

variables created for this research. However, internal reliability measures were

conducted on scale variables (e.g., Cronbach's Alpha) and the sample was

partitioned into two sub-samples (odd survey numbers in one sample and even

ones in the other) before scale score split-half reliabilities were evaluated. This

procedure should minimize error based on chance and test the replicability of the

findings for each scale (Krause et al. 1990; Finifter, 1972).

The contact frequency measure originally proposed consisted of the

following five components: the number of times respondents had gone out with

others, the number of times they got together with friends and family, the amount

of contact with friends and family (e.g., phone calls), and the number of times they

depended on friends and family (requiring contact), and finally the number of

people they interacted with during an average day (e.g., store clerks). The first

four components of the aggregate correlated with each other significantly with

moderate to large correlation values (r = .42 to .58 probability values < .001 two-

tailed). However, the fifth item (people interacted with) did not correlate

consistently with the other scale components (r = .10 to .37; probability values

between .128 and .0001 two-tailed) and was as a result eliminated from the

contact frequency scale score. The Cronbach's Alpha for the four components of

the contact frequency variable was r = .78. Split-half reliability (using an odd even

split based upon the survey numbers) for the two sets of data and the four

remaining items ranged between r = .71 and .74.

The financial adequacy variable was computed by summing the responses from six questions evaluating how satisfied the respondents were with their financial status. The components evaluated how satisfied respondents were with funds available for their personal needs, their home, their loved ones, for the future, for leisure, and for their family's needs. The correlations among the sub-components of the financial adequacy measure ranged between r = .72 and .86 (probability values were all < .001 two-tailed). All of the six components were related to each other with approximately the same strength so no modification of the variable components was necessary. Overall scale reliability was very high, Cronbach's Alpha was equal to r = .93 and scale split-half reliabilities ranged between r = .90 and .94.

Sample Descriptive Statistics

The current sample median age was 45 years, the mean age was 46.5 years ($\underline{SD}$ = 14.36), and the range was from 12 to 113 years. The current sample is directly comparable to MacDonald's 1992 survey of the same population since the median age for males was 45 and females was 46 years of age. The median age for the WAS (1995) was 40 with an age range between 18 and 75+ years. There was no standard deviation information available for the age of respondents in the WAS

so no direct test of statistical difference on mean ages could be performed.

The cohabitation breakdown of the present sample was as follows: 56.5% married or cohabitating with a partner and 43.5% single respondents. When comparing this sample to the WAS (1995) it is evident that the rate of partnered living arrangements is similar (54.2% married or common law in the 1995 WAS).

The employment distribution in the current sample was as follows: 25% of the sample was employed full-time, 17% were employed part-time, 16% were unemployed, 16% were retired, 7% were in school, 20% classified themselves as maintaining a home, and 28% were unemployed due to their illness. Respondents were asked to indicate all categories that applied to them so the percentages do not sum to 100%. The current sample replicates the results from MacDonald's (1992) sample since 17% of the 1992 sample of the same respondents were unemployed. The WAS (1995) employment distribution clearly demonstrates that a larger percentage of the general sample was gainfully employed since 52.9% of the sample was employed full time, 20.7% part-time, 16% were retired, 8.6 % were unemployed looking for work, and 22.1% were in school ($\chi^2_{(4)}$ = 22.43, p <.01).

There also appears to be a difference in the proportions of the samples who are in school and those looking for employment. The figure representing those who are

unemployed is likely underestimating the true number of individuals in this

population who are without desired employment. Many chronically mentally ill

individuals may have long since given up looking for work or considering

themselves unemployed. These results are in keeping with the notion that those

who are ill are less likely to be employed and that the mentally ill face a negative

cyclical pattern of less employment, more symptomatology, and reduced income

levels (Matson & Rusch, 1986)

Although, the 1995 WAS does not present an average number of

schooling years with the printed results, the approximate distribution of the

variable is offered. The level of education in the current sample is similar to the

WAS sample in the number of individuals who had a Junior-high education or less

(5.6% and 6.2%, respectively). The next category in the WAS is represented by

those individuals with High-school or non-university training (56.3%). The balance

of the WAS distribution consisted of 37.5% of the sample with some university

training. Unfortunately, the WAS (1995) did not keep a more refined measure of

education for comparison to the current sample. Thirty percent of this sample had

at least a high school education and 64% of the current sample had a post

secondary or trade education of some sort.

Family income values for the current study were also compared to the

WAS (1995) and results clearly show that the family income for the sample from

the self-help group population is distinctly different from the general Winnipeg

sample ($\chi^2_{(3)}$ = 40.52, $\underline{p}$ <.01). The median income category for the current

sample was 28,000-29,999 dollars per year (for the 1994 tax year), while the

median category for the WAS in 1994 was $40,000+. The $40,000+ category

contained 52.9% of the general WAS sample but only 23.7% of the self-help group

sample. The bottom income category on the WAS was less than $10,000 and 4.2%

of the general city sample indicated that they fell into this category. The same

category in the self-help sample included 12.5% of the respondents. It is clear from

these results that the respondents with psychiatric diagnoses affiliated with this

self-help group are at an economic disadvantage when compared to a general

Winnipeg survey sample. Sample descriptive statistics for the average variable

values for the hospitalized, and total samples are on Table 3.

Table 3.

Descriptive Statistics for the Hospitalized and Total Samples.

	INDIVIDUALS WITH A THREE YEAR HOSPITAL STAY RECORDED	TOTAL SAMPLE
SAMPLE SIZES	$N = 79$	$N = 233$
CONTACT FREQUENCY	$M = 14.0$ $SD = 4.52$	$M = 13.6$ $SD = 4.63$
SATISFACTION WITH SUPPORT	$M = 4.9$ $SD = 1.89$	$M = 4.9$ $SD = 1.96$
YEARS OF EDUCATION COMPLETED	$M = 13.2$ $SD = 3.68$	$M = 13.9$ $SD = 3.47$
EMPLOYMENT SCORE	$M = 25.1$ $SD = 29.32$	$M = 34.9$ $SD = 42.66$
FAMILY INCOME CATEGORY	$M = 12.8$ $SD = 6.94$	$M = 13.6$ $SD = 6.83$
FINANCIAL ADEQUACY SCORE	$M = 22.2$ $SD = 10.56$	$M = 22.3$ $SD = 11.07$
SELF-REPORT SYMPTOMATOLOGY	$M = 3.2$ $SD = 1.84$	$M = 3.1$ $SD = 1.81$
NIGHTS INPATIENT TREATMENT IN LAST THREE YEARS	$M = 33.6$ $SD = 27.50$	$M = 10.6$ $SD = 21.94$

Symptomatology Model Evaluation

Two sets of SAS path analysis programs, SASPA (SAS Algorithm for

Statistical Path Analysis; Huynh, 1992) and PROC CALIS (Covariance Analysis of

Linear Structural Equations; SAS, 1990; RAM statement), were run to evaluate

the effects in the specified model. Unfortunately, only the symptomatology model

was fully evaluated by the two path analysis techniques. Initial expectations

predicted that the total sample (N_T = 233) would consist of two approximately

equal sized groups (at least 100 in each group) of clients: those who had a

hospitalization history during the three years preceding the survey, and those who

had never been admitted to an inpatient treatment facility or had no history of

hospitalization during the last three years. However, the resulting sample consisted

of only 76 (33% of the total sample) respondents who had been admitted for

inpatient psychiatric treatment during the last three years. Of the total sample,

60.3% (N_{HH} = 140) indicated that they had a hospitalization history in the past and

37% (N_{NH} = 86) had never been hospitalized for psychiatric reasons. Of those

individuals who indicated they had a psychiatric hospitalization history only 54%

(N_{H3}= 76) had been admitted to a psychiatric facility during the last three years and

only 32% (N_{H1} = 45) had been admitted for treatment during the year preceding

the survey. This distribution resulted in too small a sample of hospitalized

clients; therefore, the hospitalization model could not be fully evaluated via path

analysis.

The total sample was used to evaluate the proposed symptomatology

model using SASPA. Contact frequency was the exogenous variable; however,

satisfaction with support was also considered a measure of social support and was

expected to be highly correlated with actual contact. Education, employment,

income, and perception of financial adequacy are the endogenous variables and

psychiatric symptomatology represents the ultimate outcome (dependent) variable

in the symptomatology causal model. The direction of several of the hypothesized

causal relationship could be argued to be in the reverse of the hypothesized

directions. For example, it is possible that family income influences social support

frequency and perceptions; however it is also just as likely that social support

influences family income via education and employment. There is literature

supporting many different causal orderings of all of the variables involved. Only

intensive longitudinal research will clarify the interactive nature of these variables

through the time continuum.

The particular model being tested in this research is recursive since all the

paths move in one direction only (Spady & Greenwood, 1971). The breakdown of

the model effects and the statistical significance of the direct and indirect causal

links were tested using SASPA (Huynh, 1992). Since directional tests are more

meaningful for causal analysis, and are justified by a priori predictions, significance

was based upon one-tailed tests at the .05 level. The significance of an effect

indicates that its direct or indirect effect beta coefficient value is different from

zero. Normality of variable distributions was assumed in the symptomatology

model since the sample was more than 100 respondents. According to Sobel

(1988), if sample size is greater than 100 the sample is assumed to be taken from a

normal population, thus validating the use of the Z-statistics and their

corresponding p-values as tests of significance.

Unstandardized regression coefficients estimated the effects of causal

paths (after checking residual distributions for assumptions). Although publications

have used both standardized and unstandardized coefficients, Hotchkiss (1976)

recommended using unstandardized coefficients if the goal is to compare the same

effect across subgroups, since the units of measure of the raw data do not change

between groups. The total effect of one variable upon another was estimated by

the beta coefficients from a simple regression model with an intercept. The Pearson

correlation coefficients represent the total effect of (one variable upon another) or

the path between two variables in standardized scores (see Table 4). Of the 21

possible relationships, the Pearson correlations show that there are 14 significant

total effects among the variables in the proposed symptomatology model. The

direct effects were estimated by the partial regression coefficients of the dependent

variables on the independent variables when all measured causes of the dependent

variables are included in the equation. Indirect effects were estimated by the

product of the direct effect estimates. When there was more than one pathway

connecting three variables, then the indirect effect became the sum of the products

of the direct effects involved for all the connected pathways (J. Cohen & P. Cohen,

1983).

Table 4.

Zero Order Correlation Coefficients for the Symptomatology Causal Model Variables.

	CF	SAT	SCH	EMP	FIN	FAD	SYMP
CF	– –	+ .46 p<.001	+ .11 p=.052	– .03 p=.314	+ .05 p=.237	+ .19 p=.002	– .32 p<.001
SAT		– –	– .001 p=.495	+ .10 p=.056	+ .14 p=.018	+ .28 p<.001	– .44 p<.001
SCH			– –	+ .24 p<.001	+ .23 p<.001	– .02 p=.411	– .04 p=.260
EMP				– –	+ .44 p<.001	+ .11 p=.042	– .23 p<.001
FIN					– –	+ .43 p<.001	– .17 p=.006
FAD						– –	– .32 p<.001
SYMP							– –

Note: Abbreviations: r= Pearson Correlation Coefficient, p= one-tailed probability, CF=contact frequency, SAT=satisfaction with support, SCH=years of education, EMP=employment score, FIN=family income, FAD=financial adequacy score, and SYMP=symptomatology score. The sample size for each correlation was 232, after mean substitutions.

There are two error effects considered in testing the validity of any model path, the unexplained and the spurious effects (see Figure 1). The unexplained effect is the systematic error not explained by the causal ordering of the variables in the model (Fox, 1980). The spurious effect represents the residual or random error component of the specified model and is estimated by the differences between the total and total gross effects. For a path to be valid both the unexplained and spurious effects must be smaller in magnitude than the direct effect of one variable upon another. If either of the error measures is larger than the direct effect then the model has been mis-specified and will require modification.

The preliminary fully specified model (see Figure 2) was run in both SASPA and CALIS(RAM). The model was first subjected to SASPA for the identification of invalid paths. A fully specified model is one in which each variable in the model is connected to all variables that causally follow it in the model. The fully specified model in SASPA was then evaluated for the validity of model paths. If there are paths deemed invalid by the previously detailed requirement they have to be dropped from the model and the multiple regressions and the path program rerun until all remaining paths are valid. For this data the paths connecting 'satisfaction with support' and 'years of education', and 'family income' with

'symptomatology', were invalid and needed to be removed from the model. The

multiple regressions and path analysis programs were rerun excluding these effects

(see Table 5 and 6, respectively, for structural equation system and multiple

regression results).

Table 5.

Table of Structural Equations for the Multiple Regressions for the Reduced model with the invalid paths eliminated (Hypothesized relationships are indicated with valence signs for each path).

Effects		Endogenous Variables						Exogenous Variable
Equation number	DV	SAT	SCH	EMP	FIN	FAD	SYMP	IV--CF
EQ#1	SAT	------	------	------	------	------	------	path #1(+)
EQ#2	SCH	invalid (+)	------	------	------	------	------	path #2(+)
EQ#3	EMP	path #3(+)	path #4(+)	------	------	------	------	path #5(+)
EQ#4	FIN	path #6(+)	path #7(+)	path #8(+)	------	------	------	path #9(+)
EQ#5	FAD	path #10(+)	path #11(+)	path #12(+)	path #13(+)	------	------	path #14(+)
EQ#6	SYMP	path #15(-)	path #16(-)	path #17(-)	invalid (-)	path# 18(-)	------	path #19(-)

Note: Abbreviations: independent (IV)/dependent (DV) variable pairs for each path, and structural equation number (EQ); CF=contact frequency, SAT=satisfaction with support, SCH=years of education, EMP=employment score, FIN=family income, FAD=financial adequacy score, and SYMP=symptomatology score.

Table 6.

Multiple Regression results for the Structural Equation System Based Upon the Reduced Path Model.

Equation Number	R^2	MS_e	df_e	F-ratio value	Prob.>F
EQ #1	.209	181.45	226	59.52	.0001
EQ #2	.005	11.90	226	1.19	.2764
EQ #3	.095	13139.37	224	7.83	.0001
EQ #4	.225	600.10	223	16.17	.0001
EQ #5	.258	1453.10	222	15.46	.0001
EQ #6	.278	40.98	222	16.78	.0001

Note: Abbreviations: EQ = equation number from the structural equation system, R^2 = proportion of the variance accounted for, MS_e = mean square error, and df_e = degrees of freedom.

The preliminary fully specified symptomatology model was also run in PROC CALIS to estimate goodness of fit of the saturated preliminary model. The RAM component of this program uses the standardized variables and variable covariance matrix as input. The RAM input statement specifies the number of directional causal arrow heads, which variable the path points to and from, and gives the path coefficient a name (SAS, 1990). Error measures associated with each endogenous variable in the model are also specified. They consist of two-headed arrows representing paths going to the variables in the model from the error term.

The PROC CALIS procedure provides a number of model fit indices. Many of these indices are used when building a model to fit the available data and will not be discussed with this research. However, this procedure provides many fit indices that are important if one wishes to determine if a proposed previously specified model 'fits' the data collected. The Null Model Chi Square computed by CALIS is used to evaluate whether a model is even required to explain the data. The variable intercorrelations observed in the data are compared first to a Null Model of 'independent or uncorrelated variables' (Bentler, 1989; p. 92). If the resulting chi squared value is large, it indicates that the Null Model does not explain the data well and some model needs to be built to explain data

intercorrelations (Bentler, 1989). 'In large samples, the independence model is also

a good baseline model against which other models can be evaluated for the gain in

explanation that they achieve' (Bentler, 1989; p. 92) The Null Model Chi Square

for the current data was χ^2 (21) =282.14 (p-value > 2 < .0000) indicating that the

data needed a model fit.

The other chi square model fit index provided by CALIS represents the

chi square value computed from the proposed model for the data. For the

proposed model to fit the data well this chi squared index needs to be small and

not significant at the .05 level. When this chi squared value is divided by the

appropriate remaining degrees of freedom the resulting value should be less than

2.0 to indicate a good fit according to Joreskog and Sorbom's suggestion

(Loehlin, 1987). According to the output from PROC CALIS RAM, the fully

specified symptomatology model was over-specified. The fully specified model fit

chi square was zero with a negative one degree of freedom. This kind of result can

be expected since a fully specified model was input and would use up all of the

available degrees of freedom. The two aforementioned invalid paths, identified via

SASPA, were deleted from the fully specified model at this time and PROC

CALIS-RAM was run again. The results of the reduced model indicated that the

proposed model for the data was a good fit, χ^2 (2) = 1.03, $\underline{p} < 2 = .597$.

PROC CALIS also provides a number of other fit indices that can be used to assess overall model fit. These include The Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), Bentler and Bonett's Normed Fit Index (NFI), and the Bentler and Bonett non-Normed Fit Index (NNFI). Each of the fit indices have their own particular advantages and disadvantages. In general model fit indices are based upon a fit function and a baseline model of uncorrelated (independent) variable measures. The worse the baseline (Null Model) fit and the better the proposed model fit the better the fit indices. Values of the NFI, NNFI, GFI, and AGFI greater than .90 are desirable for adequacy of proposed model fit (Bentler, 1989; Bentler & Bonett, 1990). For a detailed description of the model fit indices the reader is referred to Bentler (1989) and Bentler and Bonett (1990). The model fit indices for the symptomatology model of the current data all exceeded the .90 rule of thumb for a suitable fit model (GFI = .999, AGFI = .982, NNFI = 1.039, and NFI = .996).

The final model, including only valid paths, is called the reduced model: All variables and nonsignificant paths remain in this model although all invalid paths have been deleted (see Figure 4). For the detailed results, the direct, indirect

and total effect beta weights, for the reduced model from SASPA see Table 7. The

beta weights displayed on the aforementioned figure (see Figure 4) break down the

correlation coefficients, representing the total effect in standardized values, into

the component direct and indirect effects.

Figure 4. Reduced path model for psychiatric symptomatology.

Total Effect = ⟶
Indirect Effect = – – – – →
Direct Effect = ⟶
Non-Significant Effect = · · · · · →

p ≤ .10 = *
p ≤ .05 = **
p ≤ .01 = ***
p ≤ .001 = ****
p ≤ .0001 = *****
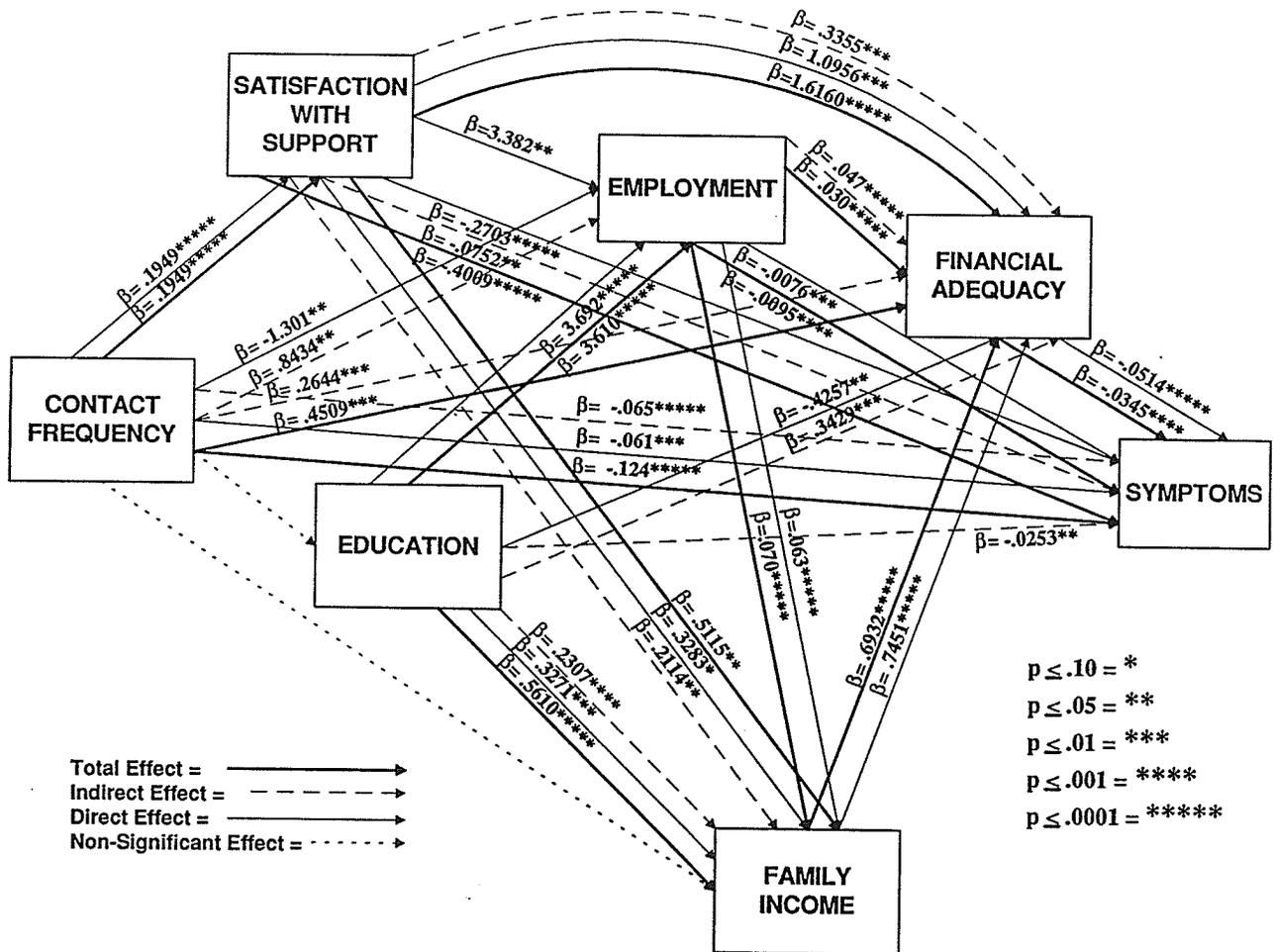
Table 7.

Direct, indirect, unexplained, spurious, and total effects for the symptomatology valid path model, including regression beta weights.

Variable Pairs IV/DV	Direct Effect		Indirect Effect	Unexplained Effect	Spurious Effect	Total Effect	
CF/SAT	β=	.1949	not applicable	-1.4 E-17	1.4 E-17	β=	.1949
	Z=	24.40				Z=	7.7150
	p <	.001				p <	.001
SAT/SCH	invalid path		invalid path	invalid path	invalid path	invalid path	
CF/SCH	β=	.0499	not applicable	-1.7 E-18	1.7 E-18	β=	.0499
	Z=	1.09				Z=	1.09
	p=	.138				p=	.138
SAT/EMP	β=	3.3824	not applicable	-1.22	-.0193	β=	2.1464
	Z=	2.17				Z=	1.48
	p=	.015				p=	.069
SCH/EMP	β=	3.692	not applicable	-.069	-.0132	β=	3.6102
	Z=	4.28				Z=	4.16
	p <	.001				p <	.001
CF/EMP	β=	-1.3010	β= .8434	1.4 E-17	-8.6 E-7	β=	-.4576
	Z=	-1.95	Z= 2.40			Z=	-.74
	p=	.026	p= .008			p=	.230
SAT/FIN	β=	.3283	β= .2114	-.022	.006	β=	.5115
	Z=	1.40	Z= 2.05			Z=	2.22
	p=	.081	p= .020			p=	.013
SCH/FIN	β=	.3271	β= .2307	-.006	-.002	β=	.5610
	Z=	2.45	Z= 3.54			Z=	4.03
	p=	.007	p < .001			p <	.001
EMP/FIN	β=	.0625	not applicable	.007	5.8 E-4	β=	.0702
	Z=	6.29				Z=	7.33
	p <	.001				p <	.001
CF/FIN	β=	.0330	β= .0517	1.4 E-17	-5.4 E-7	β=	.0847
	Z=	.33	Z= .76			Z=	.853
	p=	.371	p= .224			p=	.197

Table 7. (continued)

Variable Pairs IV/DV	Direct Effect		Indirect Effect		Unexplained Effect	Spurious Effect	Total Effect	
SAT/FAD	β=	1.0956	β=	.3355	.187	-.002	β=	1.6160
	Z=	2.92	Z=	1.77			Z=	4.46
	p=	.002	p=	.038			p <	.001
SCH/FAD	β=	-.4257	β=	+.3429	.0488	-.007	β=	-.0412
	Z=	-1.98	Z=	+2.87			Z=	.18
	p=	.024	p=	.002			p=	.430
EMP/FAD	β=	-.0197	β=	.0466	.001	7.8 E-5	β=	.0282
	Z=	-1.15	Z=	4.68			Z=	1.64
	p=	.125	p <	.001			p=	.051
FIN/FAD	β=	.7451	not		.0453	-.00671	β=	.6932
	Z=	6.99	applicable				Z=	7.10
	p <	.001					p <	.001
CF/FAD	β=	.1865	β=	.2644	-1.4 E-17	5.4 E-7	β=	.4509
	Z=	1.17	Z=	2.52			Z=	2.8430
	p=	.121	p=	.006			p=	.002235
SAT/SYMP	β=	-.2703	β=	-.0752	-.064	.009	β=	-.4009
	Z=	4.39	Z=	-1.78			Z=	-7.22
	p <	.001	p=	.038			p <	.001
SCH/SYMP	β=	-.0072	β=	-.0253	-.013	.002	β=	-.0443
	Z=	-.21	Z=	-1.75			Z=	-1.16
	p=	.417	p=	.040			p=	.122
EMP/SYMP	β=	-.00763	β=	-9.3E-4	-.001004	4.8E-5	β=	-.0095
	Z=	2.98	Z=	-1.01			Z=	-3.46
	p=	.002	p=	.156			p <	.001
FIN/SYMP	invalid path		invalid path		invalid path	invalid path	invalid path	
FAD/SYMP	β=	-.0345			-.017	1.3E-4	β=	-.0514
	Z=	-3.53	not				Z=	-4.99
	p <	.001	applicable				p <	.001
CF/SYMP	β=	-.0610	β=	-.0651	1.4E-17	.002	β=	-.1242
	Z=	-2.37	Z=	4.26			Z=	-4.97
	p=	.009	p <	.001			p <	.001

Note: Abbreviations are as follows: β = path coefficients, Z = Z-scores , p = one-tailed probability values, IV/DV = independent/ dependent variable pairs for each path, CF=contact frequency, SAT=satisfaction with support, SCH=years of education, EMP=employment score, FIN=family income, FAD=financial adequacy score, and SYMP=symptomatology score.

Hospitalization Results

        After evaluating the symptomatology model the total sample was split

based upon hospitalization history. A smaller sample (N_{H3} = 76), consisting of only

those respondents with a non-zero three-year hospitalization history, was used to

evaluate the influence of the model variables upon hospitalization. The

hospitalization and employment variables, in this smaller hospitalized sample, were

neither distributed normally nor was the sample size large enough to assume the

variables came from a normal distribution. Therefore, the path analysis techniques

used on the symptomatology sample are not appropriate. The relationships

between the variables in the hospitalized sample were evaluated with Spearman

Rank Order Correlations (see Table 8) since non-parametric measures of

association do not require a normality assumption to be valid (Levine & Fox,

1994). The Spearman Rank Order Correlations were compared with the Pearson

Correlation Coefficients and Kendal's Tau (results are not supplied with this

manuscript) and none of the correlational patterns were drastically different from

each other. The entire data set could also have been analyzed by any number of

regression approaches that do not require the normality assumption (e.g., logistic

regression, LOGIT, or PROBIT); however, these techniques are analogous to

'direct or total effect' approaches so they would not allow for evaluating and

statistical testing of the 'indirect effects' for the path model.

Table 8.
Spearman Rank Order Correlation Coefficients for the Respondents with a Psychiatric Hospitalization History During the Last Three Years.

	CF	SAT	SCH	EMP	FIN	FAD	SYMP	STAY
CF	- -	r_s=.49 p<.001	r_s=.18 p=.058	r_s=.17 p=.070	r_s=.09 p=.224	r_s=.19 p=.046	r_s=-.31 p=.003	r_s=.19 p=.048
SAT		- -	r_s=.04 p=.375	r_s=-.06 p=.299	r_s=-.003 p=.489	r_s=.18 p=.061	r_s=-.27 p=.008	r_s=.21 p=.037
SCH			- -	r_s=.30 p=.003	r_s=.28 p=.006	r_s=.07 p=.277	r_s=-.02 p=.426	r_s=.18 p=.056
EMP				- -	r_s=.24 p=.017	r_s=-.04 p=.375	r_s=-.27 p=.008	r_s=-.21 p=.031
FIN					- -	r_s=.49 p<.001	r_s=-.07 p=.261	r_s=.16 p=.079
FAD						- -	r_s=-.28 p=.075	r_s=.09 p=.209
SYMP							- -	r_s=.23 p=.021
STAY								- -

Note: Abbreviations are as follows: r_s=Spearman Correlation Coefficient, p=one tailed probability, CF=contact frequency, SAT=satisfaction with support, SCH=years of education, EMP = employment score, FIN=family income, FAD=financial adequacy score, SYMP =symptomatology score, and STAY=number of nights in an inpatient psychiatric facility during the last three years. Sample sizes for the Spearman Correlations were equal to 79 except there were 78 respondents used for the correlations involving hospitalization.

Although the entire path analysis procedure was not performed on the

smaller hospitalized sample ($\underline{N}_{H3}$ = 76), because of failure of both normality and

sample size requirements, a preliminary hospitalization model is provided in Figure

5. This model uses the Spearman Rank Order Correlations (with their

corresponding probability levels) between the variables of interest to represent the

total effect of variable pairs as hypothesized in Figure 2. Many of these Spearman

Rank Order Correlations just failed to reach significance due to the restricted

sample size. These effects were smaller and would require a sample size at least

twice the one obtained for sufficient power to detect the effects.

Figure 5. Spearman Correlation Coefficients for the hospitalized sample.
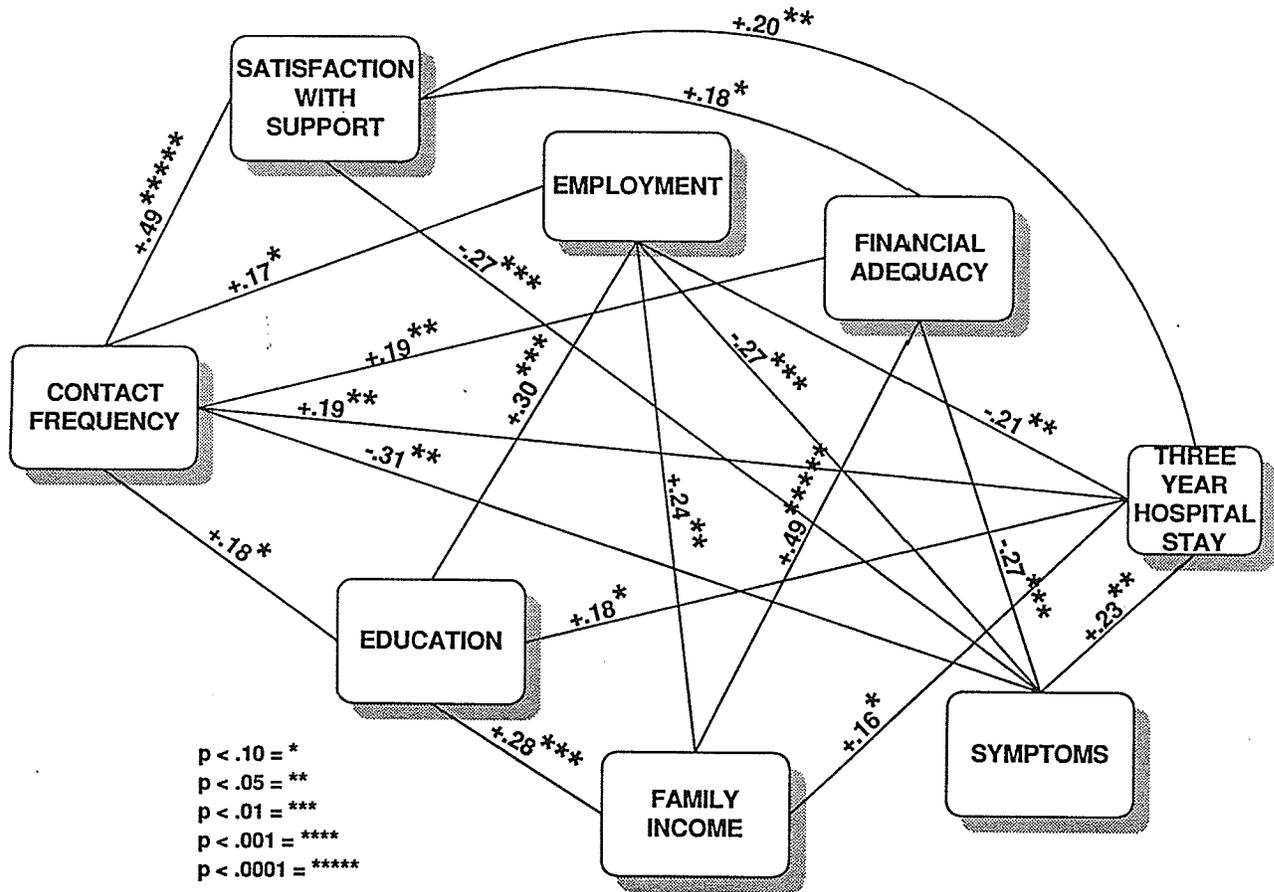
Summary of Significant Results

Numerous hypotheses were tested in the symptomatology model. There was a total of 21 paths and each path has three possible effects (direct, indirect, and total effect). Of the 21 paths two were invalid because of excessive error measures. The remaining 19 paths included 50 possible effects, (57 effects, less the 7 indirect effects that do not exist because of the ordering of the variables) 36 of which were significant at the .05 level. Two of the significant direct effects were not in the predicted direction; the effect of contact frequency upon employment score displayed a significant negative effect which competed with a slightly larger positive indirect effect, and the effect of education upon perception of financial adequacy displayed a significant negative direct effect which competed with a significant positive indirect effect of the same magnitude.

The hospitalization results, as previously discussed, are not in path analytic format. There are 28 hypothesized relationships for the proposed hospitalization model. Thirteen of these relationships were significant at the .05 level. Due to a lack of power many of these hypothesized relationships do not reach statistical significance. There was only enough power to detect effects of a moderate to large size, greater than $r = .30$, according to Cohen and Cohen (1983). Eight of the hypothesized relationships were opposite to the predicted

direction. See Table 9 for a detailed breakdown and comparison between the

symptomatology model and the hospitalization results. Only the total results are

mentioned for the hospital-stay variable; however, when the data patterns are

examined for the symptomatology component of the two sets of data, it becomes

evident that a similar pattern of relationships exist for the total effects.

Table 9.
Comparison of significant effects between the symptomatology model and the hospitalization results.

IV/DV pairs	EFFECT	HYP	Symptomatology Model Results	Hospitalization Results
CF/SAT	Direct Effect	+	+ significant	--------
	Indirect Effect	N/A	N/A	--------
	Total Effect	+	+ significant	+ significant
SAT/SCH	Direct Effect	+	invalid	--------
	Indirect Effect	+	invalid	--------
	Total Effect	+	invalid	+ not significant
CF/SCH	Direct Effect	+	+ not significant	--------
	Indirect Effect	N/A	N/A	--------
	Total Effect	+	+ not significant	+ marginally significant
SAT/EMP	Direct Effect	+	+ significant	--------
	Indirect Effect	N/A	N/A	--------
	Total Effect	+	+ significant	- not significant
SCH/EMP	Direct Effect	+	+ significant	--------
	Indirect Effect	N/A	N/A	--------
	Total Effect	+	+ significant	+ significant
CF/EMP	Direct Effect	+	- significant	--------
	Indirect Effect	+	+ significant	--------
	Total Effect	+	- not significant	- not significant
SAT/FIN	Direct Effect	+	+ not significant	--------
	Indirect Effect	+	+ significant	--------
	Total Effect	+	+ significant	- not significant
SCH/FIN	Direct Effect	+	+ significant	--------
	Indirect Effect	+	+ significant	--------
	Total Effect	+	+ significant	+ significant
EMP/FIN	Direct Effect	+	+ significant	--------
	Indirect Effect	N/A	N/A	--------
	Total Effect	+	+ significant	+ significant
CF/FIN	Direct Effect	+	+ not significant	--------
	Indirect Effect	+	+ not significant	--------
	Total Effect	+	+ not significant	+ not significant
SAT/FAD	Direct Effect	+	+ significant	--------
	Indirect Effect	+	+ significant	--------
	Total Effect	+	+ significant	+ marginally significant
SCH/FAD	Direct Effect	+	- significant	--------
	Indirect Effect	+	+ significant	--------
	Total Effect	+	- not significant	+ not significant
EMP/FAD	Direct Effect	+	- not significant	--------
	Indirect Effect	+	+ significant	--------
	Total Effect	+	+ marginally significant	- not significant

Table 9. (continued)

IV/DV pairs	EFFECT	HYP	Symptomatology Model Results	Hospitalization Results
FIN/FAD	Direct Effect	+	+ significant	-------
	Indirect Effect	N/A	N/A	-------
	Total Effect	+	+ significant	+ significant
CF/FAD	Direct Effect	+	+ not significant	-------
	Indirect Effect	+	+ significant	-------
	Total Effect	+	+ significant	+ significant
SAT/SYMP	Direct Effect	-	- significant	-------
	Indirect Effect	-	- significant	-------
	Total Effect	-	- significant	- marginally significant
SCH/SYMP	Direct Effect	-	- not significant	-------
	Indirect Effect	-	- significant	-------
	Total Effect	-	- not significant	- not significant
EMP/SYMP	Direct Effect	-	- significant	-------
	Indirect Effect	-	- marginally significant	-------
	Total Effect	-	- significant	- significant
FIN/SYMP	Direct Effect	-	invalid	-------
	Indirect Effect	-	invalid	-------
	Total Effect	-	invalid	- not significant
FAD/SYMP	Direct Effect	-	- significant	-------
	Indirect Effect	N/A	N/A	-------
	Total Effect	-	- significant	- marginally significant
CF/SYMP	Direct Effect	-	- significant	-------
	Indirect Effect	-	- significant	-------
	Total Effect	-	- significant	- significant
SAT/STAY	Total Effect	-	N/A	+ significant
SCH/STAY	Total Effect	-	N/A	+ marginally significant
EMP/STAY	Total Effect	-	N/A	- significant
FIN/STAY	Total Effect	-	N/A	+ marginally significant
FAD/STAY	Total Effect	-	N/A	+ not significant
SYMP/STAY	Total Effect	+	N/A	+ significant
CF/STAY	Total Effect	-	N/A	+ significant

Note: Abbreviations are as follows: N/A=not applicable, IV/DV = independent/ dependent variable pairs for each path, HYP. = Hypothesized relationship, CF=contact frequency, SAT=satisfaction with support, SCH=years of education, EMP=employment score, FIN=family income, FAD=financial adequacy scores, SYMP=symptomatology score, and STAY= three year hospital stays.

Discussion

The discussion that follows will be broken down into several parts. The

first two sections will discuss the ramification of the two separate model results

obtained from the data in light of the current literature. Within the framework of

each of the two models, the influence of each variable will be discussed in the

order they were mentioned in the introduction. The control variables will not be

discussed any further at this point. Suffice to say that although Mai et al. (1993)

found age, sex, and marital status influenced the length of psychiatric hospital

stays; the current results did not indicate a differential pattern of influence when

these variables were controlled. The remaining sections of the discussion that

follow will detail some of the methodological shortcomings of the current research,

will endeavor to make suggestions for future research, and will summarize the

major findings.

Symptomatology Model

Both satisfaction with support and contact frequency demonstrated

significant relationships with symptomatology in the predicted manner and appear

to be important for mental health. Each of the support measures influenced the

symptomatology measure in both direct and indirect manners supporting both the

direct and indirect theories of the influence of social support on health. Indirect

theories, including mediation, interaction, and buffering theories, propose that

social support has its influence through the interaction of social support and

environmental stressors (Sherkat & Reed, 1992; Lin & Ensel, 1989). A buffering

or interactive effect is said to exist when, in the presence of stressful life events,

the availability of social support reduces the health consequences of the stressors

(Lin & Ensel, 1989). In buffering theories, social resources work only to buffer the

effects of acute or chronic life strain on psychological distress (Wheaton, 1985;

Wilcox, 1981). Social support is said to have a direct effect on health when it

improves health independent of the stressors that may be present (Sherkat & Reed,

1992).

Whether one considers the structural (contact frequency) or functional

(perception of support) measures used in the current research the results are

similar. Structural and functional measures of social support are not mutually

exclusive and do not measure entirely different entities, but as noted by Patrick et

al. (1986) it appears as if they focus on different aspects of the support

construct. Higher contact with one's network and stronger perceptions of

support are both directly and indirectly inversely related to psychiatric

symptomatology, supporting the findings of House and Khan (1985) and Patrick

et al., (1986), respectively.

Indirect (buffering, interactive, and mediating) and direct effects of

social support appear to operate regardless of the type of social support

measured. According to reviews of the literature by Cohen and Willis (1985)

and Kessler and McLeod (1985) structural measures (like contact frequency)

influence mental health directly, while buffering effects may be more evident

with perceived functional measures (satisfaction with support) of social support.

The current results, contrary to these recent literature reviews and congruent

with the opinion of Ullah et al. (1985), support the theory that neither direct nor

indirect theories are comprehensive enough to explain the entire relationship

between social support and well-being. In fact, the direct and indirect effects of

contact frequency on symptomatology are approximately equal (β = -.065,

$p<.0001$; β = -.061, $p<.0001$, respectively; resulting in a total effect of β =

-.124, $p<.0001$). Social support, whether measured as a structural or functional

variable, appears to act in a direct and indirect manner simultaneously on self-

reported psychiatric symptomatology, supporting work by Bolton and Oatley

(1987) and Sherkat and Reed (1992). Satisfaction with support exerted a larger

direct effect than indirect effect [β = -.270, $p<.0001$ β = -.075,

$p<.05$; respectively; resulting in a total effect (with the error

measures included) of $\beta = -.401$, $p < .0001$]; however, both effects were

significant.

Social support is accepted to be a multidimensional construct (Cobb,

1979). According to Revicki and Mitchell (1990), much of the available

literature attempts to operationalize the global construct of social support and

few studies have selectively explored the differential effects of various aspects

of social support. Both satisfaction with support received and contact

frequencies were assessed in the current research and both components of the

support construct were moderately negatively correlated with self-reported

psychiatric symptomatology. Contact frequency and satisfaction with support

had significant negative direct, indirect, and total effects upon self-reported

symptomatology. These two measures of social support, quantitative (structural)

and qualitative (functional), correlate well with each other ($r = .46$; $p <$

.0001) supporting work by Sarason et al. (1983). Yet, contact frequency only

accounts for 21% of the variability in satisfaction with support.

Multicolinearity, in this case, was not a problem and the two measures of social

support clearly represent different aspects of the support construct. According to

Fiore et al. (1986), those individuals with more frequent contact with their

networks ask for support more frequently and perceive support to be more available. The positive, large to moderate, correlation between contact frequency and satisfaction with support tends to corroborate Fiore et al.'s (1986) results. These measures of different aspects of the support concept clearly demonstrate that both structural and functional measures of support can be used to assess the relationship between mental health and social support.

According to Sherkat and Reed (1992), human social relationships modify the negative effects of life stressors on mental and physical health. The current research demonstrates that social support clearly modifies the effect of life stressors, like low income, insufficient levels of employment, and poor perceptions of financial adequacy, on psychiatric symptomatology. The indirect effects of satisfaction with support and contact frequency in the symptomatology model significantly influence psychiatric symptomatology in a negative manner. The indirect effects are computed from the sum of the cross-products of the direct effects making up the path(s) between the independent and the dependent variables. Social support, whether measured as a functional or structural variable influences psychiatric symptomatology indirectly by influencing the effects of employment, family income, and financial adequacy perceptions. As

previously mentioned, the direct and indirect effects of the structural contact

frequency measure of support were of equal magnitude (β = -.061, p < .01;

β = -.065, p < .0001, respectively) and sum to give a total effect (error

measures included of β = -.124, p < .0001). The direct and indirect effects of

satisfaction with support, the functional or qualitative support measure, was not

of equal magnitude. The direct effect of satisfaction was larger (β = -.270,

p < .0001) than the indirect effect (β = -.075, p < .05). These direct and

indirect effects summed (error measures included) to give a total effect of

β = -.401, p < .0001. Yet, neither measure of social support was related to

years of education (either the path was deleted or not significant), contrary to

predictions. According to Vega et al. (1991), better educated individuals

experience more support since they have higher levels of friend contact; this

finding was not supported by the current research (at least for this group of

clients). The relationship between contact frequency and education was positive

but it did not reach significance. Also, the paths (direct, indirect, and total)

connecting education with satisfaction with support were eliminated due to

excessive error measures (either the effect of satisfaction with support on

education is negligible or there was not enough variability in comparison to

error to assess an effect). It is also possible that these divergent findings are due to the nature of the samples considered. This research used a self-help group of individuals dealing with unipolar or bipolar depressive disorders; while, Vega et al. (1991) considered only Mexican American immigrant females who had been in the United States for at least two years and were not necessarily experiencing clinical depressive symptoms. Also, the measure of psychiatric symptomatology used for the two pieces of research were significantly different. Vega's study used a modified measure of the Center for Epidemiological Studies of Depression depression scale, the CES-D (Ross & Mirowsky, 1984) while the current research used a self-referenced measure of combined manic, depressive, and possibly other symptomatology rather than a simple depression measure.

According to Roberts et al. (1982), the relationship between employment and psychological well-being is complex. The results from the current research support this complexity. Both measures of social support displayed significant positive relationships to the employment score. As predicted, those with higher social support (contact frequency displayed an indirect positive effect, and satisfaction with support showed a direct positive effect) appeared also to have higher employment scores. Individuals who are employed appeared to have a lower level of contact frequency with friends and family (indicated by the direct

effect). Yet indirectly, employment and contact frequency are positively related.

Employment may serve to boost contact frequency scores indirectly (social

support), supporting Jahoda (1982) and Lloyd's (1986) findings, or those with

higher contact may be more likely to find employment because of networking

connections (boosting employment opportunities) or because they are not as ill.

However, contact frequency also displayed a significant negative direct

relationship with employment score; as contact frequency increased employment

scores decreased. It is possible individuals who are employed do not have time

to socialize to the same extent as individuals who are not employed. These

results, when combined with the inverse indirect effect of social support on

psychiatric symptomatology (mediated by satisfaction with support), support the

findings of Cohen and Willis (1985) that social support buffers the negative

psychological effect of unemployment by substituting family and friend social

interaction for lost employment interaction. It is also possible that individuals

who are more ill with psychiatric symptomatology have more time to spend with

their support network since they are too ill to hold a job. Due to the cross-

sectional nature of this design it is not possible to determine direction of

causation unequivocally. The problems with direction of causation and cross-

sectional designs will be discussed later.

As hypothesized, individuals reporting high satisfaction scores tended to have higher family incomes. All three effects (direct: β =.328, p < .10; indirect: β = .211, p < .05, and total effect: β = .512, p < .05) were positive and the indirect and total effects were statistically significant. The direct and indirect effects were approximately the same magnitude. The indirect effect of satisfaction with support was through support satisfaction's effect upon employment; the more satisfied respondents were with support, the larger were their employment scores. Satisfaction with one's support interactions may result in a more stable environment possibly resulting in less psychiatric symptomatology and higher levels of employability leading to higher family incomes. It is also possible that individuals from families with more financial resources are more satisfied with family relationships and individuals with more stable employment may be more satisfied with their social support from fellow workers. The contact frequency measure did not influence the family income measure. Contact frequency was positively related (directly and indirectly through education and employment) to family income but none of the effects were statistically significant. Again, the causal direction of the effects cannot be

unequivocally determined with this cross sectional model.

Both support measures were significantly related to financial adequacy in the predicted manner. Individuals who were satisfied with their support and had more frequent contact with support resources clearly perceived their financial situation to be more adequate. Contact frequency indirectly influenced financial adequacy (β = .264, p < .01) via satisfaction with support, employment, education, and family income. Contact frequency also displayed a significant total effect upon financial adequacy perceptions (β = .4551, p < .01) and a direct effect failed to reach statistical significance (β = .187, p = .121). The total effect is made up of the sum of the direct and indirect effects including error. Satisfaction with support influenced financial adequacy directly (β = 1.096, p < .01) and indirectly (β = .3355, p < .01) via employment and family income, resulting in a total effect of β = 1.616, p < .0001.

Other social functioning variables were also related to psychiatric symptomatology in the predicted manner. Education exerted a significant positive influence on both employment scores (direct: β = 3.692, p < .0001, and total β = 3.61, p < .0001 effect) and family income (direct: β = .327, p < .01, indirect β = .231, p < .001, and total β = .561, p< .0001 effect) supporting the results of

Ross and Mirowsky (1989) and Brown and Lawrence (1985). Higher

educational attainment also appears to have a complicated relationship to

financial adequacy perceptions. Opposite direct (β = -.426, p < .05) and

indirect (β = .343, p < .01 effects of education on financial adequacy

perceptions appeared to cancel each other out resulting in a neutral total effect

of educational attainment on financial adequacy perceptions. Education has an

indirect positive effect on financial adequacy moderated by both employment

score and family income. As education increases, employment scores increase,

family income increases, and financial adequacy perceptions increase. This

pattern is easy to explain. This is the normal pattern for higher educated

individuals and requires very little discussion. The more intriguing finding is the

direct negative effect education appears to exert on financial adequacy

perceptions. This does not appear to be congruent with general population

patterns, one would expect higher educational attainment to be related to greater

income and therefore higher adequacy perceptions because of higher incomes

that come from higher educational attainments (except among graduate

students). However, if one considers that many individuals with psychiatric

difficulties fail to acquire and maintain employment commensurate with their

educational achievement, this result begins to make some sense. Individuals

with higher levels of education usually have higher expectations for higher

incomes, therefore expect to be more financially secure. When they evaluate

their standard of living in comparison with others of a similar educational

attainment, they are likely to be disappointed leading to poorer perceptions of

financial adequacy. These results could also be indicative of a reduction in the

relationship between education and income leading to poorer financial adequacy

perceptions due to the current changes in the economic climate. These results

would be better explained if there were current data on financial adequacy

perceptions in the general Winnipeg population; however these measures have

not been used in any current WAS study.

Education also appears to exert its effect on psychiatric

symptomatology in an indirect manner through its effect on financial adequacy

perceptions, employment score, and family income. Both education (Sherkat &

Reed, 1992) and income (Ross & Mirowsky, 1989) are negatively related to

depression. Current results did not completely support these findings. Education

by itself does not exert a direct effect on psychiatric symptomatology. Family

income was not clearly related to psychiatric symptomatology since the path had

to be deleted due to inflated error measures. These results, in general, appear

not to support Ross and Mirowsky's (1989) general population sample results.

These findings must be considered in light of the special nature of this

population, the necessity of deleting the path connecting psychiatric

symptomatology and family income (due to excessive error), and the fact that

the zero order correlation between family income and symptomatology, r(232)

= -.17 (p = .006), was in the predicted direction. These findings partially

support the results of Sherkat and Reed (1992) in a recently bereaved

population. Education significantly predicted depression in these bereaved

individuals until the social support variables were included into the model. The

current results indicate that education does not significantly predict

symptomatology directly, when social support variables are included in the

model, supporting Sherkat and Reed's (1992) findings. However the zero order

correlation between education and depressive symptomatology [r(233) = -.04,

p = .260) in the current research did not support their findings that education

was significantly related to depressive symptomatology in this group of

bereaved individuals prior to the support variables being considered in the

model. These divergent findings must also be considered in light of the

differences in the measures used to assess psychiatric symptomatology. Sherkat

and Reed's (1992) and Ross and Mirowsky's (1989) research used a modified

measure of the Center for Epidemiological Studies of Depression (CES-D)

(Ross & Mirowsky, 1984). The CES-D measure of depression is specific to a

community sample and does not indicate a diagnosis of clinical depression (Ross

& Mirowsky, 1989). The symptomatology measure employed with the current

research was intended to give an estimate of severe clinical symptoms for

individuals with both manic and depressive symptomatology so it is not directly

comparable to the CES-D.

Taken together education, employment, and family income are

common indicators of socioeconomic status. Employment is an important social

marker (Brenner & Mooney, 1983), unemployment has an independent effect on

depressive symptoms and exacerbates a person's ability to adjust to stress

(Dressler, 1986), and lack of financial resources hampers one's ability to meet

basic needs, influencing psychological health (Feather, 1989). According to

Ross and Huber (1985), unemployed individuals face economic hardship

because of a lack of income resulting in depression and feelings of helplessness.

Chronic economic difficulties may explain the relationship between income and

depressive symptomatology (Pearlin et al., 1981). Current results support the

findings in the literature: employment was related to family income, financial

adequacy, and psychiatric symptomatology in the predicted manner.

Employment is related directly to higher levels of family income (direct effect:

β = .063, $\underline{p}$ < .0001, total effect: β = .070, $\underline{p}$ < .0001) and perceptions of

financial adequacy (total effect: β = .030, $\underline{p}$ < .0001) and employment influences

financial adequacy perceptions indirectly (β = .047, $\underline{p}$ < .0001) through family

income. Individuals with higher employment scores have higher family

incomes, and higher perceptions of financial adequacy as predicted.

Employment and perception of financial adequacy are related to psychiatric

symptomatology in an inverse manner as hypothesized. Employment was

negatively related, directly and via a total effect (direct effect: β = -.008,

$\underline{p}$ < .01, total effect: β = -.0095, $\underline{p}$ < .001), to self-reported symptomatology.

According to Keith (1985), income does not have a direct effect on health; but

exerts its effect indirectly through perceived adequacy of income. The present

results support Keith's (1985) findings; family income did not exert a direct

effect on symptomatology (since the path had to be deleted) but did exert a

direct (β = .745, $\underline{p}$ < .0001) and total (β = .693, $\underline{p}$ < .0001) influence on

perception of financial adequacy which influenced symptomatology in both a direct (β = -.051, $\underline{p}$ < .0001) and total (β = -.034, $\underline{p}$ < .001) manner. These results also support the findings of Laing et al. (1980) and Ross and Huber (1985) that subjective dimensions mediate the objective characteristics of the environment. Also, Pearlin et al. (1981) proposed that chronic economic strain may help in explaining the relationship between income and depression; as income decreases economic hardship increases and as a result, depression also worsens. The current results support this explanation of the relationship between income and depression. In the symptomatology model, income was inversely related to financial adequacy and financial adequacy perceptions had an inverse relationship with self-reported psychiatric symptomatology.

Hospitalization Results

Although a path-like diagram was furnished for the hospitalization results, the reader is reminded that the coefficients on the path model are Spearman Rank Order Correlations and not regression beta weights as in the symptomatology model; as a result, one-to-one or direct comparisons are not appropriate between the two models. Also, the Spearman Rank Correlation Coefficients in Figure 5 represent the total effect of one variable rank upon another

in standardized scores; therefore, they cannot be decomposed into the direct and

indirect effects that are appropriate for the symptomatology model.

The primary hypothesis of this research predicted that a causal negative

relationship existed between social support (contact frequency and satisfaction

with support) and psychiatric symptomatology and hospitalization. The results

from the symptomatology model supported these hypotheses. As previously

discussed, for the symptomatology model, both contact frequency and satisfaction

with support were negatively related to symptomatology and positively related to

each other. For the hospitalization data it appears that both contact frequency and

satisfaction with support are, again, positively related to each other as in the

symptomatology model ($r_s = .49$ $p < .0001$), and are both significantly inversely

related to self-report psychiatric symptomatology ($r_s = -.31$, $p < .01$; $r_s = -.27$,

$p < .01$, respectively). However, in the hospitalization results, contact frequency

and satisfaction with support are both positively related to three year hospital stays

($r_s = .19$, $p < .05$; $r_s = -.20$, $p < .05$, respectively). These relationships are the

opposite of the predicted relationships and are incongruent with the pretest sample

of hospitalized clients (Murray, 1995). These findings are possibly due to the

nature of the population being assessed. The respondents in this research, unlike

the hospitalized clients in the pretest sample, are already members of a self-help

group. Clients who participate in such groups are different from other individuals

who have the same psychiatric diagnoses (Gidron, Guterman, & Hartman, 1990).

It is possible that individuals who belong to self-help groups are more active help-

seekers, and are supported in seeking help by their networks.

Another explanation for the positive relationship between social support

and hospitalization might be that increased contact with a supportive network of

friends and family results in an increased likelihood of symptom identification and

resource mobilization. An increase in the identification of severe psychiatric

symptomatology could result in a strong support system mobilizing to facilitate

psychiatric hospitalization. According to Mechanic (1989), there are many

variables that influence recognition of psychiatric symptomatology and the

initiation of care. Some of these variables include: the visibility, recognizability,

salience of deviant behavior; the extent to which a person perceives the symptoms

as serious, the extent to which symptoms disrupt primary role functioning and

social activities, the persistence or frequency of symptoms, the tolerance of those

interacting with the ill individual, the availability of information, knowledge of and

cultural understanding of the evaluator, and the availability of financial and

treatment resources (Mechanic, 1989). Numerous mechanisms interact to facilitate

symptom identification and resource mobilization. It is possible that more contact

with the individual with psychiatric symptomatology helps family and friends

become more knowledgeable about psychiatric symptoms so they recognize

smaller variations in the client's "normal" behavior. It is also possible that larger

networks of individuals supporting a particular client are also more likely to have

at least one individual who is less tolerant of deviations in the client's behavior.

Also, frequent contact with a smaller network of supportive individuals may lead

to the "burn-out" of available supports and tolerance for aberrant behavior.

According to Cohen and Syme (1985), "large networks may be stress

reducing but at the same time consist of cosmopolitan members who have pro-

medical care orientations"(p. 255). The present results clearly support Cohen and

Syme's (1985) perspective; not only are contact frequency and satisfaction with

support negatively related to symptomatology; but, they positively relate to the

hospitalization measure which is also positively related to education, family

income, and financial adequacy perceptions.

Contact frequency was also marginally positively correlated to

employment and financial adequacy as in the symptom model ($r_s = .17$, $p = .07$;

$r_s = .09$, $p < .22$, respectively). However, contact frequency was marginally

positively correlated to education in the hospitalization data ($r_s = .19$, $p < .058$)

and family income was not significantly related to contact frequency in either the

symptomatology or the hospitalization results. The marginally significant positive

relationship between contact frequency and education, in the hospitalized sample,

supports the findings of Vega et al. (1991). It appears, in this sub-sample, that

individuals with higher levels of education experience more support since they

have higher levels of friend contact. As with the symptomatology model,

satisfaction with support was not related to education (r_s = .04, p =.38) in the

hospitalized sample, and had a marginally significant positive relationship with

financial adequacy (r_s = .18, p = .06). Satisfaction with support, unlike in the

symptomatology model, did not have a significant relationship with family income.

There was no total relationship between satisfaction with support and employment

in the hospitalization model but there was an indirect effect in the symptomatology

model.

Education, employment, and family income were related to each other in

the predicted manner as in the symptomatology model. However, the relationship

between employment and financial adequacy was not significant in the

hospitalization model (r_s = -.04, p = .38). Yet, in the symptomatology model there

was both a total and indirect positive effect of employment on financial adequacy.

This failure to reach significant results in this case is not due to a lack of power

caused by too small a sample (a sample twice this size would not result in a

significant result). The lack of effect in this case could be due to the limited

variability of the employment variable in the hospitalized sample. Most of the

hospitalized clients had no employment during the year preceding the survey.

Employment was negatively related to both symptomatology and hospitalization as

predicted. Employment is often used as an indication of social functioning and

contributes not only to family income but to perception of financial adequacy.

According to Spohn (1992), longer stays in psychiatric facilities are correlated with

poor pre-morbid functioning, a more chronic course, and less outside support.

Also, clients who are repeatedly admitted to psychiatric facilities appear to suffer

from economic problems (Munves et al., 1983) and economic conditions were also

found to contribute to extended stays (Mai et al., 1993).

The relationship between family income and hospitalization was the

opposite of the hypothesized direction and not significant; however this effect just

failed to reach significance due to sample size restrictions. Apparently individuals

with more financial resources are admitted to inpatient treatment facilities for

longer periods. These results are opposite to results of a recent Manitoba study

that found the seriously mentally ill congregated in neighbouhoods with low

average household incomes and experienced longer hospital stays than those living

in higher income neighborhoods (Tataryn, Mustard, & Derksen, 1994). The

measure of income in this study was each client's family income in 1994 and is not

directly comparable to the average neighbourhood income measure used in the

Tataryn et al. (1994) findings. The Tataryn et al. (1994) study also evaluated a

different population (included schizophrenics with other psychotic disorders) than

the present research which focused only on unipolar and bipolar depressives. This

finding is also contrary to results from North American populations. Most research

finds an inverse relationship between socioeconomic status and psychopathology

(Kessler, 1982) and socioeconomic status has been found to inversely influence

length of psychiatric hospital stays (Mai et al., 1993). The relationship between

family income and symptomatology failed to reach significance in the

hospitalization model (deleted due to error in the symptomatology model).

Possibly the trend away from psychiatric hospitalization because of scarce

resources is influencing the relationship between family income and psychiatric

stays. Since education is also positively correlated with length of stays (r_s = .18, p

= .06), and education, employment score, and family income are positively related

to each other (education/employment: r_s = .31, p < .01, education/family income: r_s

= .28, p < .01, and employment/family income: r_s = .24, p = .017), apparently those

with more financial stability (at least in this self-help client sample) may now be

preferentially admitted to and/or retained longer in increasingly scarce inpatient

treatment facilities. These results appear to imply that those from lower

socioeconomic groups bare the burden of mental illness and receive the least care (Hollingshead & Redlich, 1958).

Hollingshead and Redlich (1958), in their ground-breaking research, discovered that there were distinct differences in social class and mental illness. These differences included: a bias in the prevalence of treated mental illness based on class structure, a difference in diagnostic categories over differing class structures, and treatment variations because the clients belonged to different classes. For example, there were clear differences in which class of individuals received which type of treatment. Higher class individuals received most of their care from private care physicians (since they were able to absorb the financial costs) while lower class individuals were more likely to receive care from public and state run facilities (where the cost to the patient would be minimal). There was also an negative association between class and being a psychiatric patient; the lower the class the greater the proportion of patients. Class and diagnostic category displayed significant relationships. Lower class individuals were more likely to be labeled psychotic while higher class individuals received neurotic diagnoses more frequently. Treatment differences were also evident in this research; higher class individuals received more psychotherapeutic methods of treatment (with more experienced professionals), while lower class individuals

received more organic therapies or custodial care (from nonprofessional staff).

Higher class patients were also more expensive to treat. According to

Hollingshead and Redlich (1958), these differences are in part due to class

differences between the treating personnel (psychiatrists) and the client. Lower

class individuals were seen to benefit less (be less treatable) from intervention that

included being seen by a psychiatrist and receiving some form of 'insight therapy'.

The current results could also be due to family and friends with more

educational and economic resources being more able to mobilize and plead the

client's case with admitting personnel. Individuals with more contact with a

support network made up of "higher-class" individuals seem to have more

educational and economic resources and it may be easier for admitting personnel

(psychiatrists and doctors) to identify with the client and family members in

keeping with Hollingshead and Redlich's (1958) findings that psychiatrists were

more likely to identify higher-class patients as more treatable (better patients).

Molica and Milic (1986), in a follow-up of Hollingshead and Redlich's

(1958) work, found that the model proposed by Hollingshead and Redlich needed

revisions. The follow-up study indicated that social class was not the only variable

that influenced the treatment of mental illness. Diagnosis, employment history, and

gender contributed to the types of treatment offered lower-class patients. Females

from lower classes were more likely to be assigned to units in facilities that offered

psychotherapeutic treatments. Psychotherapy was also more available to lower

class individuals with psychoneurotic diagnoses. The degree of successful

employment also appears to positively predict the likelihood of the client being

assigned psychotherapy as treatment. This follow-up considered lower-class

patients only for the determination of treatment assignment and found a more

symptom/diagnosis based approach to assigning treatment. Drug and alcohol-

addicted patients were excluded from psychotherapy and were treated in more

categorical unit settings specializing in each illness.

Ideally psychiatric treatment should be based on a symptom/diagnosis

basis rather than on socioeconomic variables, like class membership. When one

considers the severity of self-reported symptomatology one would expect that the

individuals reporting a history of psychiatric hospitalization would report more

severe symptomatology than those individuals reporting no history of psychiatric

hospitalization. The current results indicate that those with a psychiatric

hospitalization history did not report more severe psychiatric symptomatology than

those with no psychiatric hospitalization history. In fact, self-reported psychiatric

symptomatology, for the two weeks prior to the receiving the survey, was

marginally higher in those without a psychiatric hospitalization

history [M(hospitalized) =2.92, SD = 1.85; M(never hospitalized) = 3.24,

SD = 1.75; t(224) = -1.30; p = .194; equal variance, two-tailed test]. These results

may be due to causal ordering ambiguities, between hospitalization and

symptomatology, because of the cross sectional nature of the present research. The

apparent reduced level of symptomatology in the hospitalized group could also be

due to the treatment effect of the psychiatric hospital stay, bringing

symptomatology of the hospitalized group more in line with individuals who are

not hospitalized for psychiatric symptomatology. The direction of causation cannot

be determined unequivocally at this time. Longitudinal research will be necessary

to answer this question.

Financial adequacy was marginally negatively correlated with

symptomatology (r_s = -.28, p = .07). This result is congruent with the

symptomatology model. Since family income and financial adequacy are positively

related those who perceive their financial situation as more positive are likely to

come from families with higher family incomes. Yet, financial adequacy was not

significantly related to hospitalization. The Spearman Rank Order correlation

was small in magnitude and was in the opposite direction to the direction

hypothesized. This may be due to the positive correlation between family

income (which positively influences perception of financial adequacy) and

hospitalization.

The relationship between psychiatric symptomatology and three year hospital stays was positive and significant as predicted but was of a small effect magnitude (Cohen et al., 1983). However, it was of the same magnitude as the effects of other predictor variables considered in this research. These results support the research findings of Keitner et al. (1992), Norquist (1988), and Mattes (1987) that symptomatology and diagnostic related groups are poor predictors of resource consumption. This symptomatology effect on hospitalization is of the same magnitude as satisfaction with support, contact frequency, education, employment, and family income. It appears as though all these social functioning variables play a role in the length of psychiatric hospital stays in this population. Some of these correlations failed to reach significance since the sample size was restricted; however, the magnitudes of the correlations are large enough to warrant further investigation with larger samples. Since age, sex, and marital status were dropped from further consideration because of the results of the partial correlations, there is more evidence supporting Gordon et al's. (1985) findings that these variables do not by themselves significantly improve the prediction of resource consumption.

<u>Research Limitations and Future Research Suggestions</u>

There are several methodological shortcomings involved in this research. The most serious limitation of the current research is its cross-sectional design. Most studies on the effects of social support on psychiatric symptomatology have been cross-sectional; they are therefore ambiguous as to the direction of causality (Bolton & Oatley, 1987). Future research in these areas needs to be longitudinal in nature to allow variables to be clearly placed in a time continuum. Longitudinal research in this area also needs to consider the confounding and possibly non-recursive relationships that exist in these types of social causation models (Hanlon, 1981). The remaining methodological difficulties with this piece of research include: lack of power in the hospitalization sub-sample, biases introduced by self report data, availability biases (a type of response bias due to memory problems), lack of an adequate measure of symptomatology, and lack of generalizability. The balance of this section will discuss the aforementioned difficulties, how these issues may influence the results, and what measures were taken or considered to solve each problem.

Regrettably, the group of clients reporting a psychiatric hospitalization history during the three years preceding the survey date consisted of only 76 individuals. This proportion was lower than originally anticipated creating a sample

size problem. The symptomatology model had enough power to detect even a small effect; however, the hospitalization sample was too small to detect small to moderate effect sizes (Cohen, 1983). Future research should consider the apparent reduced rate of hospitalization in self-help group memberships or will have to treat the hospitalization in a more categorical form to allow for the consideration of the many zero values in this population. If a categorical value was used to assess the relationship between the predictor variables and hospitalization then a form of logistic regression would be necessary for statistical testing purposes. This categorical approach for the presence of psychiatric hospitalization would also allow for the assessment of which variables predicted whether psychiatric hospitalization occurred.

According to Bradburn et al. (1987), survey accuracy declines rapidly as the number of questions increases especially if the response time-frame is limited. Since this is a mail survey and the respondents may be dealing with psychiatric symptoms, a fifteen minute time-frame was selected for maximum response and survey completion rates. These restrictions made it impossible to include a standard measure of symptomatology. The current measure of symptomatology is quite different from past measures of symptomatology (e.g., The Rand 36-item health survey's Emotional well-being scale; Hays et al., 1993). The present

measure not only asks respondents how severe their current symptoms are, it also

asks them to reference their symptoms in time (i.e., one pole of the measure is "the

worst they have ever been"). This measure does not only measure depressive

symptomatology, manic symptoms and other psychiatric symptoms may be

included in clients' reporting of severity of symptomatology and the current

measure is also self-referencing rather than other-referencing. Future research

should validate the very simple measure of symptomatology used in this research

against a commonly accepted measure like the Rand 36-Item Health Survey

Emotional Well-being Scale (Hays, Sherbourne, & Mazel, 1993).

Mental health care research has historically focused on symptomatology,

or clinical pathology, and in particular self-report symptomatology instead of social

functioning. Symptom intensity should be indicative of pathological severity and

hospitalization rates, but, measures of symptomatology do not correspond directly

with physiological change, and symptom reporting is influenced by several factors

including pathology (Mechanic, 1972). According to Segal (1990), hospitalization

is influenced by variables other than psychiatric symptomatology. It is clear from

the current results that self-reported psychiatric symptomatology is only partially

responsible for length of psychiatric inpatient treatment. Many social functioning

variables influenced hospitalization including social support. Also, when

substitutive care is needed, hospitalization is often used as the easy solution and

the preferences of the psychiatric staff and the number of available psychiatric beds

will influence who is admitted to a psychiatric facility as much as the severity of

the patient's symptoms (Segal, 1990). This relationship between bed availability

and admittance will become even more crucial as mental health resources become

more scarce with all the recent budget cutbacks. Future research needs to focus

upon the influence of variables other than just psychiatric symptomatology if

administrators truly wish to reduce hospitalization resource consumption.

Since support measures must be chosen and/or designed based upon the

research question of interest (Cohen & Syme, 1985) few data are available on the

psychometric qualities of the various measures of social support in the support

literature. Also, according to House and Kahn (1985), there is "no criterion

validity against which measures of social relationships, networks, and support can

be assessed" (p. 86). These authors suggest that the best test of the validity of a

social support measure is whether it significantly predicts a health outcome. For

example, according to House and Kahn (1985), "the litmus test of the validity of

any measure of social support is it's [sic] relationship to the major causes and

consequences of social support"(p. 87), in this case, psychiatric symptomatology

and the length of psychiatric hospital stays. Both social support measures (simple

as they were) appeared to predict both symptomatology and psychiatric

hospitalization, but further work is required to confirm the usefulness and stability

of these measures for other population groups.

Since quantitative contact frequency reports are easy to obtain from

respondents, the primary support measure used in this research estimated the

quantity of interactions respondents had in the last two weeks and used this as a

stable measure of available support to evaluate the relationship between support

and the three-year hospitalization variable. This rationale is questionable and ties

into the cross-sectional difficulties with this research; however, according to

Brugha et al. (1990), levels of support contact were stable through time but levels

of negative interaction and dissatisfaction with support were less stable. According

to House and Kahn (1985), contact frequency measures have been found to have a

high 1-year test-retest reliability, be more stable when compared with qualitative or

functional measures, and not be as influenced by mental health status; also, social

relationships must "exist in some quantity before they can have a structure and

supportive content or function" (p. 89). These authors also stated that these types

of quantity measures of social contact have been found "to relate cross-sectionally,

retrospectively, and prospectively to lower rates of psychological and physical

disorders and mortality" and that there is "substantial evidence for their construct

validity in terms of their relationships with health outcomes"(pp 89-90).

Social contact is one of the important advantages/assets of self-help organizations, yet only 50% of the family members of those clients with chronic mental disorders believed that support/self-help groups were important (Cutler, 1994). Gidron, Guterman, and Hartman (1990) found that those who participated in self-help groups for parents of the mentally ill tended to come from a higher socioeconomic background, used more interactive active coping strategies, and were more stressed with psychosocial burdens of the situation; while those not participating tended to suffer more from basic survival issues (like finances) and used fewer active coping approaches. Usually, the members of these types of societies are highly motivated in endeavors that may help further their cause, creating a volunteer bias. A pilot test of the survey instrument indicated that respondents were well motivated since they took extra time to complete an open-ended question about current society functioning. However, at the same time, any particular group of members may be dealing with a recurrence or exacerbation of psychiatric symptomatology reducing the likelihood of responding to surveys.

Since this sample was not a randomly selected sample from the general population, the results are not representative of all clients with Depression and Manic-Depression. These results are only generalizable to members of a self-help

group who are diagnosed with Depression or Manic-Depression because, as stated previously, individuals who affiliate themselves with self-help groups are different from those who choose not to participate. However, biases that may arise from lack of random sampling may be offset by a reduction in bias due to a reduced response rate that may have resulted from a mass mailing to a general population sample. Future research needs to focus on replicating these findings in another self-help group population, evaluating the variable interaction patterns longitudinally, reexamining the relationships in a larger sample of hospitalized clients, and replicating the pattern of results in a non-self-help group sample.

<div align="center">Summation</div>

Williams et al. (1981) suggested that an additive model of direct effects best explains the relationship between support, life events, and mental health. Their direct model approach proposes that stressful life events (e.g., the variables considered in this research were low income, low levels of employment, low educational attainment, and poor financial support) have a direct negative effect on mental health outcomes, while social support is seen to have a positive direct effect. On the other hand, according to Patrick et al. (1986), deterioration in well-being was the greatest for respondents with a low level of social support independent of adverse life events. Yet, the overall pattern of Patrick et al's.

(1986) results gave weak support for both buffering and direct effects. Also,

Atkinson et al. (1986) stressed that researchers need to accept as a fundamental

concept the socially structured interdependence of life and stress events.

The current research tends to support both Patrick et al's (1986)

buffering effect approach and Atkinson et al's. (1986) direct effects model.

Although the support measures definitely exerted a direct inverse relationship with

self-reported psychiatric symptomatology and both employment and financial

adequacy exerted direct negative effects on symptomatology, there is evidence of a

much more complicated pattern of interaction between stressors and support

measures. The combined model explained approximately 28% of the variance in

self-reported psychiatric symptomatology. There are numerous indirect effects

evident in the symptomatology model supporting the buffering perspective (e.g.,

contact frequency upon symptomatology, employment, and financial adequacy;

and satisfaction with supports effect upon symptomatology, family income, and

financial adequacy). Overall, and as suggested by Eisemann (1984), investigators

must take more of a multifactorial view of the etiology and development of

depressive disorders and mental health resource utilization.

Psychiatric hospitalization remains a large part of the appropriate

medical treatment of individuals with chronic psychiatric illnesses (Solomon,

Davis, & Gordon, 1984). The present psychiatric hospitalization results indicate

that numerous variables influence psychiatric hospitalization as well as a client's

reported psychiatric symptoms. In fact, self-report symptomatology only

explained 5% of the variability (in ranks) in the amount of psychiatric

hospitalization used by respondents during the last three years. The magnitude

of this effect is equivalent to the effects of the other predictor variables in the

hospitalization data (e.g., employment 5%, education 3%, satisfaction with

support 4%, family income 3%, and contact frequency 4%). This research

supports the view that a psychiatric client's symptoms are poor predictors of

resource utilization (Keitner et al., 1992). These results also support Eisemann

(1984) multifactorial view of the etiology and development of depressive disorders

and mental health resource utilization.

While it may appear that the arguments put forward with this research

are proposing a simple social creation explanation for psychiatric

symptomatology and hospitalization, the author would like to point out that

social selection also plays a role in the eruption of psychiatric symptomatology

and subsequent hospitalization. For decades psychologists, medical doctors,

sociologists, and social workers have debated the causes of psychiatric illness.

Different camps choosing various and opposing research results to support their favored theoretical position. The data that has become available during the last ten years clearly supports a genetic component as at least significantly responsible for the predisposition towards severe mood disorders (i.e., unipolar and bipolar depression)(Goodwin & Jamison, 1990) consistent with the nature component of the nature/nurture dichotomy in psychological fields and the social selection component of the social selection/social causation dichotomy in sociological fields. Social causation theorists believe, at least in schizophrenic clients, that the development of schizophrenia is due to the risk factors associated with lower socioeconomic status; while social selection theorists believe that the lower socioeconomic status of individuals with schizophrenia is the result of the mental illness rather than its cause (Link, Dohrenwend, & Dohrenwend, 1986). Since very little can be done to alter the nature or social selection component of psychiatric illnesses the author believes it is up to researchers to discover if the social creation/nurture component can be modified to bring about a reduction in maleable social stressors that do influence psychiatric disposition in susceptible populations.

The present results have implications for policy changes. There may be

inequities in the allocation of hospitalization resources based upon family income instead of symptomatology or available social support resources. Although psychiatric symptomatology (assessed as a self-report measure) significantly predicted three-year psychiatric hospital stays, resource allocation was also predicted by education and family incomes. Those with higher education attainment, higher scores on contact frequency, and larger family incomes seem to spend more time in psychiatric inpatient facilities.

The path analysis methodology used in this research forced clear specification of the presumed causal relationships among the variables in the symptomatology model. These types of techniques are useful in psychosocial research since they allow researchers to assess both the direct and indirect effects of networks of variables and to test each effect for statistical significance (Sobel, 1988). With the causal effects of pertinent variables clearly delineated, patient management practices, specifically service specification and delivery, can be changed to affect the most salient changeable predictor variables, possibly causing a reduction in length of hospital stays and reduced symptomatology for these psychiatric clients.

The clients in the self-help sample, utilized in this research, who were

more satisfied with the support they received, had more contact with friends and family, higher educational attainment, higher employment scores, more positive perceptions of financial adequacy, and also appeared to have fewer psychiatric symptoms. These results indicate that it may be more cost effective to proactively commit psychiatric financial resources to social programs that aim at providing psychiatric clients with more stable social (social support skills) and economic environments (increase employment and educational opportunities thereby making financial conditions more secure), rather than reactively dealing with the costs associated with increased psychiatric hospitalization brought on by inadequate social support and poor economic living conditions.

The more information we have about the social functioning variables that contribute to psychiatric symptomatology and hospitalization, the better we can plan programs to reduce the personal, emotional, and financial costs associated with psychiatric hospitalization (Ahr et al., 1981) and prevent repetitive hospitalizations (Goodman & Johnson, 1986) while still providing clients appropriate medical treatment. Mentally ill individuals should have the right to live, outside mental institutions and psychiatric hospitals, in the least restrictive environment that ensures they are not a threat to themselves or

others. However, a shift from a strict medical model and psychiatric

hospitalizations would require major improvements in the availability of

alternative community-based care facilities and programs which would also

provide relief for family care-givers.

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Appendix

The Society For Depression and Manic-Depression of

Manitoba: Social Support, Employment, and Hospitalization Survey (1995)
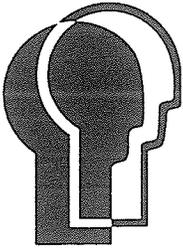
THE SOCIETY FOR DEPRESSION AND MANIC-DEPRESSION OF MANITOBA INC.

PROVINCIAL OFFICE: 4 - 1000 NOTRE DAME AVENUE, WINNIPEG, MANITOBA   R3E 0N3 —
TOLL FREE (OUTSIDE OF WINNIPEG)

November 1995

Dear Society Member:

We are writing to ask you for a very important favor. We need about 15 minutes of your time to fill out and return the attached confidential questionnaire. It has been written in an attempt to evaluate the effects of social contact, education, employment, and income have on mental health and hospitalization, and to record basic information about members of the society who are afflicted with Depression and Manic-Depression. This survey and the subsequent analysis are being coordinated by a member of our society. She is a Graduate Student from the University of Manitoba. The information will aid with her research and help us evaluate existing mental health needs and services and aid in better serving society members.

You will notice an identification number on the top right-hand corner of your questionnaire. This is for mailing purposes and to make mailing subsequent waves of the survey possible. Surveys will be returned to the society offices. Your name will never be placed on the questionnaire and no one's name will be released under any circumstances. We will be sending similar surveys out about every six months. You can indicate your willingness to receive the future surveys by answering one of the last questions on the attached survey.

It is important we receive as many responses as possible. Participation is voluntary but the more responses we have, the more your voice will be heard, and services to you will be improved. Please try to answer every question as they are all important. The bottom line is very simple, we hope the information from this survey will help patients receive better services. A summary of the results will be published in the Society newsletter approximately six months from the completion of data collection.

If you have any questions, please write or call. Our telephone number is (204)-786-0987. Thank you for your valuable time and assistance in completing this questionnaire.

Yours sincerely   Thank you,

William P. Ashdown   Linda T. Murray
Executive Director   Graduate Student
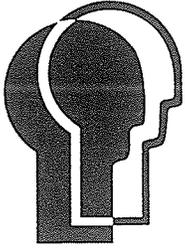
THE SOCIETY FOR DEPRESSION AND MANIC-DEPRESSION OF MANITOBA INC.

The Society for Depression and Manic-Depression of Manitoba: Social Support, Employment and Hospitalization Survey (1995).

IMPORTANT: THE FOLLOWING SURVEY IS PRINTED ON
BOTH SIDES OF THE PAGE. PLEASE TURN THE PAGES OVER.

you the member of the family who is diagnosed with either unipolar or bipolar (Manic-
ression) depression?

   YES____(continue with the balance of the survey then return the completed questionnaire
          in the stamped envelope provided-- Thank you!)

   NO_____(would you please give this survey to the family member who meets the requirement
          or indicate your ineligibility and return the uncompleted survey in the stamped
          envelope provided-- Thank you!)

s initial group of questions is to determine how active you are socially and how many
ends and relatives you can depend upon for support. (Unless otherwise indicated, please
cle the number next to the answer you would like to give.)

How many times in the last two weeks have you gone out socially with other people? For
mple, go out shopping or to the movies?

                    MORE THAN THREE TIMES................5
                    THREE TIMES..........................4
                    TWICE................................3
                    ONCE.................................2
                    I HAVE NOT GONE OUT SOCIALLY
                    DURING THE LAST TWO WEEKS............1

Approximately, during the last two weeks, how often did you get together with your friends
relatives, either in your home or in their home?

                    MORE THAN THREE TIMES................5
                    THREE TIMES..........................4
                    TWICE................................3
                    ONCE.................................2
                    NONE OF THIS TYPE OF CONTACT.........1

In the last two weeks, approximately how many times have you had contact with your friends
relatives that did not include a personal visit? For example, you called them on the phone
they wrote you a letter (regardless of who initiated the contact).

                    MORE THAN THREE TIMES................5
                    THREE TIMES..........................4
                    TWICE................................3
                    ONCE.................................2
                    DURING THE LAST TWO WEEKS THERE WAS
                    NONE OF THIS TYPE OF CONTACT........1

During the last two weeks, how many times did you depend on your friends or relatives for
p, advice, money, or friendship?

                    MORE THAN THREE TIMES................5
                    THREE TIMES..........................4
                    TWICE................................3
                    ONCE.................................2
                    I DID NOT DEPEND ON MY FRIENDS OR
                    RELATIVES THE LAST TWO WEEKS........1

Are you satisfied with the support you receive from others?

        VERY   VERY   DO NOT
        DISSATISFIED   SATISFIED   KNOW
             1   2   3   4   5   6   7   8

On an average DAY, how many people do you interact with (including at work, if you work)
t you would not consider to be either friends or relatives? For example, going to a
venience store and talking to the clerk.

                    MORE THAN THREE......................5
                    THREE................................4
                    TWO..................................3
                    ONE..................................2
                    NONE.................................1
                                          (Please turn over the page)

During the last THREE YEARS, approximately, has your contact with others:

        REMAINED THE SAME _____? (GO TO QUESTION # 9)
        INCREASED _____?
        DECREASED _____?

To the best of your ability, please estimate the approximate amount your contact with
others has changed. The previous question will tell us the direction of the change.

        0-19%...................................1
        20-39%..................................2
        40-59%..................................3
        60-79%..................................4
        80-100..................................5

Approximately, considering all the SOCIAL time you spend with other people, what percentage
this time do you spend with relatives?

        0-19%...................................1
        20-39%..................................2
        40-59%..................................3
        60-79%..................................4
        80-100..................................5

following group of questions are about your hospitalization history if you have one.
ease include information ONLY about hospital stays related to your mood swing disorder.

Have you ever been hospitalized for your psychiatric disorder?

        YES_____ (GO TO QUESTION #11)
        NO _____ (GO TO QUESTION #14)

In the last THREE years, to the best of your recollection, how many nights did you spend
the hospital?
        NUMBER OF NIGHTS_____

In the last YEAR, to the best of your recollection, how many nights did you spend in the
spital?
        NUMBER OF NIGHTS_____

During the last THREE years, how many times have you been admitted to the hospital for
chiatric reasons?
        NUMBER OF ADMITTANCES_____

When you are ill with psychiatric symptoms and you are NOT admitted to the hospital, what
you do to care for yourself? For example, are there community resources you depend upon?

_____

_____

_____

following group of questions are about your employment (PLEASE INCLUDE SELF-EMPLOYMENT),
ication, and your income. We ask these questions because they are important to the goals of
s research and to improving future services for society members. The actual source of your
ome is not important but we do need to know the amount of funds from ALL sources available
you and your family. If you are not in paid employment please enter zero to the next two
stions.

In the last year, how many weeks were you employed full time?

        NUMBER OF WEEKS_____

In the last year, how many weeks were you employed part time?

        NUMBER OF WEEKS_____

What kind of work do/did you normally do? That is, what is your job title? If you are not
king at this time, answer the last job title you had. If you have never worked in paid
loyment please leave blank.
        OCCUPATION/JOB TITLE_____

What is your employment situation at the present time? Please circle the number next to
responses that apply to you. Are you:

```
a) EMPLOYED FULL TIME..............................1
b) EMPLOYED PART TIME..............................2
c) UNEMPLOYED, LOOKING FOR WORK...................3
d) UNEMPLOYED, NOT LOOKING FOR WORK..............4
e) RETIRED........................................5
f) IN SCHOOL......................................6
g) MAINTAINING A HOME.............................7
h) VOLUNTEERING...................................8
I) UNEMPLOYED DUE TO ILLNESS......................9
j) OTHER (PLEASE SPECIFY)_____99
```

If you are employed, how many hours have you worked in the last two weeks? If you are not
ployed for any reason, please enter zero. If during the last two-week period you were on
idays, please use the full two-week period prior to being on holiday.

```
ZERO HOURS..........................8
1 TO 10 HOURS.......................7
11-20 HOURS.........................6
21-30 HOURS.........................5
31-40 HOURS.........................4
41-50 HOURS.........................3
51-60 HOURS.........................2
MORE THAN 60 HOURS..................1
```

In the last year, how many weeks of paid employment did you lose due to your illness? (If
have not worked in the last year because of your illness please enter 50 weeks.)

NUMBER OF WEEKS_____

Would you please indicate your family's TOTAL available income (before taxes) for the 1994
year? Please include ALL funds your family received regardless of the source. For example,
the rent on your principle residence was paid for you then add the value of the rent to
r income. (Circle the closest alternative.)

```
NO INCOME..........00        26,000-27,999.......13
UNDER $3,000.......01        28,000-29,999.......14
3,000-5,999........02        30,000-31,999.......15
6,000-7,999........03        32,000-33,999.......16
8,000-9,999........04        34,000-35,999.......17
10,000-11,999......05        36,000-37,999.......18
12,000-13,999......06        38,000-39,999.......19
14,000-15,999......07        40,000-44,999.......20
16,000-17,999......08        45,000-49,999.......21
18,000-19,999......09        50,000-or more......22
20,000-21,999......10        DO NOT KNOW.........98
22,000-23,999......11
24,000-25,999......12
```

In your household, approximately, what percentage of the total family income do you
tribute?
```
0-19%.............................1
20-39%............................2
40-59%............................3
60-79%............................4
80-100%...........................5
```

The following questions deal with how satisfied you are with your financial situation and
it influences your daily life. If you are very satisfied, you would circle the number 7.
you are very dissatisfied, you would circle the 1. If you are neither satisfied nor
satisfied you would respond with a 4 which means you are as satisfied as you are
satisfied. How satisfied you are with the following items? (circle one of the responses)

the amount of money you have for clothes and personal expenses.

VERY						VERY	DO NOT
DISSATISFIED						SATISFIED	KNOW
1	2	3	4	5	6	7	8

(Please turn over the page)

the amount of money that you have to spend on things for your home.

```
        VERY                              VERY        DO NOT
        DISSATISFIED                      SATISFIED   KNOW
            1     2     3     4     5     6    7          8
```

the amount of money you have to spend on the people you love.

```
        VERY                              VERY        DO NOT
        DISSATISFIED                      SATISFIED   KNOW
            1     2     3     4     5     6    7          8
```

the amount of money you have been able to save for future needs. (For example, retirement.)

```
        VERY                              VERY        DO NOT
        DISSATISFIED                      SATISFIED   KNOW
            1     2     3     4     5     6    7          8
```

the amount of money you have available for leisure activities.

```
        VERY                              VERY        DO NOT
        DISSATISFIED                      SATISFIED   KNOW
            1     2     3     4     5     6    7          8
```

he money you have available for your family's financial needs.

```
        VERY                              VERY        DO NOT
        DISSATISFIED                      SATISFIED   KNOW
            1     2     3     4     5     6    7          8
```

would now like to ask you a few questions about your vital statistics that will aid in erpreting results.

Are you married or cohabitating with a partner at present?

```
            YES_____1              NO_____2
```

What is your current diagnosis? _____

What type of health professional gave you this diagnosis ?_____

During the last two weeks how severe were your psychiatric symptoms?

```
        NO                               THE WORST THEY    DO NOT
        SYMPTOMS                         HAVE EVER BEEN    KNOW
            1     2     3     4     5     6    7               8
```

Are you?   FEMALE_____1   MALE_____2

What is your age in years?_____

In total, how many years of schooling do you have? This includes the total of grade school, h-school, vocational, technical, and university training.

```
            NUMBER OF YEARS_____
```

Since this information is important for program planning and evaluation, this study will continuing for the next few years. Would you like to remain a valuable contributor to this earch? If so, please indicate so and you will receive a very similar survey every six ths. The results of the study are completely confidential and information about general dings will be printed in the society newsletter at the completion of data collection.

```
        I WOULD LIKE TO CONTINUE TO
        RECEIVE SURVEYS........................YES      NO
```

Please feel free at this point to make any comments or ask about the society or this stionnaire. Any and all comments will aid in improving services available to members in the ure.

_____

_____

_____

_____

THANK YOU FOR YOUR TIME AND COOPERATION!