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Living With Psychiatric Patients: The Relationship Between Family Burden And Mental Health Among Family Members

Samuel Noh

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LIVING WITH PSYCHIATRIC PATIENTS: THE RELATIONSHIP BETWEEN FAMILY BURDEN AND MENTAL HEALTH AMONG FAMILY MEMBERS

by
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Submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

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ABSTRACT

Current policy with respect to psychiatric patients is to minimize the amount of time they spend in institutions. This policy has resulted in large numbers of ex-hospitalized patients residing in the community. While it is widely acknowledged that living with a psychiatric patient is likely to be stressful, little research attention has been focussed on the extent of burden experienced by family members or on the consequences of living with a psychiatric patient for one's mental health. This study reports findings on the extent of burden experienced, and on the relationship between level of such burden and the mental health status of family members as measured by the General Health Questionnaire.

The data for this study were obtained in interviews with 211 adults who were spouses or parents of adult patients who had been hospitalized with a diagnosis of functional psychoses. About half of these patients had been diagnosed as schizophrenic.

Evidence suggested that family members tended to experience a substantial degree of burden. The central analyses of this study applied multivariate regression analyses to assess the joint and independent associations of family burden and psychosocial and demographic variables with mental health status of family members. Family burden was not found to be as important as were mastery and social support for the mental health status. Moreover, a statistically significant relationship between family burden and mental health scores was observed only among subjects who lived with schizophrenic patients. Although the cross-sectional nature of these data precluded causal inferences, some possible implications of these findings with respect to intervention and community treatment programs were discussed.

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CHAPTER 1

INTRODUCTION AND GENERAL OBJECTIVES

For many years, researchers have been examining the associations between the prognosis of discharged psychiatric patients and family structure. Two contradicting perspectives on the interpretation of this relationship have emerged from these investigations (Arey and Warheit, 1980; Kreisman and Joy, 1974).

The first perspective suggested that the extent of the patient's post-treatment adjustment was substantially determined by the family. The various familial factors were found to influence the prognosis of discharged patients. Negative emotions of family members that are expressed about the patient (Brown et al., 1972; Leff, 1976; Vaughn and Leff, 1976), incongruence between the patient's expectations and the family's expectations regarding the patient's performance after his or her discharge from the hospital (Brown, 1959; Freeman and Simmons, 1963; Greenly, 1979; Serban et al., 1976), and the availability of a social support system (Caplan, 1974; Cobb, 1976; Kaplan et al., 1977; Lindenthal et al., 1971) were among the most significant factors.

The second perspective argued that these emotional and behavioral patterns of the family are reactions to the patient's disability or disturbance rather than determinants thereof. The discharged patient in the home was seen as a source of strain and distress among other family members. This alternative view has been taken primarily by investigators who have focused upon the consequences of a mental illness (Arey and Warheit, 1980). Grad and Sainsbury (1968), for example, found that family members of discharged patients complained of severe psychological distress manifesting itself as insomnia, headaches, irritability and depression, as well as having disruptions to their social and economic life. The level of their complaints was directly related to the severity of the patient's illness. In a study of 125 lower class families who had one discharged patient in the home, Doll (1976) found that the "price" that families "paid" for maintaining the patient in the home resulted in severe psychological strain and social isolation. These findings are congruent with conclusions drawn by other researchers (Creer and Wing, 1974; Hertz et al., 1976; Hoenig and Hamilton, 1969; Pasamanick et al., 1967).

Such emotional strain and socioeconomic difficulties borne by families have been labelled as "family burden". While the term family burden has been employed as an umbrella concept to include all aspects of familial problems, it has also frequently been divided into "subjective burden" and "objective burden". Subjective burden refers to "the family's perception of duress and oppression caused by the patient's presence at home" (Arey and Warheit, 1980:160). Objective burden, on the other hand, refers to the degree of the patient's failure in role performance "including symptomatology, financial distress (employment), impairment of relative's health, adverse effects on children, and disruption of social routine" (GAP, 1978:318).

The primary purpose of this study is to consider the mental health and factors associated with the mental health of individuals who are coping with mentally disturbed members in the home on a daily basis.[1] Literature reporting on the association between the strain or family burden imposed by the presence of a disturbed member and the mental health of family members appears to be scarce.[2] This study examines this relationship. Specifically, this study will:

1. examine the nature and extent of family burden and its relationship with sociodemographic factors and patient characteristics;
2. evaluate the association between

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[1] The term mental health is broadly defined, and mental or psychological disturbance and mental illness are sometimes used interchangeably.

[2] Throughout this thesis, the terms family member(s), significant others, family informants and respondents are used interchangeably.

family burden and the mental health of the patients' family member; and

3. identify social and psychological factors that mediate or moderate the relationship between family burden and the mental health of the family members.

In this study family burden is considered in terms of the two components of objective and subjective burden that have frequently been distinguished. Objective burden refers to the extent to which the patient's social and role performance is judged as maladaptive by their significant other, and the degree to which the patient's presence is disruptive to the activities and routines of family members. Subjective buren refers to the degree of situational or emotional strain experienced by the family members associated with the patient's symptomatic behaviors, concern for the patient's safety, and the dependency of the patient on other members of the family.

Clearly, the conceptual distinction between subjective and objective burden is, to some extent, artificial. After all, the same individual whose perceptions of situational strains defines subjective burden reported on the adequacy of the patient's social behavior and role performance which defines objective burden. The likelihood that the respondent's evaluation of the patient's behavior will be influenced by the level of associated strain appears substantial. Nevertheless, it seems useful to distinguish these two aspects of family burden for three reasons. First, as will be shown later, the behaviors and disruptions that are used to index objective burden are quite concrete in nature and are therefore not particularly vulnerable to perceptual biases. Second, this procedure will allow comparison of findings with those from prior research. Finally, the analyses will allow some assessments of the extent of confounding between the two dimensions, since they will examine the relationship between objective burden and subjective burden and the factors associated with variations in the strength of their relationship. The rationale for examining this relationship is set forth in the next chapter.

In broad outline, the initial steps toward these objectives involve:

1. reviewing the literature on the nature and extent of the burden experienced by families with former psychiatric patients living at home;
2. reviewing an increasingly accepted conceptualization of the role and significance of social and psychological factors for mental health; and

3. applying the derived perspective to this study of family burden and proposing a theoretical model.

It should be acknowledged that the proposed model is both tentative and incomplete. It is set forth as a promising theoretical perspective that provides a basis for hypothesizing interconnections between factors to be examined in this study.

A review of the literature on the psychological status of, and the burden experienced by, the families of ex-psychiatric patients will be presented in Chapter Two. In Chapter Three, a theoretical model of the social and psychological correlates of mental health will be presented. Chapter Four will propose a model based on the review in Chapter 3. The model will attempt to apply the reviewed material to the research objectives of this study.

Chapter 5 will outline the methods utilized in the research and includes information on the sources of the data, the sampling framework, sample size considerations, and the measurement of major variables. The following two chapters will be devoted to the results of the study. Chapter 6 will present results concerning the extent of family burden and will consider its relationship with various factors. Chapter 7 will report on the associations between mental health outcomes and family burden, and the mediating and/or moderating role of social and psychological factors such as mastery and social support. Finally, the summary, the discussion and the conclusions will be presented in Chapter 8.

CHAPTER 2

BACKGROUND: REVIEW OF LITERATURE ON FAMILY BURDEN AND MENTAL HEALTH OF THE PATIENT

Much of the research about family burden has been primarily descriptive and the careers of family members of mental patients have been more commented upon than systematically studied (Grad and Sainsbury, 1968). Thus, it is not unusual to read comments concerning our shortage of knowledge regarding the social and emotional difficulties experienced by families who must cope daily with a former patient, and the "complex, ambivalent, often inconsistent and unacceptable emotional reactions of those faced with this daily burden" (Doll, 1976:305).

An early study of the family's reaction to a mental disorder was reported ~~by Clausen~~ and Yarrow and their colleagues (Clausen and Yarrow, 1955a, b; Clausen et al. 1955). Family members, mostly wives, of 33 men who were admitted to psychiatric hospitals for schizophrenia were interviewed. The authors gathered retrospective data on the reactions of the families at early stages of the illness and followed them through the period during and after hospitalization in order to assess the impact of a mentally ill husband on the family. The emotional, financial and social costs of mental illness to wives, children and extended family members were described. This report, however, was descriptive, and failed to consider factors that might be associated with variations in the "costs" experienced.

In the 1960's, research on mental patients in the community began to receive more attention primarily because of the contemporary trend toward community care of the mentally ill. Disruptions of the family's social life, the financial hardship, the extra burden of homemaking and other difficulties were described as "objective burden". The emotional or psychological hardships imposed by such extra burden (objective) were labelled as "subjective burden". Therefore, subjective burden is defined as "the family's perception of duress or oppression caused by the patient's presence in the home" (Arey and Warheit, 1980:-160).

In my view, it can be reasonably argued that the difficulties and shortcomings of research in this field result, in part, from a tendency among researchers to approach the issue without a theoretical base. The development of an adequate and useful theoretical framework in this area may have been especially difficult because of the complexity of interrelations and interactions between the patient and other family members, and the distinct but related problem of establishing causal direction.

2.1. Family Burden

In their classic study of schizophrenics in the community, Brown et al. (1966) included an assessment of the difficulties and problems experienced by family members and relatives. The study involved 339 patients who were discharged from psychiatric hospitals in Britain, and included data from a five-year follow-up of the patients. They neither used the term "family burden" nor distinguished the objective and subjective aspects of the problems. The study did, however, report on the extent and nature of something they termed "problems reported by relatives". These problems were assessed within five areas:

1. an adverse effect on the health of a family member as a result of the patient's behavior;
2. definite worries about adverse effects on any children in the home, as well as fears for their safety;
3. worries about finances;
4. interference with the family's social and leisure life; and
5. other concerns or worries (i.e. unemployment).

The results indicated that the problems reported by relatives were quite severe. When the patients had been admitted only once, about 50% of the relatives reported at least one problem. When the patients had been hospitalized for psychiatric reasons more than once, at least one problem was reported by about 75% of their families. The problems concerning the effects on the children and other family members were more frequently reported than difficulties with family's financial and social/leisure life.

Nearly half (46%) of the informants reported additional problems. Most frequently reported were the patient's inability to adequately perform his/her core role (e.g., unemployment), disruptions in family routines (e.g., other family members having to be absent from work because of the patient), interference with family aspirations and ambitions, and distorted behaviors and lack of affection shown by the patient. While the extent of the problems in these areas tended to be similar whether the patient was male or female, financial difficulties were more frequently reported by the families of male patients.

Although the study by Brown et al. (1966) reported some important findings about the problems experienced by families, it did not attempt to classify the problems. "Burden" was neither conceptually defined nor divided into objective and subjective components, and those factors that might influence the level of experienced burden were not systematically investigated.

Pasamanick et al. (1967) also studied schizophrenics in the community and, as part of the information collected on the patient's functionings, data were collected on what they termed "patients as problems". These data were drawn from a 22-item scale that measured the patient's behavior (e.g., trouble at night, patient's behavior is upsetting, sexual problems, odd speech and ideas, etc.). This scale was employed, however, as an effort to include relatives' observations in assessing the patient's post-hospital performance. Although the frequencies of each item were reported as "patient as burden", the authors did not focus on family burden or examine the correlates of such burden. It should be noted, however, that this 22-item scale addresses the content of subjective burden as defined in other studies and as well as in this study (see Chapter 1). Each item of the scale asks respondents to indicate how much the presence, behavior, and dependency of the patient causes worries, anxieties and difficulties in the family. The present study employs a portion of the scale used by Pasamanick and his colleagues to assess subjective burden. A detailed description of this measure is provided in Chapter 5.

Toward the end of the decade, several British investigators began to consider family burden in more detail (Grad and Sainsbury, 1968; Hoenig and Hamilton, 1969). Grad and Sainsbury (1968) focused on the comparison of two treatment modes, hospital treatment and community care, in terms of their impact on the well-being of the family members of the patient. Family burden was measured by the effects that the patient had on the family in the areas of employment, social and leisure life, income, health of the family and the family's relations with their neighbors.

During the two-year study period, more than 35% of the relatives of patients in the community care system and slightly less than 30% of the relatives of those in the hospital treatment group felt that the patient significantly affected their family routines, their social and leisure life, their income, or their children. Only about 10% of the relatives of patients in each treatment group reported that their physical health and employment was affected. The most frequently reported burden suffered by family members was the effect on their mental health. "They ascribed their symptoms of emotional disturbance to worry about the patient, and one-fifth of them attributed their frankly neurotic symptoms such as insomnia, headaches, excessive irritability and depression to concern about the patient's behaviour" (Grad and Sainsbury, 1968: 271). These reported levels of mental health disturbances were higher among the relatives of patients who received community care treatment than hospital-treated patients. The authors' conclusions were emphasized in the following:

> Perhaps the most ominous finding of the analysis presented in this paper is that the social cost of psychiatric care in the community service was higher in terms of its effect on the mental health of family members ...[Thus] we are obliged to consider whether their continued presence in the home is leading to the production of more mental illness in the community (p.277).

It should be noted that these investigators included emotional disturbance as a measurement of family burden, and failed to report on any associations between the emotional disturbance of family members and other indicators of family burden. More importantly, it is not clear whether the assessment of family burden used in their study was an objective assessment of family problems (objective burden), or whether it was only the subjective perceptions of family members (subjective burden). Since the assessment was directed toward the relatives' expressions of the extent to which they felt the family was affected by the adverse effects of the patient, it seems more appropriate to consider the measure used by Grad and Sainsbury as an assessment of subjective burden.

Hoenig and Hamilton's (1969) study involved a stratified sample of 273 patients from a total of 959 psychiatric patients who were admitted to two hospitals for the first time during a one year period in the late 1950's. It specifically distinguished between objective and subjective burden and consisted of the relationship between the two dimensions. These authors defined and studied two categories of family problems, that together were labelled as objective burden. These were:

1. specific effects on the daily life of the household in four particular areas (finance, health, effects on children and family routines); and

2. the occurrence of certain abnormal behaviours in the patient (i.e. wandering about at night, use of odd speech or expression of unusual ideas, hypochondriasis, etc.).

The inclusion of abnormal behaviors in the assessment of objective burden was based on the assumption that such occurrences must, by themselves, represent some burden on the household.

Subjective burden was defined as the extent to which family members felt the family had been affected by the objective burden as defined above. In their study, objective burden was interpreted as being the source of subjective burden. More than half (55.7%) of the families reported at least some objective burden and the extent of this burden was similar to that reported by Brown et al. (1966) and Grad and Sainsbury (1968). The level of reported objective burden was higher among the patients' spouses than among parents and other kin of the patients. The longer the history of the patient's illness, the more likely he/she was considered to be a burden to the family. These findings were consistent across varying diagnostic groups.

However, subjective feelings on the part of members of the patient's household "by no means corresponded with what one might have expected from the assessment of objective burden" (Hoenig and Hamilton, 1969:104-105). Of their total group of informants, only one-quarter expressed "some" feelings of subjective burden. Of all the informants in households where objective burden was experienced, less than 60% reported "some burden" and less than 20% reported "severe burden".

Three points should be made with reference to these findings. First, there were no clear operational definitions of objective and subjective family burden. Second, objective burden is classified in two general areas--disruptions to family life routines and the patient's inability to perform expected social roles. Third, it is important to note that, as reported by Hoenig and Hamilton (1969), subjective burden was substantially independent of the extent of objective burden. This last point is theoretically significant because it implies that there must be other factors that influence the extent to which objective burden was translated into subjective feelings of strain. In other words, the level of susceptibility of family members to objective burden must be conditioned by various personal characteristics and socio-environmental circumstances.

Hoenig and Hamilton (1969) reported three factors that influenced the differential effects of objective burden on subjective burden. When the informants were children of the patient, they appeared to suffer less objective burden; however, they tended to show one of the highest rates of subjective burden. Secondly, there were differences between the diagnostic groups. Schizophrenic patients caused little severe subjective burden when compared with organic syndromes and affective psychoses, although the households of schizophrenic patients reported equally severe rates of objective burden. Thirdly, while the level of objective burden increased with the length of the illness history, the extent of subjective burden ceased to increase when the length of the illness reached the second year.

In sum, there have been only a small number of studies of family burden and family burden has not been adequately defined. Operational definitions of the concept have not clearly distinguished the objective problems or difficulties presented by the patient from the subjective perceptions of family members regarding the patients' adverse effects on the family. It is surprising that "the same investigators who provided ample documentation of the career of the mental patient have so sadly neglected the reciprocal career of the patient's family" (Kreisman and Joy, 1974:34). In particular, there is a scarcity of knowledge about the independent and joint effects of objective and subjective burden on the psychological well-being of members of the patients' families.

2.2. The Mental Health of the Members of the Patient's Family

Most of the available research on the mental health of psychiatric patients' family members has dealt with the children of psychiatric, primarily schizophrenic, patients. The major purpose of most of these studies was to investigate possible etiological factors in the occurrence of mental illness among the offspring of schizophrenics. It is now well documented that the offspring of schizophrenics have an elevated risk of developing schizophrenia or other forms of mental illness (e.g., Bleuler, 1978; Fischer and Gottesman, 1980; Gottesman, 1978; Hanson et al., 1977; Mednick et al., 1971; Sameroff and Zax, 1978; Schachter et al., 1977; Sobel, 1961). However, we cannot conclude from these data that a mentally ill individual in the home causes psychological distress to family members. Especially, uncertain is the effect upon members of the family who are not biologically related to the patient (i.e. spouse).

There appears to be only one study that has assessed the relationship between the psychological well-being of the family and the presence of emotionally disturbed members in the home (Arey and Warheit, 1980). The study consisted of two sets of data obtained through interviews. First, data were collected from an epidemiological survey of 4,202 adults in the community. The second set of data was obtained from a clinical interview of 118 mothers who had sought to have their children admitted to a children's psychiatric hospital. All of the respondents were administered a psychological well-being index consisting of measures of depression, anxiety and social dysfunctioning. Subsequently, the respondents were grouped into high and low distress groups. The high distress group represented those who scored higher than one standard deviation above the sample mean. The total sample was also categorized into two groups, families with, and families without, disturbed members. Interviews in the community survey were completed by 4,135 persons and among them 779 (19%) said "they had a family member with serious nervous or emotional problems".

The study of Arey and Warheit (1980) disclosed several provisional, but important, findings. First, having a family member in the home with nervous or emotional problems had a significant influence on the mental health of other family members, regardless of demographic characteristics such as gender, social class and race. There was a direct positive relationship between the presence of an emotionally disturbed member in the home and the risk of mental disorders for other family members. Second, the authors argued that consideration should be given to two basic dimensions of mental health--psychological distress and social dysfunctioning. Finally, the comparison of the mother's clinical interview with the community mother's data indicated that having a psychiatrically disturbed child in the hospital did not significantly increase the relative risk of mental disturbance for other family members. However, the risk of mental disturbance for other family members increased if the disturbed child was at home. The implication is that maintaining psychiatrically ill members in the home is much more stressful than having those same members hospitalized.

This thesis focuses on the extent to which objective and subjective burden are related to psychological distress among the patients' significant others with whom they reside. Specifically, it will examine the influence of psychological and social or situational factors which may affect the mental health of family members. As well, the relationship between burden and psychological distress will be assessed. The available literature has provided no direct evidence pertaining to the association between the extent of burden and the psychological distress or mental health of family members. As noted earlier, there is some evidence which indicates there is a considerable amount of family burden caused by patients residing at home, and that the subjective burden experienced by families is not entirely determined by the reported level of objective burden. This finding seems to indicate that there must be some social and/or psychological factors which would explain the discrepancy between objective burden and the subjective assessment of the impact of such reported difficulties upon the family.

From a theoretical perspective, this matter has not been sufficiently considered. The current treatment policy for psychiatric patients is to have the patients living in their home environment rather than in institutions (Arey and Warheit, 1980; GAP, 1978). This policy has resulted in large numbers of patients residing with their families in the community. What is not clear is whether, as a result, the burden borne by families is significant and problematic and whether psychological distress among family members is an important consequence. The influence of the difficulties and problems that are created by the presence, behavior and symptomatology of the patients at home upon the well-being of the family should be investigated. Moreover, it is also necessary that the concept of objective and subjective burden be more fully developed. The next chapter will review a model that holds promise as being useful in the effort to understand the role and significance of various factors for the psychological well-being of family members of mental patients.

CHAPTER 3

SOCIAL AND PSYCHOLOGICAL CORRELATES OF MENTAL HEALTH: SPECIFYING VARIABLES OF A STUDY MODEL*

There is a large volume of literature available on the social and psychological correlates of mental health, and a variety of different ways of reviewing the subject. This review will be organized around the "stress process" model (See Kaplan, 1983 and Pearlin et al., 1981 for reviews). Specification of variables relevant to mental health in general are reviewd within four categories: Demographic variables, stressors, psychological factors and social support.

3.1. Social and Demographic Variables: Basic Epidemiological Findings

Much of the research in psychiatric epidemiology focuses on the study of the distribution of illnesses according to various social and demographic characteristics of the population. Such studies help to provide evidence on the risk factors for illnesses. For example, there is a substantial amount of evidence that psychiatric disorders are more prevalent among those in the lower class (e.g., Dohrenwend and Dohrenwend, 1969; Dohrenwend et al., 1980; Fried, 1975; Kessler and Cleary, 1980; Kohn, 1968;

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*. Much of this chapter is taken from my previous work (Turner and Noh, 1982, 1983; Turner, Noh and Levin, 1984)

Myers et al., 1974; Roman and Trice, 1967; Srole et al., 1962); among women (e.g.,Dohrenwend et al., 1980; Kessler and Essex, 1981; Kessler and McRae, 1982); and among those who are currently unmarried (e.g., Bachrach, 1975; Gove, 1972).

While these research findings have provided some information concerning social risk factors, it is not clear how these factors elevate the risk of mental illness. Therefore, other studies have tried to explain the mechanisms whereby they affect mental health. Variations in stress may be one way of explaining these relationships.

3.2. Stressors: Stressful Life Events and Circumstances

A popular hypothesis is that the members of disadvantaged social groups experience more stressful life circumstances. The most common operational definition of stressful life experience in epidemiological research has been the stressful life event scale. Pioneered by Holmes and Rahe and their associates (Holmes and Rahe, 1967; Masuda and Holmes, 1967; Rahe and Arthur, 1978; Rahe et al., 1964; Rahe et al., 1971), a large number of studies in the last two decades have been published addressing the relationships between life events and illness. They consistently reported moderate but significant associations between the number of life events experienced and the occurrence of psychological and physical illnesses.

Although some criticisms have been raised regarding the etiological role of life events (Brown, 1974; Dohrenwend, 1974; Mueller et al., 1977; Rabkin and Struening, 1976), the link between stressful life events and health outcomes is generally accepted as real and reliable (Dohrenwend and Dohrenwend, 1981; Tausig, 1982). However, there is an important concern about this life events/illness relationship. The relationship is in general, weak or moderate at best and explains less than 10% of the variation in the occurrence of illness (Rabkin and Struening, 1976; Tausig, 1982). It has been claimed that despite the consistency of the observed association, the index of stressful life events is "almost never a sufficient explanation for the onset of illness" (Rabkin and Struening, 1976:1018). Researchers have concluded that there is some residual variation in rates of mental illness across socio-deomographic groups that cannot be accounted for by the distribution of life events alone. This suggests, as Kohn (1972:299) has noted regarding the class/illness relationship, that "there must be important class differences in how effectively people deal with stress".

In the past few years, several researchers have focused on the hypothesis that some individuals are more vulnerable or responsive to life events, and that vulnerability is associated with the individual's location in the social structure as well as his/her demographic characteristics (i.e., social class, marital status, sex, etc.). According to this view, it is not only the life event itself that is crucial, "but the kind of soil on which it falls" (Paykel, 1978:148). In her review of the literature, Thoits (1982) found four major works that tested this hypothesis (Kessler, 1979; Kessler and Cleary, 1980; Kessler and Essex, 1982; Turner and Noh, 1983). She summarized these studies by noting that the association between social groups and illness may be partially explained, by differential responsiveness to the same life events:

> ...not only may life stresses be differentially distributed among social groups, but [that] the psychological and social resources to cope with these stresses may be differentially distributed as well. The clear implication is that disadvantaged groups use inefficacious coping responses and/or possess fewer social supports in dealing with the life stresses... (Thoits, 1982:5-6).

Thus, a logical research question is: "what are some of the more crucial personality and situational variables that may interact and could explain why individuals react to the same stress situations differentially?" (Chan, 1977:91).

3.3. Stressors: Chronic Strain

One possible explanation of the differential responsiveness of individuals to life events is that those who are living amidst on-going life difficulties are more vulnerable to discrete life events. Pearlin et al. (1981: 339) suggested that "events do not necessarily impact upon people directly but may, instead, exert their effects through a wider context of life strains". As reported by Brown and Harris (1978), in many instances trivial life events precipitated distress by adversely altering the meaning of chronic or persistent life difficulties. In this sense, the occurrence of life events functioned as a provoking factor while life strains were a predisposing factor. Pearlin and others (Pearlin and Liberman, 1979; Pearlin et al., 1981) also suggested that "life events may create new strains or intensify pre-existing strains and it is these new or intensified strains, in turn, that eventuate in distress" (Pearlin et al., 1981:339). According to this viewpoint, life strain can have a direct impact upon mental health, while life events may act only indirectly.

In any event, some individuals or social groups (i.e., lower class, females, and the unmarried) may have more on-going life difficulites than other groups, and this elevated level of life strain may be partially responsible for their greater vulnerability to life events. In a study of family members of psychiatric patients, the effects of life strain may be particularly salient, as these family members experience fairly persistent and severe burdens.

While life strain may increase vulnerability to life events, psychological well-being may be influenced by other personal and social factors that could alter the effects of life events and life strains. This review focuses upon two mediating factors, mastery and social support. The concept of mastery is defined and discussed within a broad framework of personal characteristics that may be important factors in the stress process.

3.4. Mastery: Psychological Factors

The term mastery refers to the extent to which one sees life as being under one's personal control as opposed to being in the hands of fate. As such, the concept is similiar to Rotter's (1966) locus of control. Caplan (1981:413) referred to mastery as behavior that "mobilizes the individual's internal and external resources and develops new capabilities in him that lead to his changing his environment or his relation to it, so that he reduces the threat or finds alternate sources of satisfaction for what is lost". There is some evidence indicating that mastery is significantly associated with psychological distress among persons experiencing life strains (Pearlin and Schooler, 1978; Pearlin et al., 1981; Turner and Noh, 1983).

Much of the research into factors that mediate or buffer stress has originated from the diverse disciplines and subdisciplines of social science and psychiatry (Dohrenwend and Dohrenwend, 1981). Thus, psychological buffering factors refer to a variety of psychological and behavioral characteristics of individuals such as defense mechanisms, coping strategies, efficacy, sense of control, social competence, etc. However, despite the variation in terminology these concepts refer to similar attitudes that are presumed to be relevant to differential responsiveness to life events. As Dohrenwend and Dohrenwend (1981) pointed out, the central theme of these concepts is the individual's orientation towards a "normative expectancy" with respect to the interaction between external stress and the internal ability to cope with its consequences.

Psychological factors refer to "the personality characteristics that people draw upon to help them withstand threats posed by events and objects in their environment" (Pearlin and Schooler, 1978:5). For example, Kohn (1972) convincingly argued that lower class members tended to show higher rates of mental disorders and had a heightened vulnerability to socially-induced stress. This occurred because their concepts of the external world and of themselves served to define their stance toward reality --" a fatalistic belief that one is at the mercy of forces beyond one's control, often one's understanding" (p.300).

While Kohn's concept cannot be reduced to, or adequately captured by, "mastery" or "locus of control", these concepts reflect, to some extent, the individual's orientation toward social reality that Kohn has delineated.

The dimension of mastery or personal control has been incorporated in the concept of social competence. Smith

(1968:281) mustered divergent evidence for a provisional view of the competent self:

> The self is perceived as causally important as effective in the world...as likely to be able to bring about desired effects and as accepting responsibility when effects do not correspond to desire...Distinctive attitudes toward the world are linked with these attitudes toward the self as the opposite side of the same coin. Coordinated with the feeling of efficacy is an attitude of hope--the world is the sort of place in which, given appropriate efforts, I can expect good outcomes.

While these concepts may not be identical, their significance for coping and social effectiveness to withstand threatening events is strikingly similar. These concepts resemble other significant ideas within the stress response literature, such as the "giving-up" syndrome (Sweeney et al., 1970) and "learned helplessness" (Seligman, 1975). In a recent review of a wide range of relevant literature, Dohrenwend and Dohrenwend (1981:14-16) commented on the various psychological factors that have been suggested to be influential with respect to one's responsiveness, or vulnerability, to life events.

> One possibility, then, is that researchers coming from varied theoretical and empirical grounds may be converging on a central conception of factors in the individual that are related to stress induced illness. The person who exhibits what Friedman and Roseman called the Type A behavior pattern may, when observed in the Rochester group's frame of reference, be seen as responding to loss with helplessness and, when examined from a social

> learning perspective, be found to have an external locus of expectancy. Finally, his cognitive style may be to repress rather than to be sensitive to threatening stimuli and events. To date, however, these constructs concerning modes of stress-related responses have been developed largely by separate disciplines so that their interrelationships have not been examined (pp. 15-16).

In this study, psychological factors are represented by a personal sense of mastery. As stated earlier, mastery may not capture all of the psychological components that could influence an individual's response to stress. However, mastery does adequately reflect an important portion of an individuals psychological adaptation and response to envornimental stressors.

It can be reasonably expected that individuals who are residing with a psychiatrically disturbed family member are likely to confront difficulties that are unresponsive to conventional problem solving efforts. Retaining a sense of mastery or locus of control may be particularly problematic for these individuals.

3.5. Social Support

Since the well known presentations of Cassel (1974, 1976) and Caplan (1974), the stress-moderating role of social support has received considerable attention. The presumed relevance of the social support is based upon the assumption that an individual's relationship with his/her social environment has an important influence upon his/her responsiveness to life stress. It was Cassel's admonition that "we should no longer treat psychosocial processes as unidimensional, stressors or non-stressors, but rather as two dimensional; one category being stressors, and the other being protective or beneficial" (Cassel, 1976:12). This protective or beneficial category of social/environmental influence comprises social support.

Turner (1983:106) summarized the underlying premises or assumptions of current social support theory as follows: "1) Social factors must function to enhance [as stressors] or lower [as protectors] susceptability to all diseases and disorders generally; 2) the continuity and generality of observed connections between social factors and health suggests the likelihood that the influencial mechanisms involved must also be quite general; and 3) it is reasonable to propose that social support may represent one such general and influential [protective or beneficial] factor."

For many years social relations and related concepts have been central to sociological and social psychological analyses that have been concerned with the understanding of human functioning. Concepts such as social integration, social bonds and contact, social isolation and marginality, social network, and primary and secondary social relations were used to understand the interconnections between psychosocial processes and individual well-being (Turner, 1983). Thus, while the view that social connections, supportive social network and social integration are crucial to an individual's physical health, mental health, and functioning seems to have a long history of research, what is currently investigated is evidence to support the theory that social support may be an effective and important buffering or moderating factor in life stress (Gottlieb, 1981).

Today, researchers in the field define social support as being separate from social networks, and view it as the individual's cognitive or emotional perception of being cared for, loved, and helped by other members of society. The social network and social integration perspectives are connected to social support by the fact that those who are socially integrated and have a more helpful network tend to have, on average, a greater sense of social support (House, 1981; Turner, 1983). Thus, the review of the association between support and health should be more collective in terms of the measures of social support used in various studies.

The widely cited work of Berkman and Syme (1979) examined the relationship between social support and mortality among human subjects. Social support, addressed in terms of integration with various social institutions (i.e., family, friendship, churches, and other formal and informal social organizations), was significantly associated with the mortality rate over a period of nine years. This prospective study demonstrated that the observed relationship remained significant even when the effects of age and sex were controlled.

Recently, another study of mortality confirmed the findings reported by Berkman and Syme. In a follow-up study, Blazer (1982) focused upon the associations between three measures of social support and mortality. Social support was measured in terms of the frequency of contacts with members of the social network, the extent of attachment available to the subject, and one's subjective perception of being supported. Level of these support indicators were obtained at the initial stage of the study from a sample of people age 65 and over. The mortality rates were obtained through the following 30 month period. Mortality was strongly associated with each measure of social support, with the subjective perception of social support being the most strongly correlated.

The wide range of possible confounding factors controlled for in the data analysis included age, sex, race, socio-economic status, cigarette smoking, cognitive functionings and emotional well-being (i.e., depressive symptoms), as well as the extent of recent experiences with stressful life events. Taking the effects of all the confounding variables into account, when social support was assessed by frequency of contact or extent of attachment the relative risk of period mortality of the subjects with a lower level of social support was about 2.0. When subjective perception was used for social support, the relative risk was increased to 3.4.

There is now a substantial and still growing volume of evidence suggesting that social support may be relevant to depression. Many researchers (Brown and Harris 1978; Lowenthal and Haven, 1968; Miller and Ingham, 1976) have reported that the level of social support directly influences depression. Others have reported that while social support is directly linked to a lower level of depression, the effect of support reduces the influence of life stress on the level of depression (Aneshensel and Frerichs, 1982; Bell, 1982; Husaini et al., 1982). However, Pearlin et al. (1981) found only stress-moderating or buffering effects of social support, whereas William et al. (1981) found a direct main effect. Some researchers have reported both direct and indirect associations of social support with general mental health or psychological distress (e.g., Caplan, 1974; Cobb, 1976; De Araujo et al., 1973; Henderson et al., 1981; Turner, 1981; Turner and Noh, 1983).

Turner (1983:142) has summarized the available evidence on the nature of social support effects as follows:

> ...it is not presently possible to resolve the direct versus buffering effects question with confidence. However, the collective available evidence points to the appropriateness of three assumptions or working hypotheses: 1) that social support tends to matter for psychological well-being independent of stress level, 2)

> that support tends to matter more where the stressor level is relatively high, 3) that the extent to which 1 and 2 are true varies across sub-groups of the population defined by class level and, probably, other variables.

As will be illustrated in the next chapter, the present study examines both the direct relationship of social support to mental health and its buffering role in reducing the mental health consequences of stressful life events and family burden.

It should be noted that Turner and Noh (1983) found that the effects of social support and mastery (operationally defined as personal control) were independent from each other and that the two variables combined explained an important part of psychological distress.

CHAPTER 4

PRESENTATION OF A STUDY MODEL AND RESEARCH QUESTIONS

The previous chapters have indicated that: 1) little is known about the mental health of family members of psychiatric patients; 2) the available research on family burden has been basically descriptive and the association between family burden and the mental health of family members is unknown; 3) family burden seems to be best understood when classified into objective and subjective burden; and 4) there are some factors that may influence the extent to which objective burden is experienced as a strain by family members; these factors may also influence the level of well-being of family members. In the preceeding chapter, a stress process model was briefly reviewed. This model provides a basis for the formulation of relevant hypotheses and will, in this chapter, be applied to a consideration of the relevance of family burden for the mental health of family members of psychiatric patients.

4.1. Study Model

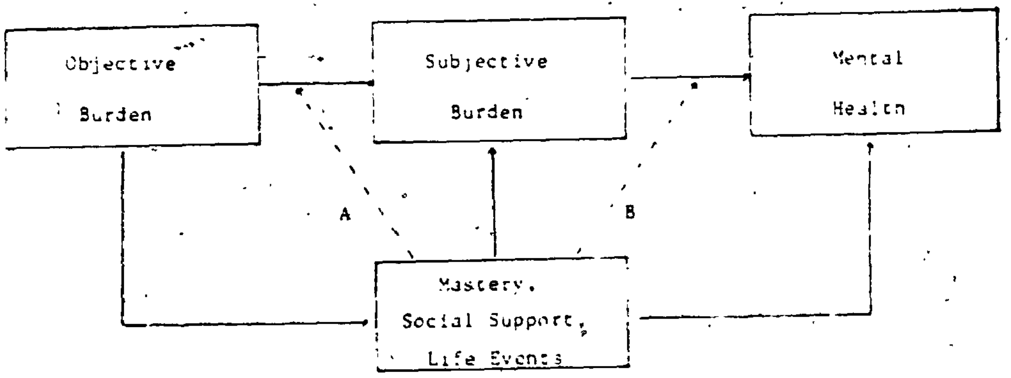
For this study, objective burden is defined as circumstances reported by the family members of psychiatric patients that are presumed to be potentially stressful. Subjective burden is understood as being a major indicator of situational strain within the family, originating, at least to some extent from objective burden. Therefore, based upon the stress process perspective, it can be argued that the presence of objective burden may influence the mental health of family members by increasing or intensifying the level of subjective burden. For example, the inability of the patient to perform his/her core role (e.g., employment or household tasks) may generate new strains or intensify pre-existing strains in financial and other areas of family life, and "these new or intensified strains, may in turn, result in distress" (Pearlin et al., 1981).

What then, accounts for the discrepancies between the levels of objective and subjective burden that have been documented in the literature? Three variables, mastery, social support and life events have been conceptualized as being mediating factors. These factors, along with demographic characteristics and the nature of the patient's illness (diagnosis), may substantially influence the interrelationships between objective burden and subjective burden. In addition, it is hypothesized that the two mediating factors of social support and mastery, buffer the impact of family burden on psychological distress.

The model proposed for this study is similar to the model shown in Figure 1. From the stress process literature, objective family burden represents difficulties and disruptions of family life that are generated by the disturbed member of the family. It is hypothesized that the level of objective burden increases the level of subjective

Figure 4.1

Schematic Illustration of Study Model



burden. This increased subjective burden in turn, results in psychological disturbance among family members. The study model also presents assumptions regarding the role of other social and psychological factors. It is hypothesized that mastery, social support and life events are relevant to mental health and family burden, and also alter the relationships between mental health and objective and subjective burden. The modifying effects are shown with broken lines. Line A predicts that individuals with higher levels of mastery and social support and lower levels of experienced life events will suffer less from objective burden. In other words, those who have higher levels of these personal resources and lower levels of events will be less vulnerable to the effects of stressful difficulties arising from the patients' presence at home. Hence, the relationship between objective and subjective burden will be significantly attenuated for those experiencing higher levels of mastery and social support and for those with fewer experiences with life events. With the same reasoning, the association between subjective burden and mental health should vary according to the levels of mastery, social support and life events. This second buffering hypothesis is shown by Line B in Figure 1.

It should be noted that the present study cannot support causal interpretations. A model similar to the one shown in Figure 4.1 could be presented with all of the arrows reversed to the opposite direction and the model would still be theoretically correct. While, the problem of causality is one of the most difficult problems in social sciences and social psychiatric epidemiology, such reversed alternative models have been frequently used by investigators. In some ways, the choice of model presentation merely reflects the focus of the present study. It has been argued that the well-being of the family members has been frequently ignored in previous research, and that there are a number of important issues which support research endeavours focusing on the family's well-being. Nevertheless, the primary goal of this study was to evaluate the association between family burden and mental distress of the family members, and the evaluation of association certainly can be assessed from either perspective. The model presented above should be taken as simply a conceptual guide that provides a theoretical basis for specific research questions.. The research questions, therefore, address associations between variables without assuming causal priorities among the variables.

4.2. Research Questions

In Chapter 1, the research objectives were divided into three categories: 1) the examination of family burden and its correlates; 2) the examination of the relationship between family burden and the psychological distress of family members; and 3) the identification of the social and psychological factors that mediate and/or moderate the relationship between family burden and distress. The specific research questions are organized according to these objectives.

The literature review and the study model have suggested a number of specific research questions that are related to the general objectives of this thesis. These questions are:

1) To what extent do family members of discharged psychiatric patients experience objective and subjective burden?
2) What are the relationships between objective/subjective burden and the demographic characteritics of the patients and their families?
3) What is the relationship between objective and subjective burden? Are these relationships independent of demographic characteristics and ofsocial and psychological factors such as mastery, social support and stressful life events?
4) What are the relationships between the mental health of family members of discharged psychiatric patients and objective/subjective burden? Are these relationships independent of the demographic characteristics of the patients and their families? Also, are these relationships affected by social and psychological factors?

CHAPTER 5

METHOD

5.1. Data

The data for this study were drawn from a larger study of "The Mentally Ill in the Community" conducted by the Health Care Research Unit of The University of Western Ontario, London, Ontario, Canada. The sampling frame consisted of all psychiatric patients (diagnosed as functionally psychotic) currently residing in the community who had been discharged from hospitals in London and St. Thomas, Ontario. The following sampling criteria were used:

a) Patients discharged between January 1, 1976, and December 31, 1980, from London or St. Thomas Psychiatric Hospitals, or from the psychiatric wards of the three general hospitals in London, who had been diagnosed as functionally psychotic and who were between 18 and 65 years of age at the time of discharge.

b) Specifically, the sample was composed of patients whose hospital records indicated a diagnosis of Schizophrenia (ICD-8*-code 295.0 - 295.99),

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*International Classification of Disease (Eighth Revision).

Affective Psychosis (296.0 - 296.9), Paranoid State (297.0) or other psychoses not attributed to physical conditions (298 - 299). However, when a secondary diagnosis indicated evidence of brain trauma, organic brain disease, drug abuse, or mental deficiency, they were not included in the sampling frame.

c) Those who were released to, and were residing within the catchment area of the Thames Valley District Health Council, or within fifty miles of London.

Among the 705 eligible patients, 523 (74%) completed the interview. Of those interviewed, 314 were living with significant others (spouse or parents) who could provide detailed and reliable information on the patients and their households. The number of interviews completed with significant others or, as we have been using the term, family members, was 211 (67%). A detailed description of the data gathering procedure is provided in Appendix A.

5.1.1. Response Rate and the Implictions of Lost Cases. Although a loss rate of 33% may not be surprising in this type of study, it raises questions that cannot be ignored. A careful analysis must be conducted in order to determine whether there are any serious biases associated with this loss rate.

As there is no information available on the family members who were lost to the interview, the patients whose family members were interviewed were compared to patients whose family members refused to participate in the study. No differences were found between the two patient groups in terms of age, family income, employment status, education, rural/urban residence, the degree of psychopathology or diagnosis. However, those patients whose family members were interviewed appeared to have spent a greater proportion of the last five years in the hospital and to have beenhospitalized more often.

This suggests that families of chronic patients may have been over-represented in the study. An examination of this possibility revealed a clear trend of higher response rates with increasing chronicity. For families with patients who had spent less than 1% of the last five years (or less than 2.5 weeks) in the hospital, the response rate was 47% (21 out of 45 patients). The rate increased to 70% (178 out of 255 patients) when the patients had been hospitalized longer than 2.5 weeks in the last five years. Of these 225 patients, 120 patients were hospitalized more than three times, and 87 (73%) of their family members were interviewed. When only those who were hospitalized more than 5 times were considered, the response rate rose to 81%. It is apparent that the present sample over-represents subjects who were living with ex-mental patients who had been hospitalized a larger number of times, or for longer periods of time.

Thus, one implication is that the generalization of this study's findings may be largely restricted to families of more chronic patients. However, to contribute toward understanding the extent of, and factors associated with, family burden and psychological distress among families whose ill members have been frequently hospitalized is clearly a worthwhile goal.

5.2. Measurement

5.2.1. Mental Health of Significant Others.

In order to assess the mental health of the significant others, the study employed the General Health Questionnaire (GHQ) developed by Goldberg (1972). The version of the GHQ used in this study was the 30 item set recommended by Goldberg (1972). This instrument is shown in Question 34 (Appendix A). Each of the 30 items refer to some sort of medical complaint (e.g., sleeplessness). For each item of the index, the respondent was asked to rate the frequency or amount of complaint experienced over the past few weeks on a four-point scale involving the following response categories: "much less than usual", "same as usual", "more than usual" or "much more than usual".

The GHQ was originally developed as a screening instrument for psychiatric cases in general medical practice. Its clinical validity was established in samples of patients from general practice offices using a psychiatric interview as the external criterion (Goldberg et al., 1976). The results from the validity study show that the 30-item version of the instrument is able to detect clinicaly relevant non-psychotic and psychotic cases. The sensitivity and specificity figures indicate that this instrument more accurately detects non-psychotic cases than other major screening indices such as the Johns Hopkins' Symptom Check List (SCL-90) or Langer's symptomatology scale (Goldberg et al., 1976; Henderson et al., 1981). Its cross-cultural validity was assessed in Australia by Henderson et al. (1981) and Tennant (1977), and in the United States by Goldberg (1972). Their results suggested that the instrument's screening power is highly stable, indicating the applicability of the GHQ to most western cultures. The frequency distributions and results of factor analysis are reported in Chapter 7 (See Section 7.1).

5.2.2. Subjective Family Burden. As previously discussed, subjective burden is defined as the experience by family members of difficulties or problems associated with the ill member of the family. A shortened ten-item version of "the patient as a problem" index (Pasamanick et al., 1967) was used to assess the extent to which family members felt that the presence, behavior, and dependency of the patient on other people, caused difficulties, problems, anxieties and strain for the family. As Question 55 in Appendix A illustrates, the respondents were asked to indicate how often they experienced difficulties with the patient at home, e.g., "Has (the patient's) safety been a source of worry?" or "Has (the patient) caused anxiety by speaking or behaving oddly, or expressing unusual or unreasonable ideas?" However, the item "Has (the patient) caused any trouble with your neighbours?" failed to show any variance in this study (no one experienced any difficulties), and consequently was deleted. Respondents were asked to rate how often they experienced difficulties on a three-point scale ranging from "often" to "never". The nine-item scale showed an internal consistancy (reliability) coefficient of .86 (Cronbach's alpha). The basic frequency distributions are reported in Chapter 6 (see Tables 6.4 and 6.5).

5.2.3. Objective Family Burden. Objective family burden was measured by the Personal Adjustment and Role Skill (PARS) Scale (Ellsworth, 1975 a,b). This scale assesses the patients disruptive effect on family life in eight basic dimensions.

1. Personal Involvement; the patient's consideration for, and interest in, the family members.
2. Confusion; loses track of time or forgets important things in daily life.
3. Anxiety/Agitation/Depression; emotional disturbance as expressed by the patient's behavior such as; problems with sleeping, complaints about people, feelings of hopelessness, upset, etc.
4. Alcohol Abuse; the patient's inability to control his/her drinking.
5. Employment; the patient's inability to find and maintain employment and desire and satisfaction with work.

6. Outside of Home Activity; the extent to which the patient attends and participates in social and recreational activities outside of the home.

7. Household Tasks; the patient's inability to maintain his/her responsibilities in performing household chores.

8. Parenting Role; the extent to which the patient shows an adequate adjustment with children.

A total of 57 items of the PARS scale (see questions 56, 57 and 58 in Appendix A) were factor analyzed. Fourteen of these items failed to load on any factors. Thus, a further analysis was conducted dropping these fourteen items. The resulting final factor structure is reported in Table 5.1. It should be noted that this analysis revealed nine factors, instead of the eight dimensions reported by the instrument's authors. This resulted because the dimension "Household Tasks" formed two factors. The first of the two factors referred to household chores and the second factor was concerned with the patient's ability to manage money adequately. In Table 5.1, the additional factor is called "managing money".

Although these nine dimensions clearly measured difficulties in the family imposed by the patient, some dimensions appeared to reflect subjective experiences rather than objective circumstances. Because the contents of the Interpersonal Involvement, Confusion, and Anxiety/Agitation/Depression dimensions appeared to be confounded with subjective burden as defined in this study, these dimensions

TABLE 5.1

PARS ITEMS AND DIMENSIONS DERIVED FROM FACTOR ANALYSIS

DIMENSIONS	ITEMS
INTERPERSONAL AFFECTION (Close Relations)	- Made you feel wanted and needed?
	- Shown affection toward you?
	- Shown interest in what you say?
	- Shown consideration for you?
	- Made it clear what he/she expects of you?
CONFUSION	- Been able to "stay with" tasks he/she starts without becoming preocuppied or lost in thought?
	- Lost track of time?
	- Been in a daze, bewildered?
	- Seemed off in a world by himself/herself?
	- Moved very slowly?
ANXIETY/AGITATION/ DEPRESSION	- Been upset over small things?
	- Said that things looked discouraging or hopeless?
	- Lost his/her temper?
	- Been nervous?
	- Talked about being afraid of people or things?
	- Been bothered by feelings of guilt?
MANAGING MONEY	- Bought things you cannot afford?
	- Spent his/her money wisely?
ALCOHOL ABUSE	- Been drunk or intoxicated?
	- Been drinking to excess?
	- Had a drinking problem that upset his/her relationship with family members?

TABLE 5.1 (continued)

PARS ITEMS AND DIMENSIONS DERIVED FROM FACTOR ANALYSIS

DIMENSIONS	ITEMS
OUTSIDE HOME ACTIVITY	- Attended the activities of organizations or social clubs? - Participated in the activities of organizations or social clubs? - Had few interests outside the home or a wide variety of outside interests? - Taken part in recreational activities outside the home (such as movies, dances, bowling, sports, etc.)?
HOUSEHOLD TASKS (House Activity)	- Prepared the evening meal for members of the household? - Prepared the breakfast for members of the household? - Did the dusting, sweeping, and household cleaning? - Did the laundry, ironing, and mending for members of the household? - Did the grocery shopping for the household? - Helped with the chores around the house?
CHILD RELATIONS	- Consistent approach to children? - Kept promises? - Shown affection? - Disciplined when necesssary? - Failed to discipline? - Children showed respect? - Spent time with them?
EMPLOYMENT	- Amount earned? - Amount earned adequate? - Look forward to going to work? - Want to change job? - Complained about job? - Looked for and obtained a job?

were excluded from the assessment of both subjective and objective burden.

Factor analyses were conducted in order to assess the extent to which the remaining dimensions of the PARS scale were confounded with measures of subjective burden. Because Employment and Effects on Children were relevant to only those households where patients were expected to have employment and where children were present, respectively, the measures of these dimensions were analysed using a reduced number of cases.

The data shown in Table 5.2A are from a factor analysis of subjective burden items and items composing the four dimensions of objective burden (Managing Money, Household Tasks, Outside of Home Activity and Alcohol Abuse). The factor loadings shown in the table are the results of a five factor solution, which was determined by the number of factors with eigen values of 1.0 or greater. The implication of the results is clear: There is very little operational confounding between these four dimensions of PARS scale and the subjective burden measure.

The same method was used to examine the distinctions between subjective burden and the "employment" dimension of objective burden. There were only 102 subjects who felt that employment was an important patient role. The results of this analysis are reported in Table 5.2B. The data demonstrated that the indicators used to assess subjective

TABLE 5.2

CONFORMATORY FACTOR ANALYSIS*
SUBJECTIVE BURDEN AND OBJECTIVE BURDEN

A: Scales included in the analysis: Subjective Burden, Managing Household Tasks, Outside of Home Activity, Alcohol Abuse[1] (N=200)

VARIABLES	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
SUBJECTIVE BURDEN (CHRONIC STRAIN)		.54			
		.74			
		.73			.36
		.54			
		.60			
		.67			
		.67			
		.75			
		.63			.32
MANAGING MONEY					.58
	.34				.69
HOUSEHOLD TASKS	.86				
	.91				
	.74				
	.85				
	.71				
	.75				
OUTSIDE OF HOME ACTIVITY			.85		
			.89		
			.84		
			.68		
ALCOHOL ABUSE				.84	
				.98	
				.84	

B: Scales included, Subjective burden, Employment (N=102)

VARIABLES	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
SUBJECTIVE BURDEN (CHRONIC STRAIN)		.60			
		.69			
		.76			
		.50			
		.61			
		.65			
		.68			
		.76			
EMPLOYMENT	.73				
	.75				
	.77				
	.95				
	.92				
	.89				

C: Scales included, Subjective burden, Effect on Children3[3]

VARIABLES	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
SUBJECTIVE BURDEN (CHRONIC STRAIN)		.63			
		.57			
		.78			
		.64			
	.38	.55			
		.65			
	.42	.49			
	.40	.62			
	.57	.44			
EFFECTS OF CHILDREN	.65				
	.71				
	.70				
	.82				
	.39	.39			
	.74				

*Orthogonal solution using varimax rotation; Factor loadings greater than .30 only.

burden were clearly distinguished from the indicators of objective burden.

Finally, there were 101 respondents who felt the parenting role of the patient was relevant. As shown in Table 5.2C a number of subjective burden indicat[illegible]s were strongly associated with the factor formed by items from the Parenting Role dimension of objective burden. It appears that the family members' response to the patients' effects on children arose from their emotional fears and worries. Consequently, the "Parenting Role" subscale was excluded from consideration, leaving five PARS dimensions that appear to index objective burden and that are not confounded with subjective burden (Employment, Household Tasks, Social Participation, Managing Money and Alcohol Abuse).

Additional items, drawn from elsewhere in the questionnaire, rounded out the proposed index of objective burden. The interviewed family member was asked to indicate whether any family members in the home stopped, started or changed the hours of work and if anyone in the family had to miss school or work to be with, or help the patient in the home (see questions 50 and 51, Appendix A). The procedures used to estimate objective burden in each dimension and the computation of the total score of objective burden are presented in detail in Results I, Chapter 6.

5.2.4. Mastery. The concept of mastery has been referred to as a person's global orientation expressing the degree of personal confidence that an individual has in his/her ability to help themselves and manage the outcomes of stressful circumstances. This concept was measured by employing the mastery scale developed by Pearlin and Schooler (1978). This scale, shown in Question 59 in Appendix A has been found to have an acceptable internal reliability. The internal reliability coefficient for this sample was .85.

5.2.5. Social Support. The index employed here to measure social suppport was based upon Cobb's (1976) concept of social support as comprising information that one is loved, esteemed, and a member of a social network in which others can be counted upon. Kaplan (1977) partially tested the properties of a story-identification scale composed of 16 vignettes. Each set of vignettes present descriptions of three persons (e.g., Jane, Sonia and Vicki) with respect to their relationships with others (see Question 62 Appendix A). The response scale for each vignette ran from 0 (lowest) to 4 (highest) and indicates the level of experienced social support.

The revised scale used in this study consisted of nine vignettes. Two sets were directly taken from Kaplan's original index; five were taken from the original scale with very slight modifications and two were new vignettes constructed by Turner et al. (1983). The first seven vignettes from the Kaplan index have been found to be highly reliable across different sample groups as well as over time (Frankel, 1981; Turner et al., 1983; Turner and Noh, 1982;

1983). The revised nine-item scale has been used in another major study and the internal reliability has been reported as being satisfactory (Turner et al., 1983). The internal reliability coefficient for the present sample was .83[1].

5.2.6. Stressful Life Events. The instrument used in this study was a 21-item expansion of the scale used in the Canada Health Survey. The total scale is shown in Question 61 of Appendix A. The respondents were asked to indicate whether they experienced any stressful events during the six months prior to the interview, and, if an event had occurred, to rate the stress experienced on a three point scale ranging from "very stressful" to "not at all stressful". Some researchers have suggested that the experience of major life events should cover the past year, while others have used only a six month period. The results from recent studies however, seem to indicate that the latter is

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[1] As presented earlier (Section 3.5), recently researchers have distinguished the concept of social support from social network, and there has been an accumulating number of empirical results which suggest that the relevance of social network is limited to the extent to which it is connected to the level of experienced social support (House, 1981; Turner, 1983; Stemp et al., 1983). These findings, are consistent with the social psychological axiom that, the perceived world may not be the real world, perceived reality is psychological reality and what matters for behavior and emotional adjustment (Ausubel, 1958). Given that social support is included in this study as a part of the psychosocial factors that may mediate the relationship between burden and mental health, the inclusion of a social network measure would have been redundant and perhaps would have caused unnecessary complications in interpreting the results.

a reasonable period for the duration of the effects of stressful life events (Murphy and Brown, 1982; Turner and Noh, 1982).

The instrument used in this study has been used in several other research projects at the HCRU and its results appear highly consistent across studies. Also, this shorter list of life events seems to produce results that are highly consistent with those produced in research utilizing the longer, expanded version of Homes and Rahe's scale (Turner and Noh, 1982; 1983).

5.2.7. Characteristics of Family Members. Selected demographic variables were also included in the analyses. They were the sex and age of the respondents (significant others), education and relation to patient (spouse or parent). Of the 211 respondents 51% were male, 77% were spouses and 23% were parents of patients. The mean age of the family members was 48.3 years with a standard deviation of 12.9 years. The educational level of the sample was somewhat lower than the level of the general population, with a median of 10 years of schooling (Turner et al., 1983a).

5.2.8. Characteristics of Patients. The variables that were used to describe the patients' characteristics included diagnosis, the number of previous hospitalizations (for mental illness), community tenure since the last discharge, and severity of psychopathology. Since all of the patients were diagnosed as having a functional psychosis, the variable of diagnosis was dichotomized as schizophrenia and non-schizophrenic diagnoses. There were 93 (49%) schizophrenic patients and 98 (51%) non-schizophrenic patients. The diagnosis was not known for 20 cases. Categorization by diagnosis was determined by the admission diagnosis at the last hospitalization.

The hospital charts also provided the number of previous hospitalizations and the date of the last discharge. The mean of the number of previous (life time) hospitalizations (for mental illnesses only) among 211 patients included in the present study was 4.4 (standard deviation of 4.8. Community tenure was determined by the number of weeks since the last hospital discharge. At the time of the interview, on average, the patients had been living in the community with their families for 27.8 weeks (standard deviation of 19.1 weeks).

Finally, the severity of psychopathology (symptomatology) was assessed by the Brief Symptom Inventory (BSI). This is a 53-item self-report scale, which was completed by patients with assistance of the interview. Detailed information on its validity, reliability, and on scoring methods are provided in the manual (Derogatis and Spencer, 1982), and the actual interview schedule of BSI is attached at the end of Appendix B. The specific score used in this study was the General Severity Index (GSI) recommended by the authors for use when assessing general symptomatology. This score ranged from 0.0 to 4.0, with high scores indicating higher symptomatology. The mean of this sample was .64 and the standard deviation was .57.

5.3. Sample Size and Reliability of Results

Since there was no information about the expected parameters, it was difficult to estimate the required sample size. As noted earlier the present study considers the 211 significant others from whom the present data were obtained. In Appendix B, detailed considerations of sample size and estimations of the statistical powers of various types of statistical methods are addressed. In general, it seems that a sample size of 211 is sufficient for most of the analyses conducted on the total sample and for many of the subgroup analyses. However, it should be mentioned that, in certain circumstances sample size could be a problem with respect to the reliability of the statistical findings. This matter will be considered within the presentation of results.

CHAPTER 6

RESULTS 1: UNDERSTANDING FAMILY BURDEN AND ITS CORRELATES

6.0. Introduction

This chapter is concerned with the three research questions (see Chapter 4). Question one was related to the extent to which family members of discharged psychiatric patients experience objective and subjective burden. In addressing this first question, initial analysis considers each indicator of objective burden. Then, the scores of these indicators will be totalled in order to assess the extent of objective burden as a single measure. Finally, the extent of subjective burden will be examined.

The second research question proposed was to examine the relationships between family burden and the characteristics of the patient and their family members. Descriptions of patient and family characteristics were presented in an earlier chapter (see 5.2.7. and 5.2.8). At this point, these characteristics will be examined in terms of their associations with objective and subjective family burden.

The third research question concerned the relationship between objective and subjective family burden, and the extent to which other social and psychological factors appeared to mediate their association. The expectation is that the psychological factors studied will be associated with both dimensions of family burden and may act as moderating agents to increase or reduce the relationship between objective and subjective burden.

6.1. Objective Burden

In Chapter 5, it was indicated that objective burden can be assessed through an examination of problems associated with the patient's performance of social roles. This study utilized the PARS scale to obtain information on patient's disability in their social interactions with others, in money management, in their performance of household chores, in finding and maintaining employment and in their management of alcohol problems. An additional measure was used to assess objective burden that addressed disruptions to family life, including the frequency with which family members hadto-stop, or obtain employment, or change working hours because of the patient's illness.

The extent of objective burden with respect to employment and to household tasks (chores) are thought to be strongly associated with the sex of the patient. Assuming gender differences in core role expectations, and following Pasamanick et al. (1967), the measure of household tasks was used when the patient was female, and the employment scores were used when the patient was male.

In order to estimate extent of burden, mean scores were computed for each dimension (see Table 5.1 in Chapter 5 for items). These mean scores were then interpreted in accordance with the scheme shown in Figure 6.1. As illustrated in the figure, means of 3.5 or higher were assumed to indicate "severe burden". For such a score to result, almost all negative items must have occurred "usually" or "always" and almost all positive items must have occurred rarely or never. Scores between 2.5 and 3.5 were assumed to indicate "moderate burden", and those scores below 2.5 were considered to represent no experienced burden. The results of applying this interpretation to scores of objective burden (PARS dimensions only) are summarized in Table 6.1.

As shown in Table 6.1, few family members stated that the patient was unable to control him/herself regarding drinking problems; only 2% of the sample reported problems in this area, indicating that alcohol abuse is the least frequent problem. About one-fifth (19%) of respondents said that their patient had difficulties in managing money. However, only 6% reported persistent (usually or always) problems. The female patients' inability to do chores was reported with similar frequencies: 15% reported a moderate level of difficulties and only 7% expressed a severe problem. On the other hand, a substantial number of families had difficulties with the inability of male patients to find and/or maintain employment. The majority of family members reported the employment of the patient as a persistent problem (i.e., usually or always): a total of 38% expressed at least some degree of hardship and of this percentage 31% reported persistent problems. These results on sex-specific

Figure 6.1

Score Scheme for Assessing the Degree of Objective Burden Measured by PARS Scale Dimensions

Nature of items	Average response categories				
Positive items --------	Always	Ususally	Sometimes	Rarely	Never
(Scores)	(1)	(2)	(3)	(4)	(5)
Negative items --------	Never	Rarely	Sometimes	Usually	Always
	No Burden		Moderate Burden	Severe Burden	

TABLE 6.1

PERCENTAGE DISTRIBUTION OF
OBJECTIVE BURDENS ASSESSED FROM PARS SCALE

	DEGREE OF BURDEN EXPERIENCED				
	MODERATE		SEVERE		TOTAL
DIMENSIONS OF BURDEN (PARS)	N	%	N	%	%
Alcohol Abuse	6	3	4	2	5%
Managing Money	26	13	13	6	19%
Household Tasks (Females)	18	15	8	7	22%
Employment (Males)	4	7	18	31	38%
Outside-Home Activity	37	18	113	55	73%

role performance are highly similar to those reported by Pasamanick et al. (1969). An even greater proportion of family members described problems concerning the patients' participation in social activities outside of the home. About 75% of the total sample reported a burden in this area and the majority (55%) were experiencing a severe level of burden.

It can be seen that the majority of reported problems or difficulties were related to patients' difficulties with social interactions outside of the home, either with respect to employment, to social participation or both. Only about 20% of the families regarded the patients role within the family as a problem, and the majority of these burdens were expressed as being moderate. Thus, it appears that the families tended to experience problems more frequently in the broader social contexts (i.e., employment and social participation) than in the household.

The last dimension of objective burden was measured by disruptions to family routine. Table 6.2 indicates that such disruptions occurred only rarely in this population. The most frequently reported experience was that other family members had to change their hours of work because of the ill members. Only 14% of the total sample had experienced one of the three areas of disruption, and only 4% experienced more than one.

The total score of all of the dimensions was used to assess the overall level of objective burden, i.e., alcohol

TABLE 6.2

NUMBERS AND PROPORTIONS OF FAMILIES
WHOSE MEMBERS HAD TO STOP WORKING, CHANGE WORK HOURS,
OR START WORKING DUE TO THE PATIENT

ITEMS	N	%
Family Members Stopped Working	8	4
Family Members Changed Work Hours	21	10
Family Members Started Working	6	3
Experienced None of Above Due to Patient	181	86
Experienced at Least One of the Above Due to Patient	30	14
Experienced Any Two of the Above Due to Patient	9	4

abuse, money management, household tasks (for female patients), employment (for male patients), outside the home activity, and family disruptions.[1] Therefore, the total score of objective burden was calculated as:

Objective Burden = number of moderate burden
+ (number of severe burden X 2).

The distribution of the total objective burden scores is reported in Table 6.3. The distribution shows a mean of 2.166 and standard deviation of 1.725.

There were 38 (18%) respondents who reported that the patients at home "never" or "rarely" caused difficulties for their family. According to the operational definition of objective burden used in this study, this figure represents the proportion of the sample who did not experience any objective burden. Another 17.5% of the respondents scored one. That is, they "sometimes" experienced problems with the patient's inability in one of the six areas that are used for the assessment of objective burden. Therefore, it may be safe to consider them as experiencing only a mild

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[1] Severe and moderate levels of family disruptions were distinguished by the number of disruptions; no burden exists if there were no disruptions reported in three areas; moderate burden exists if the disruption occurred in only one area; severe burden if the disruption occurred in more than two areas. The mean scores of the items that were successfully measured were used as the scores of missing equivalent items, in order to obtain the maximum number of cases in the analysis.

TABLE 6.3

DISTRIBUTION OF OBJECTIVE BURDEN

SCORES OF OBJECTIVE BURDEN	N	%
0	38	18.0
1	37	17.5
2	66	31.3
3	32	15.2
4	16	7.6
5	9	4.3
6	11	5.2
7	1	.5
10	1	.5
TOTAL	211	100.0

$\overline{X} = 2.166$ STANDARD DEVIATION = 1.725

burden. It appears that about 35% of the total respondents feel that their ill-members performed their social role activities at relatively satisfying levels. If our operational definition of objective burden is accepted, it could be said that about 35% of the significant others experienced little or no objective burden.

Nearly one-third scored two: that is, more than 30% of the significant others "sometimes" experienced difficulties in two problem areas, or experienced persistent ("usually" or "always") problems in one dimension of objective burden. While this figure represents the modal category, almost one fifth (18.1%) scored four or more. In other words, nearly 20% reported at least two areas of problems with average frequencies of "usually" or "always", or four areas of difficulties occuring "sometimes".

Therefore, according to the scoring scheme and definition used, about 35% seem to be relatively free from objective burden. Nearly one-fifth of family members appear to be suffering from a considerable amount of objective burden.

6.2. Extent of Subjective Burden

Subjective burden refers to the level of ongoing situational strain experienced by family members as a consequence of the patients' behavior. Table 6.4 illustrates the distribution of the nine subjective burden items. Seven of the nine items were experienced "sometimes" or "often" by

TABLE 6.4

DISTRIBUTION OF SUBJECTIVE FAMILY BURDEN INDICATORS

Question Heading: I would like to ask you some questions about the (patients)'s adjustment since his/her release from hospital.

ITEMS	OFTEN N	OFTEN %	SOMETIMES N	SOMETIMES %	COMBINED %
1. Has ________ been any trouble at night (noisy, wandering)?	16	7.0	43	18.7	25.7
2. Has ________'s safety been a source of worry?	16	7.0	48	20.9	27.9
3. Has ________ caused difficulty by being uncooperative?	8	3.5	67	29.1	32.6
4. Has ________ caused [illegible]nxiety about the safety [illegible] others?	4	1.7	24	10.4	12.1
5. Is ________ a strain in relying and depending on people too much?	16	7.0	64	27.8	34.8
6. Has his/her restlessness, noisiness, or talking been annoying to you or others in the household?	9	3.9	49	21.3	25.2
7. Has ________ been a problem because of rude or objectional behavior?	3	1.3	32	13.9	15.2
8. Has ________ caused anxiety by speaking or behaving oddly, or expressing unusual or unreasonable ideas?	6	2.6	52	22.6	25.2
9. How frequently is ________ a burden on his family or household?	11	4.8	47	20.4	25.2

more than 25% of the respondents. The two least frequently reported items were "anxiety about the safety of others" and "rude or objectional behavior".

As illustrated in Table 6.5, although nearly 75% of the respondents occasionally experienced some problems; only 17% experienced those difficulties regularly. The number of items that is needed to represent a significant family burden is questionable. However, conservatively, the experience of three or more of these emotional strain items may be seen as constituting a problematic level of family strain. Using this criterion, exactly one-third (33%) of the families of ex-hospitalized patients fall at or above this level and could be regarded as experiencing a significant burden.

6.3. Family Characteristics, Patient Characteristics and Family Burden

The characteristics of the family informants that were considered included such factors as sex, age, education and relationship with patient (spouse versus parent). Patients' characteristics included diagnosis (schizophrenia versus other diagnoses), number of previous hospitalizations, community tenure (number of months since the last hospital discharge) and self-reported psychopathology (clinical status or symptomatology). Diagnoses, number of hospitalizations, and the length of community tenure were abstracted from hospital records. Psychopathology was estimated from a

TABLE 6.5

DISTRIBUTION OF THE NUMBER OF SUBJECTIVE FAMILY BURDEN ITEMS REPORTED BY SIGNIFICANT OTHERS

NUMBER OF ITEMS	OFTEN		SOMETIMES		AT LEAST SOMETIMES	
	N	%	N	%	N	%
0	191	83.0	95	41.3	59	25.7
1	17	7.4	41	17.8	58	25.2
2	10	4.3	26	11.3	36	15.6
3	3	1.3	12	5.2	15	6.5
4	4	1.7	21	9.1	25	10.8
5	2	.9	12	5.2	14	6.1
6	3	1.3	16	7.0	19	8.3
7	---	---	2	.9	2	.9
8	---	---	2	.9	2	.9

patient interview using a BSI (Brief Symptom Checklist) Score.

The zero-order (Pearson) correlations of these variables with objective and subjective family burden are reported in Table 6.6. The positive correlation of sex indicates that female family members (either wives or mothers of patients) tended to report higher levels of objective burden. The positive correlation for relationship of respondent suggests that patients were seen as being more of a burden by their parents than by their spouses. Alternatively, these data may suggest that patients living with their spouses tend to recover better and function better than patients living with their parents (GAP, 1978:321).

Since the majority of our family informants were spouses, the positive sex correlation is consistent with the Brown et al. (1966) finding that family members perceive male patients as more of a burden than female patients[1]. However, the positive correlation with respect to relationship of respondent is incongruent with the findings of Hoenig and Hamilton (1969) who reported that the spouses of patients reported higher levels of objective burden than did the parents of patients.

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[1] In the present data, significantly higher levels of objective burden were found among families of male patients ($\bar{x}=2.43$) than in the families of female patients ($\bar{x}=1.96$), and the difference was statistically significant ($p<.05$).

TABLE 6.6

CORRELATIONS OF OBJECTIVE AND SUBJECTIVE BURDEN WITH DEMOGRAPHIC CHARACTERISTICS OF FAMILY MEMBERS AND PATIENT CHARACTERISTICS

	Objective Burden	Subjective Burden
Demographic Characteristics		
Sex of Respondent[1]	.16*	.07
Relationship of Respondent[2]	.11*	.10
Age	.05	.03
Education[3]	-.16*	-.02
Patient Characteristics		
Diagnosis[4]	.05	.04
Number of Hospitalizations[5]	.12*	.04
Community Tenure[6]	-.1[illegible]	-.02
Psychopathology (BSI)	.22*	.21*

1. Male = 1 Female = 2
2. 1 if the respondents are spouses of the patients; 2 if respondents are parents.
3. 0 = Less than grade 8; 1 = completed grades 8 to 9; 2 = completed grades 10 to 12; 3 = completed grade 12 or 13; 4 = community college, technical training, or partial university; 5 = university degree or more
4. 1 if schizophrenia
5. Numbers of previous hospitalizations ever.
6. Number of months since last discharge.

*Correlation coefficients are significant at .05 level.

The age of the family member was not associated with the level of objective burden; however, the level of education was negatively related to the level of objective burden. This suggests that those with a high level of education tend to experience less burden. It may as well be true that patients who are living with better educated significant others have a better education, and patients with higher levels of education perform their social roles better than patients with lower levels of education.

As Hoenig and Hamilton (1969) found, there was no difference in the level of objective burden across the diagnostic groups. However, three indicators of the chronicity of the patients' illness -- a greater number of previous hospitalizations, a shorter period of community tenure and a higher level of psychopathology -- were all significantly related to higher levels of objective burden experienced by the family members.

While most of these variables were related to the extent of objective burden, the magnitudes of the associations were generally low. The strongest relationship was found with the level of psychopathology, or clinical status, of the patient. However, the correlation of .22 suggests that less than 5% of the total variance in objective burden could be accounted for by differences in the patients psychiatric status.

The relationships of these variables to subjective burden are reported in the right hand column of Table 6.6.

Only psychapathology was related to the level of subjective burden. The relationship between clinical status (BSI) and subjective burden (r=.21) is nearly as strong as the relationship between clinical status and the level of objective burden (r=.22). Thus, while the clinical status of the patient was associated with level of subjective burden, no other significant relationships were observed with subjective burden.

In order to assess the associations of these variables more stringently, multivariate regression analyses were conducted and the associations of the variables were assessed by accounting for the other variables simultaneously. The results of the regression analyses are reported in Table 6.7. As can be observed in the left hand column of this table, only two variables are now related to objective burden. While the partial correlation (standardized regression coefficient) of psychopathology is somewhat reduced (from r=.22), the partial correlation of age remains at the level of its bivariate relationship. Other variables, which were significantly related at the zero-order level, are no longer related to objective burden. This may suggest that education, age, relationship of family members, number of hospitalizations, and the length of community tenure are spuriously related to objective burden.[1] The total relationship of this additive linear model is .308. Although the

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[1] See Table C.1 for a correlation matrix.

TABLE 6.7

REGRESSIONS OF OBJECTIVE AND SUBJECTIVE FAMILY BURDEN ON CHARACTERISTICS OF FAMILY MEMBERS AND PATIENT CHARACTERISTICS (N=188)

	REGRESSION OF OBJECTIVE BURDEN			REGRESSION OF SUBJECTIVE BURDEN		
	b	s.e.	B	b	s.e.	B
Respondent's Characteristics						
Sex	.60	.26	.18*	-.01	.48	-.00
Age	.001	.01	.01	-.01	.02	-.03
Education	-.13	.09	-.11	.05	.16	.02
Family Relations	-.26	.37	-.06	-.20	.69	-.03
Patient's Characteristics						
Number of Hospitalizations	.02	.03	.07	.01	.05	.02
Community Tenure	-.01	.01	-.11	.01	.01	.05
Psychopathology (BSI)	.50	.22	.17*	1.11	.41	.21*
Diagnosis	.10	.25	.03	.15	.48	.02
Constant	1.51	.65		1.18	1.22	
Multiple R (R^2)	.308	(.095)		.214	(.046)	
F	2.356	(.020)		1.078	(.381)	

Note: See footnote in Table 6.6

multiple association is statistically significant (F=2.356; p=.020), less than 10% of the total variance in objective burden is explained.

The patient's psychopathology was the only factor that was associated with the level of subjective burden, and this association was unaffected by the other variables (partial correlation = simple correlation = .21). The levels of subjective family burden are for the most part independent of the family's and patient's characteristics.

In short, the data presented in Table 6.7 illustrate that subjective burden is largely independent of family and patient characteristics, and the relevance of these factors for objective burden is minimal.

It has been suggested in the literature that the associations of the patient's characteristics with family burden may not be linear. In order to examine the curvilinear relations, the regressions were expanded to include the square terms of some variables. The results are shown in Table 6.8. Although none of the square terms were significant, the analysis shown in the middle column does suggest that there may be a curvilinear relationship between length of community tenure and objective burden. In Figure 6.2, the level of community tenure was broken down into as many categories as the number of cases permitted.[1] The

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[1] The minimum number of cases used for the estimation of mean values was 21 for the lowest level of community tenure (0 to 6 months). The F statistic of oneway analysis of variance was 2.92 (P=.014).

TABLE 6.8

EXAMINATION OF CURVILINEAR RELATIONSHIPS OF MAJOR CHARACTERISTICS OF PATIENT WITH OBJECTIVE BURDEN (N=188)

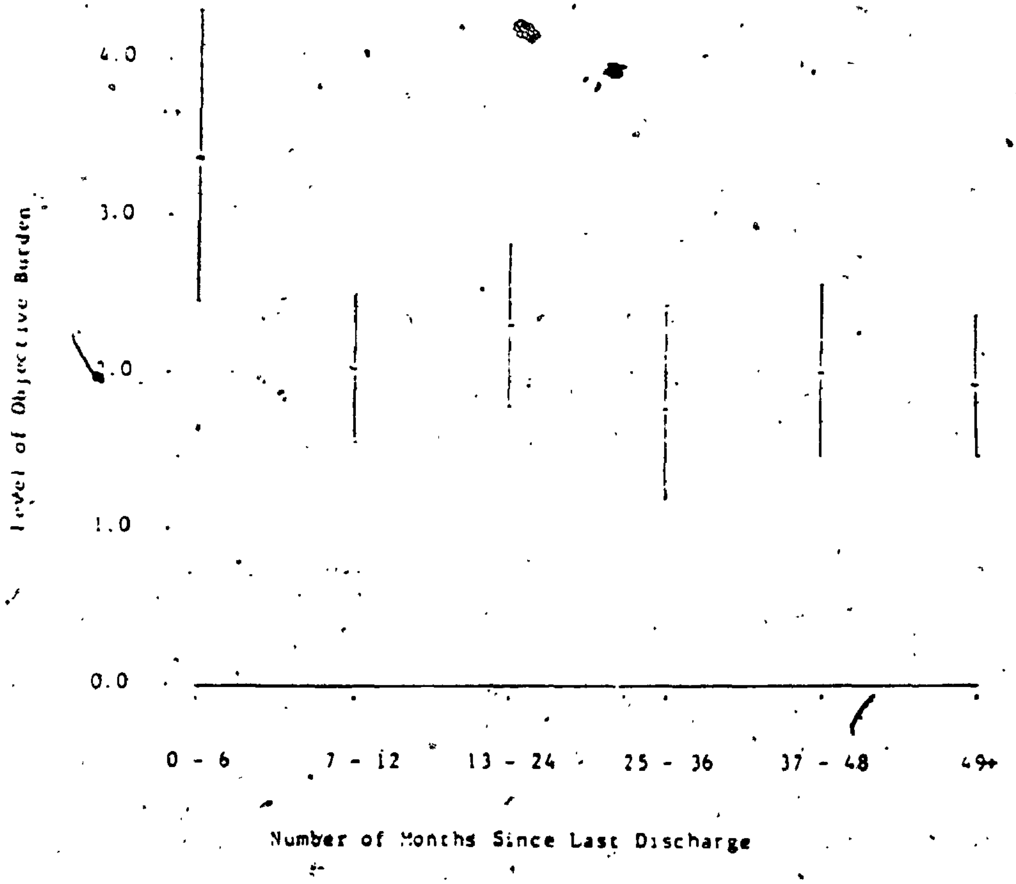
	b	Beta	b	Beta	b	Beta
Number of Hospitaliztions	.03	.09	.03	.07	.02	.07
Community Tenure	-.01	-.11	-.06	-.69*	-.01	-.11
Psychopathology	.50	.17*	.39	.13	1.08	.37
(Number of Hospitalizations)^2	-.0002	-.02				
(Community Tenure)^2			.0008	.59§		
(Psychopathology)^2					-.28	-.21
Multiple R (R^2)	.309	(.095)	.334	(.111)	.316	(.100)
F Statistics (P)	2.085*	(.033)	2.480	(.011)	2.196	(.024)

*$p<.05$
§ $p=.073$

All regression analyses include other variables appeared in Table 6.7 (Sex, Age, Family Relations, Education and Diagnosis).

Figure 6.2

Mean and 95% confidence interval
of Objective Burden by Levels of Community Tenure



reported level of objective burden was higher during the first six months after the patient was discharged from the hospital, and was significantly lower after this period.

The same analytic approach was applied to subjective burden. As shown in Table 6.9, there seems to be some indication of a curvilinear relationship between symptomatology and subjective burden. However, when mean scores were plotted by varying levels of symptomatology, subjective burden tended to show linear variations. (See Figure 6.3)[1].

A detailed investigation of the cyclical or curvilinear associations would require a prospective design and a larger number of subjects. This study is, unfortunately, unable to address such detailed questions.

In summation, only the severity of the patient's psychopathology appears to be significantly related both to the objective and subjective experiences of burden. The sex of the family informant was associated with the level of objective burden; higher levels of objective burden were reported by female (wives or mothers of patients) informants. However, these associations were weak; less than 10% of objective burden and less than 5% of subjective family burden was accounted for by the linear model of the variables). Finally, the findings were inconclusive but suggested that after about a six month period of community

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[1] The minimum number of cases used for the estimation of means was 31 cases. The F Statistic for this analysis of variance was 3.552 (P=.008).

TABLE 6.9

EXAMINATION OF CURVILINEAR RELATIONSHIPS
OF MAJOR CHARACTERISTICS OF PATIENT WITH SUBJECTIVE BURDEN (N=188)

Variables in the Equations	Regression Coefficients					
	b	Beta	b	Beta	b	Beta
Number of Hospitalizations	.07	.11	.01	.02	.01	.02
Community Tenure	.01	.05	-.03	-.20	.01	.05
Psychopathology	1.06	.20*	1.02	.19*	3.10	.58*
(Number of Hospitalizations)^2	-.0002	-.11				
(Community Tenure)^2			.0006	.25		
(Psychopathology)^2					-.95	-.39§
Multiple R (R^2)	.220	(.048)	.221	(.049)	.250	(.063)
F Statistics (P)	1.004	(.439)	1.016	(.429)	1.322	(.228)

Note: All regression analyses include other variables appeared in Table (Sex, Age, Family Relations, Education and Diagnosis).

*P<.05
§P=.073

2

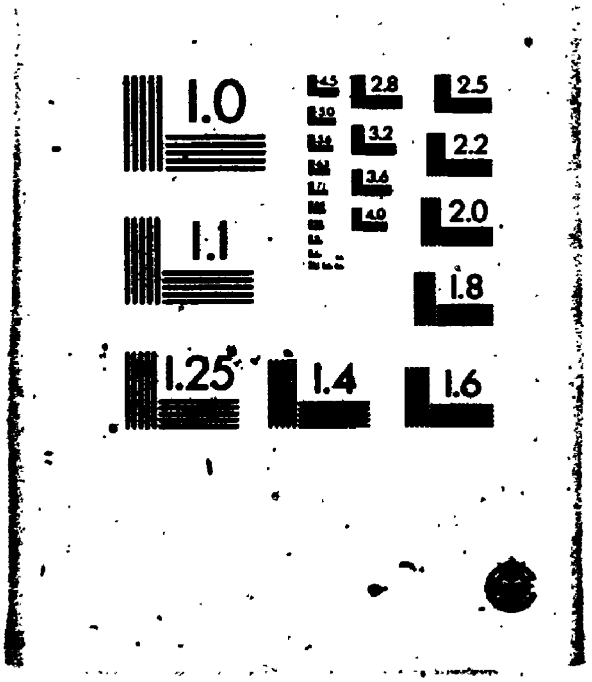
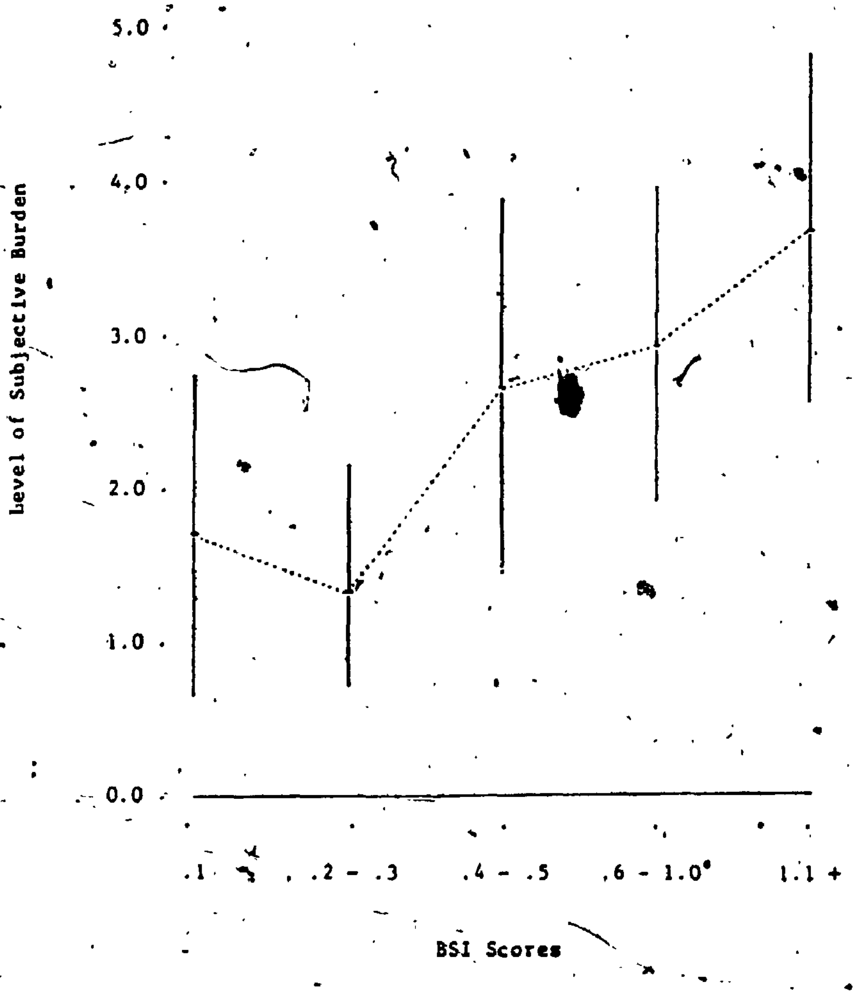


Figure 6.3

Means and 95% Confidence Intervals
of Subjective Burden by the Level of Psychopathology



tenure, the level of objective burden may level off. Although other research has suggested that the level of objective burden is associated with the length of the illness history, present data indicate that the association between the number of hospitalizations and objective burden disappears when it is examined in multivariate analyses.

6.4. The Relationship Between Objective and Subjective Family Burden.

As noted in the literature review, previous research has suggested that level of subjective burden cannot be directly accounted for by level of objective burden (Hoenig and Hamilton, 1969). The present data show a moderate correlation of .44 (P=.001), indicating that less than a 20% of variance is shared by the two variables. Although this result cannot be directly compared to Hoenig and Hamilton's findings, it does seem to confirm their conclusion.

In the following analyses, two questions are addressed: (1) Can the variance of subjective burden be accounted for by some other social and psychological factors? (2) Is the association between objective and subjective burden conditioned by these variables? The roles of mastery, social support, and stressful life events, which are hypothesized to be of relevance, will be examined.

The results of the multivariate regressions (Table 6.10) demonstrate that neither family characteristics nor patient characteristics in any way reduced the relationship

TABLE 6.10

REGRESSION OF SUBJECTIVE BURDEN ON OBJECTIVE BURDEN AND FAMILY AND PATIENT CHARACTERISTICS

	Objective Burden Only (N=211)		Objective Burden and Family Characteristics (N=188)		Objective Burden and Patient Characteristics (N=188)	
	b	Beta	b	Beta	b	Beta
Objective Burden	.83	.45*	.87	.47*	.81	.44*
Sex of Respondent			-.50	-.08		
Education			.14	.07		
Family Relations			.01	.00		
Age			-.003	-.01		
Diagnosis					.08	.01
Number of Hospitalizations					-.01	-.02
Community Tenure					.01	.09
Psychopathology					.62	.12
Constant	.60		1.08		-.16	
Multiple Correlation (R^2)	.451 (.204)		.461 (.213)		.475 (.225)	
F Statistic (P)	47.63	(P=.00)	9.86	(P=.00)	10.58	(P=.00)

1. N=188
*p .05

between objective and subjective burden. These results might have been expected given the earlier findings that were reported in Table 6.7, showing that, except for level of psychopathology, these factors were not associated with subjective burden. However, the significant relationship to psychopathology has now also disappeared.

To determine if the patient or family characteristics influence the relationship between subjective and objective burden, the regression model was expanded to include interaction terms. The only significant interactive association was found to be the number of previous hospitalizations (Table 6.11). The size of the regression coefficient of the interaction term was substantial. Since the Beta coefficients of objective burden and the interaction term were the same, the association of the two levels of family burden could be expected to be zero when the number of previous hospitalizations is one standard deviation below the mean. This association can be expected to be .62 when the number of hospitalizations is increased to one standard deviation above the mean. In other words, families whose patients had been frequently hospitalized experienced more strain from the same level of objective burden than families whose ill members had been hospitalized less often.

Some other social and psychological factors that could be related to the levels of family burden were also examined. The proposed study model suggested three

TABLE 6.11

REGRESSION OF SUBJECTIVE BURDEN ON OBJECTIVE BURDEN, HOSPITALIZATION AND INTERACTION TERM FOR TOTAL SAMPLE (N=188)

INDEPENDENT VARIABLES	UNSTANDARDIZED COEFFICIENT	(s.e.)	STANDARDIZED COEFFICIENT
Objective Burden	.59	(.17)	.32**
Hospitalization	-.17	(.09)	-.26$
Interaction Term	.05	(.03)	.32*
R^2		.221**	

* P<.05
**P<.001
$ P=.065

pertinent factors, mastery, social support and stressful life events. Since the previous analyses had shown that the interaction between number of hospitalizations and objective burden was significant, an examination of the role of these three factors was conducted including this interactive term and number of hospitalizations as control variables.

As shown in Table 6.12, of the three variables, only mastery was significantly associated with subjective burden indicating that the higher the sense of mastery, the lower the subjective burden. Neither social support nor life events were directly related to the dependent variable.

Do these factors modify or condition the association of the two family burden measures? So far, we have found that the objective/subjective burden relationship was conditioned by the patients' hospitalization history. However, as stated earlier, the study model suggested that certain social and psychological factors might alter the association between the two levels of family burden. The results shown in Table 6.13 examine the interactions between objective burden and mastery, social support and life events. It is apparent that mastery and social support did not change the extent of the relationship between the two measures of family burden. The interaction between objective burden and life events, however, showed a significant negative coefficient. This negative association of the interaction term indicates that the two levels of family burden tended to co-vary more closely when there were less stressful life

TABLE 6.12

REGRESSION ANALYSIS OF SUBJECTIVE FAMILY BURDEN ON OBJECTIVE BURDEN AND MASTERY, SOCIAL SUPPORT AND STRESSFUL LIFE EVENTS (N=208)

INDEPENDENT VARIABLES	STEP ONE		STEP TWO	
	b	beta	b	beta
Objective Burden	.86	.44*	.52	.27*
Number of Hospitalizations			-.15	-.21
(Objective Burden)* (Number of Hospitalizations)			.05	.28
Mastery			-.12	-.20
Social Support			.03	.05
Stressful Life Events			.07	.04
Constant	.73*		3.68*	
Multiple R (R^2)	.436 (.190)		.491 (.241)	
F Statistic	48.32 (p=.00)		10.64 (p=.00)	

*p < .05

TABLE 6.13

EXAMINATION OF INTERACTIVE EFFECTS OF MASTERY, SOCIAL SUPPORT AND STRESSFUL LIFE EVENTS (N=208)

INDEPENDENT VARIABLES	Interaction Term					
	Mastery by Objective Burden		Social Support by Objective Burden		Stressful Life Events by Objective Burden	
	b	Beta	b	Beta	b	Beta
Objective Burden	.89	.45	.40	.21	.85	.43*
Number of Hospitalizations	-.15	-.21	-.15	-.24	-.16	-.23
Objective Burden by Number of Hospitalizations	.05	.28	.05	.29	.05	.30*
Mastery	-.09	-.14	-.12	-.20*	-.13	-.20*
Social Support	.03	.05	.02	.04	.03	.06
Stressful Life Events	.06	.04	.07	.04	.16	.24*
Interaction Term	-.01	-.18	.003	.06	-.14	-.31*
Constant	2.85*		3.94*		3.04*	
Multiple R (R^2)	.493 (.243)		.491 (.241)		.515 (.265)	
F Statistic						

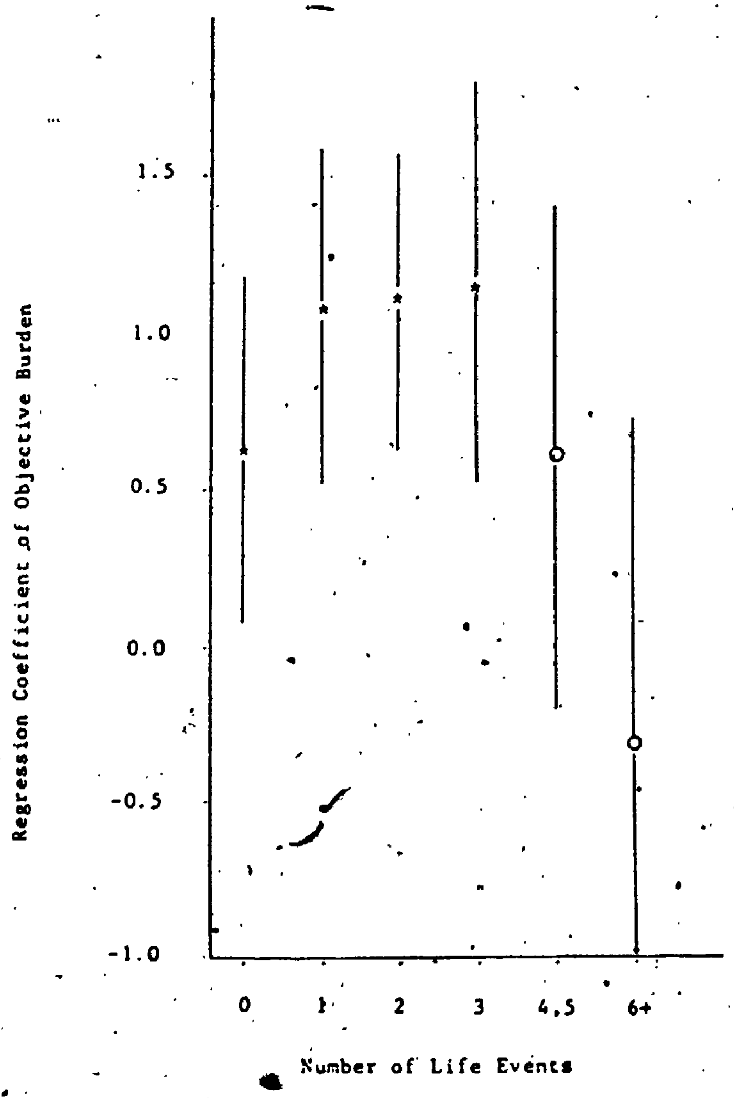
$^*p < .05$

events occurring. This finding seems contrary to what might be expected. According to the stress process literature, reviewed in Chapter 3, individuals who experience more stressful life events are expected to be more responsive to adverse environmental difficulties. Thus, it was hypothesized that those with greater life events scores would be more reactive to objective burden and would show stronger associations between the two levels of family burden. The present data demonstrates the opposite finding. According to the data shown in Table 6.13, the relationship (Beta) between objective and subjective burden was .12 when the level of life events was increased to one standard deviation above the mean, and the expected association increased up to .74 as the life events score decreased by one standard deviation below the mean.

In order to examine this interactive association in detail, bivariate regressions of subjective burden on objective burden were conducted, holding the level of life events constant. Life events scores were grouped into six categories, 0, 1, 2, 3, 4 or 5, and 6 or more. This permitted a direct comparison of the regression (unstandardized) coefficients. In Figure 6.4, the slopes and their confidence intervals (95%) of objective burden within six levels of life events are plotted on a scale. Plots marked with "*" indicate that the slopes are statistically significant ($p<.05$) while plots marked with "o" indicate that the slopes are not significant (the confidence interval includes

Figure 6.4

Illustration of the differential association between objective and subjective burden across the level of life events



the zero point). An examination of the six points in the figure shows that the association of objective burden is significant only when the level of life event scores were lower than 4. When the life event scores increasd beyond that point, the slope of objective burden was not significant. The slopes at the 1, 2 and 3 levels of life events are extremely close, and when no life events were experienced, the slope was significant but slightly lower than those three points.[1]

These data suggest that difficulties associated with the patient's disability (objective burden) was seen as burden and strain by the family members only when there were few other stressful events occuring in the family. When stressful events were experienced frequently, the extent of subjective burden was not related to level of objective burden.

6.5. Summary

In this chapter an attempt has been made to understand the extent of family burden experienced by individuals who were currently living with a formerly hospitalized mental patient. Family burden was classified in two dimensions, objective and subjective burden. A number of family

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[1] In separate analyses, the inclusion of the square term of the interaction or the interaction of objective burden with the square term of life events did not make a significant contribution to the model.

characteristics and patient characteristics were examined to determine their associations with each dimension of family burden.

In response to the first proposed research question, the extent of family burden was assessed based upon intuitive rather than empirical grounds, since no standardized measures of family burden were available. According to the operational definition and scoring scheme of objective burden, about 35% of the sample were interpreted as having little objective burden. Nearly 20% scored high and were considered to be suffering from a substantial level of objective burden. However, about 35% of the present sample showed high levels of emotional strain because of the presence of a patient at home (i.e., subjective burden), and these subjects were regarded as experiencing a significant level of subjective burden.

The second research question concerned the relationship between each of the two types of family burden distinguished and selected characteristics of family members and patients. It was found that objective burden was related to the sex of the respondent (and patient) and the patient's level of psychopathology. However, the strengths of these relationships were weaker than expected. The total variance in objective burden that could be accounted for by the linear model composed of family and patient characteristics was less than 10%. There was some suggestion that level of objective burden may significantly decrease after six months of community tenure.

As Hoenig and Hamilton (1969) reported, objective burden and subjective burden were largely independent of one another. Only a moderate relationship (r=.44) was found between the two levels of family burden. This association was not affected by the characteristics of the patient or the respondent. However, a significant portion of the variance shared by the two types of family burden was also shared by mastery. Thus, the (partial) correlation of objective burden with subjective burden (Beta =.27) was significantly lower than its zero-order correlation when mastery and other variables were taken into account. Social support and life events were not directly associated with the level of subjective burden. Therefore, the present data appeared to concur with Hoenig and Hamilton (1969) conclusions.

However, the analysis of interactive terms appeared to suggest circumstances in which the level of objective burden might be a more important correlate of subjective burden. The level of the family member's situational strain (subjective burden) appears to be strongly related to the level of objective burden when the patient had been hospitalized more frequently. Secondly, the two levels of family burden were also more closely correlated when fewer stressful life events were reported by the respondents.

CHAPTER 7

RESULTS II: FAMILY BURDEN AND THE MENTAL HEALTH OF FAMILY MEMBERS

7.0. Introduction

This chapter addresses the relationships between family burden and the mental health of individuals who reside with a psychiatrically disturbed family member. The variables of mastery, social support and stressful life events were considered in order to assess the extent to which these factors mediated the associations of family burden and the mental health. Specifically, the objective of this chapter is to address the last research question:

> What are the relationships between the mental health of family members of discharged patients and objective and subjective family burden? Are these relationships independent of the characteristics of the patients and their families? Are these relationships affected by social and psychological factors such as mastery, social support and stressful life events?

Before these questions are examined, some issues concerning the General Health Questionnaire (GHQ) will be considered. Since there are several methods of computing GHQ scores (Goldberg, 1972), the choice of coding schemes will be discussed briefly. Also, the factor structure of the GHQ scale will be presented.

7.1. Coding Schemes and the Structure of the General Health Questionnaire

7.1.1. Coding Schemes of the GHQ.

The dichotomized GHQ coding (0-0-1-1) scheme is most commonly used to detect probable cases of psychiatric illness. However, when the goal is to consider the level or severity of symptomatology rather than case detection, a Likert type scale seems preferable (Goldberg, 1972; Cochrane et al., 1977). In this thesis, a Likert coding (0-1-2-3) and a GHQ dichotomized coding are both employed.

7.1.2. Factor Structure of the GHQ.

A factor analysis (varimax rotation solution) was conducted using a Likert scale coding and the results are reported in Table 7.1. This analysis revealed seven factors with eigen values greater than 1. Factor 1 consisted of items relating to anxiety and nervousness and factor 2 included items that reflected depressive symptoms and loss of self-esteem and confidence. These two factors thus appeared to reflect psychological distress.

Three items, "carry on tasks", "felt warmth and affection" and "hopeful of future", seemed to be loading on the third factor. The content of these items vary substantially, and it was not clear what the nature of this factor might be. Factor 4 involved fewer items, but higher loadings and reflected the extent of the individual's involvement with social activities outside the home and positive feelings of task performance. Factor 5 had two

TABLE 7.1

FACTOR ANALYSIS OF GHQ SCALE WITH VARIMAX ROTATION

GHQ ITEMS	F1	F2	F3	F4	F5	F6	F7
Able to concentrate	.44		.38				
Lost sleep because of worrying	.52				.49		
Had restless nights	.53				.39		
Felt constantly under strain	.72						
Could not overcome difficulties	.55						
Life is a struggle all the time	.55		.31				
Enjoyed daily activities	.44		.37	.32			
Taking things hard	.74						
Scared and panicky for no good reason	.65						
Everything getting on top of me	.72						
Feeling unhappy and depressed	.69	.38	.35				
Losing confidence	.54	.55					
Felt I am worthless person		.68		.31			
Felt life is hopeless	.44	.61					
Feeling nervous all the time	.75						
Life is not worth living	.39	.64					
Could not do anything, too nervous	.6[illegible]	.40					
Able to keep busy and occupied			.45	.57			
Getting out of house				.59			
Manage things as well as others					.58		
Felt doing things well			.40	.41	.41		
Carry on tasks			.52				.37
Felt warmth and affection from others			.49				
Getting along with others							.82
Chatting with others				.64			
Playing useful part				.53			
Make decisions						.58	
Able to face up to problems						.34	
Hopeful of future			.41		.34		
Feeling Happy	.41		.42			.49	

major items which reflected the self-perception of competence, and factor 6 indicated feelings concerning problem solving activities. Factor 7 had only one item, "getting along with others".

While the first two factors seemed to show items suggesting anxiety and depressive symptoms, the nature of the other five factors was not as readily comprehensible. The items of factors 3 through 7, however, appeared to reflect one's competence in carrying on tasks and participating in social interactions with others.

Since these results of factor analyses seemed to correspond to two dimensions of mental health, symtomatic expression and social competence, a two-factor solution was forced in order to determine if this interpretation could be confirmed. The results of this analysis are shown in Table 7.2 where the frequency of each item is also displayed. The distributions indicate the percentages of responses for negative items.

Several items had some ambiguous loadings on two factors. For example, the first item, "able to concentrate", and the last item, "happy considering things", were loaded almost equally, but other items seemed to be more heavily loaded on one factor than the other. The overall patterns of these factor loadings appear to confirm the interpretation that the GHQ scale provides an assessment of the two subdomains of psychological distress and social dysfunctioning. It should be noted that factor two

TABLE 7.2

TWO-FACTOR SOLUTION OF GHQ SCALE

GHQ ITEMS	Factor 1 Psychological Distress	Factor 2 Social Dysfunctioning	MORE THAN USUAL %
Able to concentrate	.48	.41	13.9
Lost sleep because of worrying	.62	.30	14.2
Had restless nights	.62	.30	15.6
Felt constantly under strain	.66		17.5
Could not overcome difficulties	.63		10.0
Life is a struggle all the time	.66		13.7
Taking things hard	.65		12.8
Scared and panicky for no good reason	.72		6.1
Able to face up to problems	.32		4.3
Everything getting on top of me	.71		12.3
Feeling unhappy and depressed	.78		17.1
Losing confidence	.71		6.1
Felt I am worthless person	.52		6.7
Felt life is hopeless	.70		6.1
Feeling nervous all the time	.76		12.8
Life is not worth living	.70		5.2
Could not do anything, too nervous	.78		9.0
Able to keep busy and occupied		.61	5.7
Getting out of house		.38	10.4
Manage things as well as others		.40	2.4
Felt doing things well	.33	.68	5.7
Carry on tasks		.60	8.0
Felt warmth and affection from others		.50	5.2
Getting along with others		.47	3.3
Chatting with others		.55	7.1
Playing useful part		.62	7.1
Make decisions		.30	5.2
Enjoyed daily activities	.43	.57	4.3
Hopeful of future	.30	.46	7.1
Feeling reasonably happy considering things	.42	.49	7.1
Mean	13.2	12.8	
Standard Deviation	8.0	3.3	
Internal Consistency (Alpha)	.94	.85	

(social dysfunctioning) included all items of "social functioning" and "anhedonia" factors that were reported by Goldberg and his associates (1976), whereas the first factor included items indicating symptoms of depression, anxiety, insomnia and anergia.

The frequencies shown in Table 7.2 demonstrate that the most commonly reported items were those related to anxiety symptoms. Factor 1 indicates that items that were concerned with depression and loss of esteem had relatively lower frequencies. Social dysfunctioning items also occurred at a lower level.

The means and standard deviations of the psychological distress and social dysfunctioning subdimensions are reported at the bottom of Table 7.2. While the mean scores were similar, the variances (standard deviations) of the two variables differed considerably. Psychological distress showed a standard deviation that was more than two times the standard deviation of social dysfunctioning. Psychological distress also showed a somewhat higher internal consistency coefficient (alpha of .94 vs. .85).

At this point, the relationship between the various measures of the GHQ scale will be examined. The correlation matrix of the six scores of the GHQ is shown in Table 7.3. The total score of the Likert Scale was almost perfectly correlated to the level of psychological distress. While its correlation with social dysfunctioning was somewhat lower, only about 60% of the variance of the

TABLE 7.3

ZERO-ORDER CORRELATIONS BETWEEN GHQ AND LIKERT CODINGS OF GHQ

	1	2	3	4	5	6
(1) Likert Scale 30 - item	---					
(2) Pychological Distress: Likert Scale	.97	---				
(3) Social Dysfunctioning: Likert Scale	.78	.59	---			
(4) GHQ Coding 30 - item	.87	.82	.73	---		
(5) Psychological Distress: GHQ Coding	.86	.85	.63	.97	---	
(6) Social Dysfunctioning: GHQ Coding	.77	.65	.82	.90	.78	---

All coefficients are significant at .001 level.

total GHQ scores covaried with the social dysfunctioning (r^2=.608) score. The shared variance between the two dimensions of the GHQ was about 35% (r^2=.348). The correlations of the total scale and the two dimensions were greater when the GHQ coding method was used. While the total GHQ score and the psychological distress score were correlated at the same level as they were with the Likert coding scheme (.97 in both cases), the social dysfunctioning scale appeared to be better correlated to the other measures with the GHQ (dichotomized) coding than with Likert coding.

7.2. Family Burden and Mental Health

Table 7.4 presents the zero-order correlations and the results of regression analyses (see Table C.1 in Appendix C, for Correlation Matrix). A straight Likert scale coding scheme was used as the outcome measure. The zero-order correlations showed that both objective and subjective burden were related to mental health. The subjective burden/mental health correlation was slightly larger than the objective burden/mental health coefficient but the difference was not statistically significant. Less than 9% of the variance in the GHQ was accounted for by each of the burden measures.

The variables in the equation were entered stepwise in this regression analysis as groups (Table 7.4). This procedure allows an investigation of the net increments of multiple correlation that are attributable to each group of variables. The first two steps examined the associations of family burden and mental health controlling for family member and patient characteristics. In the final step, the relevance of social and/or psychological variables were analyzed.

As can be seen from the first step of analysis, about 12% of the total variance in the GHQ was accounted for by family and patient characteristics. This accounted for variance was mainly attributable to the sex and education of respondents, and to the patient's psychopathology.

The second step of analysis in Table 7.4 revealed that, of the two family burden measures, only subjective burden had a significant coefficient. Since the partial correlation of objective burden at step one was significant (partial $r = .18$; $p < .05$), these results indicate that the variability in objective burden that is relevant to GHQ scores is also shared with subjective burden. The equation shown in step two accounted for 20% of the variance in the GHQ. This was significant at the .01 level, and 8% of the variance could be attributable to family burden after the associations of family and patient characteristics were taken into account.

Step three of the regression analysis shows a considerable increase of the multiple relationship (an R^2 increment from .20 to .37). However, only mastery contributed significantly to this R^2 increment. Social support

TABLE 7.4

STEPWISE REGRESSION OF TOTAL GHQ (LIKERT SCALE)

INDEPENDENT VARIABLES	r	STEP 1 (N=188) b	(se)	Beta	STEP 2 (N=188) b	(se)	Beta	STEP 3 (N=185) b	(se)	Beta
Family Characteristics										
Sex of respondents	.12*	3.77	(1.46)	.20**	3.57	(1.42)	.19*	1.69	(1.32)	.09
Age of respondents	-.10	-.10	(.06)	-.14	-.10	(.06)	-.13	-.10	(.05)	.12
Education of respondents	-.14*	-.96	(.48)	-.14*	-.95	(.47)	-.14*	-.62	(.43)	-.09
Family relations	-.01	-3.11	(2.09)	-.13	-2.85	(2.00)	-.12	-2.00	(1.83)	-.08
Patient Characteristics										
Diagnosis	-.06	-.86	(1.44)	-.04	-1.02	(1.38)	-.05	-.46	(1.28)	-.02
Number of previous hospitalizations	-.03	-.07	(.15)	-.03	-.09	(.14)	-.04	-.06	(.13)	-.03
Community tenure	.02	.07	(.04)	.12	.06	(.04)	.12	.06	(.03)	.13*
Psychopathology	.13*	2.93	(1.22)	.17*	1.84	(1.20)	.11	1.75	(1.09)	.14
Family Burden										
Objective burden	.21**				.46	(.46)	.06	.11	(.42)	.02
Subjective burden	.29**				.81	(.24)	.26**	.39	(.23)	.12
Socio-psychological Factors										
Mastery	-.54**							-.76	(.12)	-.43**
Social support	-.23**							-.09	(.11)	-.06
Life events	.16**							.30	(.28)	.07
Constant		27.58	(3.69)		25.58	(5.59)		50.78	(5.65)	
R^2		.12**			.20**			.37**		

*p<.05
**p<.01

and life events did not appear to be important when mastery was considered.[1] Since subjective burden does not contribute significantly to the final equation, it appears that the variance in family burden that was relevant for mental health status was also shared with the social psychological variables considered.

To assess possible interactive effects, a series of additional regression analyses were conducted. The results indicated that the associations between the GHQ and the independent variables differed across the diagnostic subgroups. Step 3 of the regression shown in Table 7.4 was replicated for the two diagnostic groups--schizophrenia and other diagnoses (see Tables C.2 and C. 3 for correlation matrices). In order to simplify the presentation, only the significant variables are shown in Table 7.5. First, it should be noted that the regression model was more powerful for the "other diagnoses" group: the R^2 was much larger than the R^2 for the schizophrenic group. About 49% of the variance of the GHQ was accounted for in the "other diagnoses" group and 37% of the variance was accounted for in the schizophrenic group.

Diagnosis and community tenure showed a significant interaction association with the GHQ scores. The positive

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[1] Although community tenure at this step of the analysis showed a significant coefficient, the difference between the coefficient shown in earlier steps and the one found in step three was minimal.

TABLE 7.5

REGRESSION OF GHQ (TOTAL LIKERT SCALE) ON FAMILY AND PATIENT CHARACTERISTICS, FAMILY BURDEN, AND SOCIAL-PSYCHOLOGICAL FACTORS, FOR TWO DIAGNOSTIC GROUPS[1]

INDEPENDENT VARIABLES	Schizophrenic (N=90)		Other Diagnoses (N=95)	
	b	s.e.	b	s.e.
Community Tenure §	.14*	.05	.02	.04
Mastery	-.67*	.19	-.77*	.17
Social Support §	.11	.16	-.44*	.16
Life Events	.02	.43	.48	.36
Constant	41.68*	9.38	61.15	7.35
R^2 (P for F statistics)	.37 (P=.000)		.49 (P=.000)	

1. Regression analyses included all variables used in earlier analyses, but only relevant variables are presented in this table. None of unreported variables, including objective and subjective burden, had significant coefficients, nor showed significant slope differences.

§Slope differences are significant at .05 level.
*P < .05

sign of the regression coefficient of community tenure in the subsample group of schizophrenic patients indicated that, among the families of schizophrenic patients, there was a direct positive relationship between GHQ scores for family members and the length of the patients community tenure. Community tenure was not related to the GHQ score among the family members of non-schizophrenic patients.

Given the chronic and severe nature of schizophrenia, these patients could have easily influenced the lives of family members, and thus the longer the patient remained at home and was dependent upon the family, the greater the impact could have been on the mental health of other family members. It will be recalled from Chapter 6, that no significant association between diagnosis and the level of subjective family burden was found, that the degree of objective burden tended to level off after six months of community tenure, and that the nature of the diagnosis did not alter the association between objective and subjective burden. Therefore, it can be said that maintaining schizophrenic patients at home for an extended period appears to have a direct negative impact on the mental health of the other members of the family. However, it would be equally possible that patients living in households where other members are also mentally disturbed are less likely to be referred to health service professionals, and consequently remain in the community for longer periods. In either case, it seems apparent that the longer a schizophrenic patient resides with the family, the greater is the possibility of a mental health disturbance for other family members.

While the length of community tenure was strongly associated with the mental health of families of schizophrenic patients, social support was much more significant for the "other diagnoses" group. Mastery appeared to be equally important for both groups and life events showed no significant associations in either group.

In addition to the direct associations of mastery and social support, the buffering or moderating effects of the variables were examined. In Table 7.6, the partial correlations of six interactive terms are presented. The partial correlations were assessed with all of the variables (shown in the last step of the regression analysis Table 7.5) entered into the equation. Table 7.6 indicates that social support was not a moderator, while mastery played an important role in conditioning the association of objective and subjective burden with GHQ scores.

For the schizophrenic group, mastery seemed to moderate the link between the GHQ scores and both objective and subjective burden. However, the two interaction terms showed a high multicoliniarity (r=.89), and thus only mastery and subjective burden made a significant contribution to the equation (the final analysis is not reported in the table). The mastery-subjective burden interaction term increased R^2 from the .37 shown in Table 7.5 to .41.

TABLE 7.6

PARTIAL CORRELATIONS OF INTERACTION TERMS OF MASTERY AND SOCIAL SUPPORT BY OBJECTIVE AND SUBJECTIVE BURDEN AND STRESSFUL LIFE EVENTS, FOR TWO DIAGNOSTIC GROUPS

INTERACTION TERMS	SCHIZOPHRENIA (N=90)	OTHER DIAGNOSIS (N=95)
Interactions of Mastery		
by Objective Burden	-.22¶	-.21§
by Subjective Burden	-.24*	-.08
by Life Events	-.06	-.09
Interactions of Social Support		
by Objective Burden	.03	-.001
by Subjective Burden	-.02	.08
by Life Events	.09	-.002

*P = .033

¶P = .053

§P = .051

In the non-schizophrenic group, mastery tended to moderate the objective burden/GHQ association. It is interesting to note that although the interaction terms of mastery with objective and with subjective burden were highly correlated (r=.91), the partial association of the two interactions with the GHQ were significantly different. In a separate analysis of the total sample, mastery showed a significant interactive effect with both objective burden (P=.003) and subjective burden (P=.022). Thus, it can be concluded that mastery moderated the relationship between family burden and the GHQ score. In other words, when individuals were able to maintain their sense of mastery and control in spite of the burden or strain associated with the presence and disabilities of an ill family member, their mental health could be maintained.

At this point, the two identified subcomponents of the GHQ, psychological distress and social dysfunctioning, are examined. The same analytic approach was used, and the results are summarized in Table 7.7. With respect to the total sample analyses, psychological distress was associated with mastery, subjective burden and the age of the respondents. Social dysfunctioning, on the other hand, appeared to be related to community tenure and mastery. The total variance that was collectively accounted for by the variables considered differed importantly for the two subdimensions. The regression model explained 40% of the

TABLE 7.7

REGRESSIONS OF PSYCHOLOGICAL WELL-BEING AND SOCIAL DYSFUNCTIONING DIMENSIONS OF GHQ, FOR TOTAL SAMPLE, AND SUBSAMPLES OF SCHIZOPHRENIA AND OTHER DIAGNOSIS (N=185)

	PSYCHOLOGICAL WELL-BEING						SOCIAL DYSFUNCTIONINGS					
	TOTAL		SCHIZOPHRENIA		OTHERS		TOTAL		SCHIZOPHRENIA		OTHERS	
INDEPENDENT VARIABLES	b	Beta	b	Beta	b	Beta	b	Beta	b	Beta	b	Beta
Sex of respondents	1.36	.09	.05	.01	2.40	.15	.33	.05	.99	.14	.14	.02
Age of respondents	-.09	-.16*	-.11	-.21	-.09	-.14	-.01	-.02	-.01	-.01	.01	.01
Education of respondents	-.47	-.09	-.68	-.14	-.12	-.02	-.14	-.07	-.41	-.17	.26	.14
Family relations	-1.78	-.09	-.96	-.06	-2.40	-.09	-.22	-.03	-1.07	-.15	.72	.08
Diagnosis	-.42	-.03					-.04	-.01				
Number of previous hospitalizations	-.03	-.02	.04	.04	-.23	-.09	-.02	-.04	-.04	-.07	-.08	-.10
Community tenure$	.04	.10	.09	.24*	.01	.00	.02	.15*	.04	.22*	.02	.13
Psychopathology (BSI)	1.26	.10	1.64	.14	1.30	.09	.49	.09	.57	.10	.77	.16
Objective burden	-.02	-.01	-.23	-.05	.26	.06	.14	.07	[illegible]	.09	.18	.12
Subjective burden	.36	.15*	.38	.17	.20	.08	.03	.03	.11	.10	-.12	-.14
Mastery	-.58	-.42*	-.52	-.39*	-.58	-.40*	-.17	-.32*	-.15	-.24*	-.19	-.40*
Social support$	-.13	-.10	-.01	-.01	-.35	-.23*	.04	.07	.12	.22*	-.09	-.17
Life events	.40	.11	.12	.03	.60	-.18*	-.10	-.07	-.01	-.05	-.12	-.11
Constant	35.38*		30.05*		42.42*		15.40*		11.64*		18.73*	
R^2	.40*		.39*		.50*		.17*		.27*		.24*	

*P<.05

$ Slope difference is significant (between two diagnostic groups) for psychological well-being.

total variance in psychological distress, while it accounted for only 17% of the variance in social dysfunctioning.

A consideration of diagnostic subgroups further specified associational differences. For individuals who were living with a schizophrenic patient, the level of psychological distress was strongly related to community tenure and the level of mastery.[1] On the other hand, the psychological distress of persons living with nonschizophrenic patients was related to mastery, social support and life events. It is worth noting that the model used in this study appeared to account for more variance in psychological distress for the non-schizophrenic group. In the schizophrenic group, the model accounted for 39% of the total variance in psychological distress, while in the non-schizophrenic group the total variance explained by the model was 50%.

The interactions of the diagnostic groups with respect to the psychological distress outcome are interesting. As reviewed earlier (Chapter 3), there have been consistent research findings about the significant relationships between psychological distress and social support and life

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[1] The partial association (Beta) of subjective burden was even larger than was found in the total analysis (Beta=.15 and .17). It appears that the psychological distress of the schizophrenic group may be related to the level of subjective burden, but its statistical significance was affected by the reduced number of cases involved in the subgroup analysis.

events. In the present study, these findings were supported only among those individuals who were living with non-schizophrenic patients.

Social dysfunctioning also showed differential associations between the two diagnostic groups. Similar to psychological distress, social dysfunctioning was related to community tenure, only for the family members of schizophrenic patients. While mastery showed a significant association in both diagnostic groups, the social support coefficient was significant only in the schizophrenic group. However, this association was positive, and indicated that the higher the level of social support, the greater the disturbance in the social functioning component of mental health. This finding is completely opposite to what would be expected in a general study of mental health and social support. This positive association between social support and social dysfunctioning may suggest that those who live with a schizophrenic patient and experience higher levels of being supported, esteemed and loved by others feel that their social desire to interact with individuals in a larger social context is more restricted by the ill members of the family. It is widely known that schizophrenic patients have more difficulties with social interactions and tend to be isolated from the world outside of their homes. The significant difference in the regression coefficients for the social support variable between the two diagnostic groups may be understandable in these terms.

To summarize the results of this section, of the two levels of family burden, only subjective burden seemed to be related to scores of the GHQ total scale. However, when mastery was introduced into the equation, subjective burden was no longer significantly associated (Table 7.4). Community tenure was also importantly related to GHQ scores, but only for individuals who were living with a schizophrenic patient. Social support appeared to be important for the overall mental health of the non-schizophrenic patient's family members. Only mastery was consistently associated with the GHQ scores for both diagnostic groups, and mastery also buffered the relationship between family burden and the GHQ scores.

Focusing on the two diagnostic groups, it appears that patient-related factors (i.e., community tenure and family burden) bear on the mental health of the family members of schizophrenic patients, while social support and life events tend to be more significant for the mental health of family members of non-schizophrenic patients. These differential patterns of associations were somewhat more clearly displayed on the psychological distress dimensions of mental health than on the social dysfunctioning aspects.

7.3. General Health Questionnaire Used as a Screening Instrument

It was mentioned earlier that the 30-item GHQ scale consists of items that are calibrated for the detection of "probable cases" of psychiatric morbidity. The primary purpose of this scale is to screen psychiatric cases in general populations.

The cut-off point to distinguish individuals who should be further evaluated or referred for psychiatric care was established by Goldberg (1972) who recommended a score of between 3 and 4. Table 7.8 presents the distribution of scores for the significant others interviewed on the 30-item version of the GHQ. Based on the suggested cut-point, the percentage of significant others that required psychiatric assistance was 20.9%. Other studies that focused on subjects from general practices and community studies have produced varying percentages of problem cases. However, Tarnoplosky et al. (1979) have shown that, under true community conditions, the prevalence of high scores varies from 22% to 36% depending upon which cut-off point was selected.

While it seems apparent that a number of our study sample were likely to be in need of psychiatric care, a comparison of our results with estimated community rates failed to confirm our expectation that family members of ex-hospitalized patients have a high risk of psychiatric morbidity. There is, however, an important caveat that

TABLE 7

FREQUENCY DISTRIBUTION OF GHQ SCALE (GHQ CODING)

NUMBER OF SYMPTOMS	NUMBER OF FREQUENCY	%	CUMMULATIVE PERCENT
0	118	55.9	55.9
1	28	13.3	69.2
2	14	6.6	75.8
3	7	3.3	79.1
4	7	3.3	82.5
5	5	2.4	84.8
6	2	.9	85.8
7	5	2.4	88.2
8	3	1.4	89.6
9	1	.5	90.0
11	4	1.9	91.9
12	1	.5	92.4
13	1	.5	92.9
15	2	.9	93.8
16	4	1.9	95.7
17	3	1.4	97.2
18	1	.5	97.6
19	2	.9	98.6
25	1	.5	99.1
26	2	.9	100.0
TOTAL	211	100.0	

must be attached to this conclusion. The GHQ asks respondents to report changes in their feelings over the past few weeks in comparison to how they usually feel. For this reason, the instrument may not adequately reflect the distress level of individuals who experience chronic difficulties. Because the presence of a psychiatrically disturbed family member is likely to represent a source of continuing or chronic stress, the General Health Questionnaire may have seriously underestimated the level mental health disturbance among significant others. Therefore, an estimate of 21% of the sample with clinically relevant distress levels is probably very conservative.

The associations of the dichtomized GHQ scores and sociodemographic variables are presented in Table 7.9. For the total sample the sex and age of the respondents and relationship to patient were not associated with the GHQ scores. The educational level of the respondents showed a significant difference. Those with high GHQ scores had a lower level of education. The mean scores on education suggest that the group whose GHQ scores were less than 4 have had an average of less than 9 years of schooling, while the group whose scores were more than 3 had more than 10 years of formal education.

None of the four indicators of the patient's characteristics differed for the two GHQ groups. However, those who were screened as needing psychiatric care (GHQ$\geq$4) tended to experience more family burden (both

TABLE 7.9

MEANS AND STANDARD DEVIATIONS OF INDEPENDENT VARIABLES FOR SUBGROUPINGS OF GHQ<4 AND GHQ≥4 FOR DISCRIMINANT FUNCTION ANALYSIS (N=185)

	TOTAL SAMPLE				SCHIZOPHRENIA				OTHER DIAGNOSIS			
	GHQ<4		GHQ>4		GHQ<4		GHQ>4		GHQ<4		GHQ>4	
	X	SD	X	SD	X	SD	X	SD	X	SD	X	SD
Sex (% of females)	49.1		47.7		49.4		37.3		48.1		52.9	
Family Relation												
(% of spouse)	76.0		81.8		[63.6		87.5	]$	88.9		94.1	
Age of respondents	49.0	13.0	45.6	12.0	49.9	13.8	43.4	12.0	48.0	12.3	46.9	12.0
Education of respondents	[2.2	1.4	1.7	1.4]*	[2.2	1.4	1.4	1.1]*	2.2	1.4	2.0	1.7
Diagnosis												
(% of schizophrenics)	48.7		48.5									
Number of hospitalizations	4.3	4.6	4.9	5.4	4.6	5.9	5.6	6.5	3.9	3.2	3.9	3.3
Community tenure	28.4	18.9	25.6	19.8	[28.40	17.3	37.1	18.7]$	28.6	20.7	24.8	19.3
Psychopathology (BSI)	.62	.58	.75	.57	.70	.07	.83	.13	.55	.54	.76	.59
Objective burden	[2.00	1.6	2.8	2.1]*	2.1	1.6	2.4	1.7	[1.8	1.6	3.0	2.3]*
Subjective burden	[2.1	3.0	4.4	4.1]*	[2.2	3.1	4.1	3.8]*	[1.9	2.8	4.1	3.6]*
Mastery	[28.0	4.8	23.0	6.3]*	27.8	5.0	26.1	6.9	[28.0	4.7	21.1	5.8]*
Social support	[34.4	5.5	31.3	6.1]*	33.5	6.0	32.3	7.1	[35.4	4.9	31.1	5.3]*
Life events	[1.9	2.1	2.9	2.6]*	1.7	1.7	2.3	2.4	[2.0	2.2	3.2	2.6]$

* Oneway analysis of variance test is significant at .05 level.

$ Oneway analysis of variance test is significant at .10 level objective and subjective), and reported more stressful life events. They also showed a significantly lower level of mastery and social support.

When the 'probable cases' (GHQ>4) were compared to the "normal" subjects (GHQ<4) within each diagnostic group, substantially different associational patterns emerged. Among the family members of schizophrenic patients, parents rather than spouses tended to have more psychiatric problems. It has long been suggested, that schizophrenic illness may be transferred through families (Robins et al., 1980). Thus, the observed differences of psychiatric cases in the present data might be interpreted as being consistent with this genetic hypothesis. However, given the well known tendency of patients who live with spouses to do better than those living with parents, it is possible that parents are subjected to a higher intensity of chronic strain.

The educational difference between the GHQ groups continued to be significant for family members of schizophrenic patients. Community tenure also seemed relevant in this diagnostic group. Although the difference in community tenure was not statistically significant (presumably because of the small sample size), the mean difference was quite large. In earlier analyses, a strong association between the GHQ Likert scale and community tenure for family members of schizophrenic patients was documented and these results repeat those findings. The only variable that was strongly associated with the GHQ in both diagnostic groups was subjective burden. Objective burden was significant only for the "other diagnoses" group. Mastery, social support and stressful life events were also related but only among family members of non-schizophrenic patients.

To examine the capacity of independent variables to distinguish "probable cases" from "non-cases" (as assessed by cut-off score of GHQ ≥ 4), discriminant function analyses were conducted. The total sample results showed that only mastery and subjective burden were significant for the discrimination of cases. The combination of the two measures correctly discriminated 71% of the cases in the total sample. The results had 26.5% "false positives" and 38.6% "false negatives". Discriminant analysis within the schizophrenic group revealed one significant variable, subjective burden. The discriminating power of the variable was not as good as the one obtained in the results from the total sample analysis. More than 60% of individuals who had GHQ scores of three or less were incorrectly classified as probable cases, and less than 68% of all the cases were correctly classified. For the non-schizophrenic group the results indicated that both mastery and social support were significant discriminators. A total of 78% were correctly located to their groups and, as a result, there were 21% false positives and 25% false negatives.

7.4. Summary

This chapter has dealt with the role and significance of family burden and other factors that may bear on the mental health of family members who live with a discharged psychiatric patient. Mental health was measured by the GHQ scale, which was coded using two different methods. First, using the Likert coding scheme, this chapter examined the relationship between the mental health of significant others and a series of demographic and psychosocial variables.

Family burden (subjective) was found to be significantly associated with total GHQ scores. However, this relationship was largely mediated and moderated by mastery (Table 7.4 and Table 7.6). In the total sample using the 30-item GHQ, only mastery and community tenure showed significant relationships. Among family members of schizophrenic patients the length of the patient's tenure in the community was positively associated with mental health disturbance.

Other variations were also found across the two diagnostic subgroups (schizophrenic and others). The two variables, mastery and community tenure, were found to be most strongly related to the total GHQ scores for the family members of schizophrenic patients, whereas mastery and social support were the strongest independent correlates of the mental health of family members of non-schizophrenic patients. Furthermore, mastery had a significant buffering effect. Finally, the total variance accounted for by the additive model used in this study was much larger for the non-schizophrenic sample.

The second analytic process considered the two sub-dimensions of mental health, psychological distress and social dysfunctioning. Again, the subsamples of the two distinctive diagnoses were examined separately. For the schizophrenic sample, heightened psychological distress was significantly associated with prolonged community tenure and lower levels of mastery. Within the "other diagnoses" sample, mastery, social support, and life events showed significant associations and the model accounted for 50% of the total variance in psychological distress.

With the subsample of "schizophrenia", a prolonged community tenure and a lower level of mastery were again the strongest correlates of social dysfunctioning among family members. For this subsample, social support was significantly associated with this dimension, but with an unexpected direction of relationship: those who had a higher level of social support tended to score higher on the dysfunctioning dimension. It may be speculated that family members of schizophrenic patients who experience themselves being loved, cared for, and important to others, are more likely to be affected by the constraints associated with the presence of a socially withdrawn family member.

Within the "other diagnoses" sample, mastery was the only significant correlate of the social dysfunctioning dimension of the GHQ. Social support and life events, which were importantly related to the psychological distress dimension for this subsample, were not found to be relevant for level of social dysfunctioning.

The final analysis focused upon the distinction between respondents with high and low GHQ scores, corresponding to a diagnostic use of the instrument. The discriminant function analysis showed only that subjective burden contributed significantly for the subjects within the schizophrenia group. Within the other diagnoses subgroup, mastery and social support were the strongest discriminators.

When all results are considered, it appears that the level of family burden may not be of central importance for the mental health of family members who daily cope with a psychiatric patient. The most salient factors seem to be community tenure, mastery, social support and life events. However, the interrelations of these factors with overall mental health and the subdimensions of mental health vary according to the nature of the patients illness.

CHAPTER 8

IMPLICATIONS AND DISCUSSION

8.0. Introduction

This study has considered the association between family burden and the mental health of family members from the stress process perspective. In this model, mental health is considered as the outcome of the stress process, and family burden is viewed as a major source of stress. Based upon this theoretical perspective, the burden/mental health association was examined in a multivariate model. The results of this study indicated that family burden may not be the most important correlate of the mental health of family members. Social-psychological variables other than family burden were importantly associated with the level of mental health, and the burden/mental health relationship was conditioned by these variables. This chapter focuses upon the implications of the results and also discusses some limitations and restrictions that should be attached to the findings of this study.

8.1. Implications

The most general conclusion that can be drawn from this study is that the correlates of the mental health of family members differ significantly according to the patient's diagnosis. Among the variables that were used in the analyses, only mastery appeared to be significantly associated with the mental health of family members of both schizophrenic and "other diagnoses" patients. Both family burden and community tenure were significant when the patient in the home was diagnosed as a schizophrenic. Social support and life events seemed to be relevant for mental health when the respondents lived with a non-schizophrenic patient.

Contrary to expectation, the findings indicate that family burden was not the single most important factor associated with the mental health of family members of psychiatrically disturbed patients. Family burden was found to be associated with the significant other's mental health status only where the patient had been diagnosed as schizophrenic. Even among the relatives of schizophrenic patients, however, the burden/mental health relationship was affected by the level of mastery that the relatives demonstrated. In other words, family burden appeared to be problematic for the mental health of family members only when these individuals had lower levels of mastery. Moreover, this burden/mental health association was observed only with respect to the psychological distress dimension of mental health, and was not found in relation to the social dysfunctioning dimension. Finally, the strength of the burden/mental health association was weak, or moderate at best. Therefore, the evidence does not seem to support the conclusion that discharged psychiatric patients tend to have a serious adverse affect on members of their family.

However, this research did demonstrate that the length of community tenure was positively related to the degree of mental disturbance of the family members of schizophrenic patients. This appears to suggest that schizophrenic patients residing at home may have an adverse effect on the well-being of the family. Although the present survey data does not permit inference on the causal effects of independent variables, the results are consistent with such a conclusion. Since the association between community tenure and the outcome measure was independent of degree and length of the patient's illness, family burden, and other demographic and psychosocial factors, this relationship appeared to be meaningful. Therefore, it is plausible to suggest that individuals who live for a prolonged time with a schizophrenic patient may be adversely affected by the presence of the patient at home.

As the community tenure/mental health association was found only among the schizophrenia group, the results may indicate that current aftercare programs are less effective for schizophrenic patients, or at least for their families. Although the remission rate of the illness has improved over the past three decades, research has indicated that drug therapy is the most important factor in the prevention of relapse (Lehmann, 1975). However, it has also been found that the majority of discharged schizophrenic patients fail to make or maintain contacts with aftercare service, and, consequently, the effectiveness of drug therapy is severely limited (Lehmann, 1975).[1]

The present data seem to support the suggestion made by Grad and Sainsbury (1968) that aftercare programs should pay more attention to the implementation of new programs designed to enhance social support for families of patients. They emphasized "the importance of supplementing the clinical care of the patient treated outside the hospital with adequate social support to his family" (Grad and Sainsbury, 1968:277). Recently, there has been increasing evidence which suggests that therapeutic programs involving both schizophrenic patients and their families are very effective. A combination of drug treatment and family (including patient) therapy has been found to be effective in helping families to increase their ability to cope with stressful events and strain and in aiding patients to integrate themselves back into the family (Goldstein, 1981). However, the clinicians' traditional belief that an over-involvement with family members when treating schizophrenic patients adversely affects the patients' prognosis has

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[1] Data from the present sample appear to support this statement. The frequency of patients' contact with aftercare services was low (see Appendix E), and when the patients did utilize the services, the duration of the contact was short (Turner et al., 1983a). As can be seen in Table E.1, although schizophrenic patients were most likely to utilize such services, the differences across the two subgroups of diagnoses were rather small.

prevented family members from receiving therapeutic programs and participating in the treatment processes:

> The psychiatric patient had to be separated from these disturbed family systems. The relatives, in turn, were frequently handled in a moralistic fashion. The pateint's illness was their fault and they should go away, shrouded in guilt, and leave the professional alone to undo the damage (Goldstein, 1981:2).

It is true that families of schizophrenic patients are often emotionally disturbed and lack effective communicative and stress-coping skills. These factors are thought to be part of the etiological process of schizophrenic illness. However, this clinical view ignores the fact that family members not only have to cope with the patient but they are also the primary care-givers. Therefore, rather than isolating family members from the treatment process, it seems to be more desirable to involve both the patient and significant relatives in aftercare programs.

Some findings obtained from the present study suggest that family training and therapy could be augmented by the implementation of programs focusing upon helping families to increase their coping resources, such as a sense of mastery and social support. Families of schizophrenic patients, according to the results of this study, would be assisted by intervention programs that emphasized the development of personal control or mastery. Families of non-schizophrenic patients would be more effectively aided by intervention programs aimed toward enhancing both mastery and social support. Grad and Sainsbury (1968) also found social support to be more helpful for families of non-schizophrenic patients.

These conclusions on the possible preventive role of social support were based upon the results concerning the relationship of social support to the total GHQ scores (see Table 7.5 and results of discriminant function analysis) and the psychological distress subdimension of GHQ (see Table 7.7). However, the result regarding the social dysfunctioning of GHQ revealed an unexpected relationship (see Table 7.7). Among the respondents with schizophrenic relatives, social support was found to be negatively associated with the adequacy of social functioning. Since there appears to be no sound theoretical interpretations that can be offered, and no prior literature report on this specific relationship, it is difficult to know how much to credit this paradoxical finding. Perhaps, to speculate, those who are actively involved in social life, and thus more likely to experience being supported by others, tend to perceive that they are restricted by their socially withdrawn schizophrenic relatives. The fact that this finding is observed only among the relatives of schizophrenic patients seems to be consistent with this speculation. Schizophrenic patients tend to exhibit severe social withdrawl, and, therefore, would impose greater restrictions on the family members' social life.

It should be pointed out that the two subscales of the GHQ are distinquished from each other. Psychological distress refers to emotional affect, while social dysfunctioning is directed toward "objectively observable behavior, and consists of items that could be reported on either by the respondent or by another informant" (Goldberg 1978:9). This suggests that the two subdimensions of the GHQ should be expected to exhibit rather substantial differences. The results of this study confirmed this expectation. The items of social dysfunctioning showed relatively lower frequencies (Table 7.2) than the items of psychological distress. In addition, the multiple relationship of social dysfunctioning dimension with all the variables considered in this study was considerably lower than what was found for the psychological distress dimension (Table 7.7). Also, a fewer number of significant correlates were found for social dysfunctioning dimension.

It is possible that one may attempt to find and choose one subscale that seems to be the best indicator for a subjective evaluation of mental health. This process, however, involves the selection of an external criterion for the validation of the choice. The problem involved in such an attempt is the difficulty of determining the external criterion. Veroff et al. (1962) have discussed such difficulties:

> It is difficult to choose such an external validation criterion given the considerable conceptual disagreement as to what the definitions and criteria of mental illness and health should be. ...Although the problem is partly a function of the imperfections of our knowledge in this area, it is likely that the many different relevant criteria of disturbance can never be encompassed within a single all-embracing criterion (p.204).

It may be more appropriate and plausable to expect that the nature of mental health is multidimensional, and to consider different factors as being relevant for different dimensions of mental health rather than to choose the best indicators of mental health. The results of this study suggest that the social dysfunctioning measure, in comparison to psychological distress, was independent of other psychosocial and demographic factors considered in the analyses. The patterns of associations of these two dimensions were further differentiated by the subsamples of respondents. Relatively little differences were found among the significant others of schizophrenic patients, while significant variations were noted within the subsample of the non-schizophrenic group. Within the second sample group, the widely recognized roles of social support and life events were confirmed only with respect to the psychological distress dimension. Given that most literature reporting the significance of social support and life events for mental or psychiatric disturbance employed indices that measured the emotional affect side of mental health, the results of the present study appear to be consistent with the literature.

Therefore, it would be reasonable to conclude that the now widely accepted hypotheses of the significant roles of social support and life events should be investigated more thoroughly. First, it should be examined if the occurrence of life events and the level of social support are related only to transitions of emotional mood, but are not associated with the more persistent and observable behaviors in the wider social context. It is still possible, however, to hypothesize that the role of social support and life events are not only exert a direct influence on psychological distress but also affect social dysfunctioning indirectly through their impact upon the psychological dimension. Secondly, the present data seem to suggest that research in the stress process should carefully specify the social circumstances of the study populations under which life strain and other factors do and do not show significant relationships with health outcomes. The results of this study made strong suggestions regarding this point. It should be reasonable to assume that the social and psychological characteristics of the family members and familial structures should vary significantly across the two subsamples used in this study. Exactly what components of familial and personal characteristics differentiated the schizophrenic sample group from the others and was responsible for the differential patterns of relationships, could not be assessed in this study. Nevertheless, the discrepancies were substantial and their implications for future research in the stress process appeared to be significant.

Mastery was found to be significantly associated with the level of chronic strain (subjective burden) and to importantly moderate the relationship between objective burden and subjective burden. These results were the same for both diagnostic groups. Thus, community programs that assist family members in developing a sense of mastery or control over their environment may help them to cope with the potentially adverse effects of a mentally ill individual within the family unit.

It may be recalled from Chapter 6, that objective and subjective burden were more closely related when the respondents reported no or few life events than when larger numbers of life events were reported. This seems to suggest that when respondents experience increased numbers of stressful events, the patient's role performance is less relevant to the relative's perception of situational strain. Perhaps the significance of the objective burden may be eclipsed by the stresses arising from other events. When no or few stressful events are presented in the home, the patient's behavior may be a major source of situational strain among family members.

8.2. Limitations of Present Study

The conclusions that can legitimately be drawn from studies of this nature are limited by a number of factors, and it is important to specify the nature of these limitations.

8.2.1. Design Factor: Theoretical Model.

This research was guided by a theoretical perspective specified by the stress process model. The most severe restriction that should be attached to the interpretations of the results is associated with the arbitrary nature of the model used, in terms of the causal orderings between the model components. Readers should be reminded at this point that the primary goal of this study was to consider the linkage between family burden and the mental health of significant others. We have concluded that family burden was not the most important factor for the mental health status of family members. It could be equally plausable to state from the present data that the level of reported family burden was largely independent of the current status of the family member's mental health. However, mastery was found to be a significant factor for the mental health outcome. Readers should also be able to see that the level of mastery could be determined, at least partially, by previous mental health status and could also be affected by current mental health status. In short, coupled with the cross-sectional nature of the present data, the theoretical model adapted in this research caused the significant limitation of this study.

However, given the lack of analytic research on the psychological cost of living with and caring for a psychiatric patient at home, the results of their implications bear upon rather salient issues that have been largely ignored in previous studies.

Second, in this study, the choice of variables and measurement instruments were limited by the available data collected in the larger study, from which the data for this study were drawn. Among the many potentially important limitations, the most obvious is that the model applied did not include all of the components of the theoretical stress process model. Although many demographic, clinical and psychosocial variables were incorporated within the analyses, such factors as personality, coping skills, social networks, and support from professionals were not fully considered in the analyses. This may account for the fact that although multivariate models were used, a substantial amount of variance in the outcomes was left unaccounted for by the model.

8.2.2. Cross-sectional Nature of Data. Since the data used in this research were cross-sectional in nature, the ability to make causal inferences was limited. Given this inherent limitation, all possible competing explanations of the observed associations were considered. Throughout Chapters 6 and 7, admonitions concerning this problem were made, and attempts to provide alternative interpretations of the relationships were offered whereverit seemed necessary.

Moreover, the observed relationships (research questions) were drawn from a theoretical model. Although causal inferences cannot be made solely from the theoretical model, it did present guidelines for understanding observed associations in certain conceptual linkages. Since there is a paucity of knowledge concerning the relationship between family burden, the well-being of family members and the prognosis of the patients, the findings and the implications of this study should not be invalidated simply because of the cross-sectional nature of the data. Instead, the results have demonstrated the presence of associations and interactions, and have provided valuable information for the formulations of causal models in further research. At the same time, causal conclusions cannot be drawn from the present research, and such conclusions should be reserved until they are tested in carefully designed prospective studies.

8.2.3. Measurement of Variables. The major variables of this study have been measured by multi-item indices. The reliability and validity of each measure was discussed in Chapter 5. However, there are some issues that should be considered and some cautions that should be made concerning the limitations of the conclusions.

The central variables of this thesis are mental health and family burden. Mental health, the dependent variable, was assessed by a well-known instrument (GHQ). The GHQ has been widely used in community psychiatric and epidemiologic research. Although it is accepted as a reliable and valid instrument for the detection of psychiatric cases, the GHQ appears to have some limitations when used to assess chronic illness or the psychosocial status of persons who live under a chronic strain. This limitation of the GHQ occurs because it is designed to reflect a recent change or break from one's normal psychological or mental status rather than a chronic disturbance. Thus, while it can detect a departure from a normal state of functioning, a continuing psychological illness cannot be assessed adequately by the GHQ (e.g., Benjamin et al., 1982: Kirk and Saunders, 1979). For instance, Finlay-Jones and Murphy (1979) noted that the GHQ failed to detect subjects with severe, chronic, phobic anxiety, and DePaulo et al. (1980) reported that the instrument failed to screen more than a half of their sample patients with persisting illnesses.

This inherent limitation of the GHQ may account for the lower rate of probable psychiatric cases within the present sample. Living with a psychiatric patient and the strain imposed by their presence is a persistant rather than transient difficulty, therefore, the estimated rate of psychiatric disturbance in this study may have under-represented the true prevalence rate.

Some researchers have argued that the instrument should be used solely to measure the level of psychopathology on a continuous scale rather than to detect psychiatric cases within a given population (Cochrane et al., 1977; Corser and

Philip, 1978). Cochrane et al. (1977) concluded the following regarding the GHQ and the Langner (22 item) scale:

> Probably the most that can be claimed for scales such as these is that they assist in identifying populations with varying levels of psychopathology rather than identifying individuals as psychiatric cases...It is only possible to use these types of scales as a continuous measure of psychological disturbance rather than case identification (Cochrane et al., 1977:162).

In most of the analyses conducted in this study, the GHQ was used as a continuous measure of mental disturbance (Likert coding) rather than for case detection (GHQ coding). This may account for the fact that the GHQ was associated with more variables when it was coded by a Likert scale than when it was coded by the GHQ coding scheme. Since the majority of the conclusions were drawn from the analyses of the Likert scale, using the GHQ as a measure of mental health or mental illness may not severely jeopardize the generalizations of the results of this research.

Since there were no available standardized approaches to the measurement of objective burden, it was necessary to base decisions on an intuitive rather than an empirical foundation. Because of this, objective burden may not be adequately measured. Some additional components (such as financial difficulties, disruptions to family aspirations, and other factors) could possibly benefit from more direct methods of assessment. If the instrument that was used in this research were improved, the level of objective burden and its relationship to other variables might be higher than the present results show. Although previous research has also demonstrated that the relationship between the two measures of family burden is low, this may have resulted from the limitations inherent in the measurement of objective burden.

Apart from these factors, most variables were measured by widely accepted and reliable scales. The demographic and clinical variables of the patients were derived from hospital records, and there should be few concerns about these variables.

8.2.4. Analysis. Other methodological issues of interest are related to the statistical methods used in the analyses. First, although considerable efforts were made to examine non-linear associations, the present results are largely limited to linear associations, and the absence of expected relationships may be due to this focus upon the linear methods of statistical analysis.

The assessment of the relationship between the variables may contain another source of possible errors. The assessment of associations was based upon statistical significance, and therefore, it is possible that the observed significant relationships could have occurred by chance (Type I error). In this study, a significance level of .05 was chosen as the criterion for the statistical tests. Thus, there was a maximum error of 5% in rejecting the implied null hypotheses, i.e., there are no relationships between the variables. However, the power analyses (Appendix C) suggested that, in this study, this chance of error should be within an acceptable range, and most conclusions supporting the research hypotheses (i.e., there are significant relationships between variables) should not be seriously affected.

The inclusion of nominal and ordinal variables in regression, correlational, and discriminant function analyses may violate the recommended procedures for these statistical methods. However, it has been generally accepted that the use of these types of variables within such statistical processes, does not seriously jeopardize the results.

8.2.5. The Sample and Generalizability. Finally, the evaluation of the study's findings should be assessed in relation to the sample used bearing in mind the limitations for generalizing to other populations. The first obvious limitation is that the results cannot be applied to patient's relatives who are no longer reside with the patient. There was no information collected in this study that allowed for a comparison of relatives who did and did not live with their mentally ill members. Thus, the results of this study do not bear upon the available evidence regarding family member's "adaptation" to living with psychiatric patients. In order to address the issue of adaptation, further research should include control or comparison groups which would provide a basis of a direct assessment of the impact of the family burden upon psychological adjustment or mental status. The results of this study represent the extent to which the variation of family burden is associated with the variations in the levels of mental health among the individuals who reside with patients.

Second, non-respondents were compared to participants in terms of the patient's characteristics. There were no data available to compare the characteristics of responding and non-responding family members. This factor also limited a generalization of the present results. However, it should be recalled that there was only one significant difference between the patients whose significant others refused to participate in the study and the patients whose family members were included in the study. This difference was in the chronicity of the patient's illness. In the analysis, two major indicators of chronicity, the number of hospitalizations and the patient's psychopathology, were controlled. Therefore, there is some basis for confidence that the study's results and implications can be generalized for other individuals who currently live with a psychiatric patient.

Finally, some of the analyses suffered from limitations associated with sample size. Cyclical or curvilinear associations of family burden with a history of hospitalization or community tenure could have been more effectively assessed with a larger sample size. Nevertheless, the main associations hypothesized were investigated by analyses that did not appear to be seriously affected by sample size limitations.

In summation, although the results should be interpreted cautiously, the study provides information about an important health care issue that has received little attention hereto, and suggests avenues for further investigations.

APPENDIX A

DESCRIPTION OF SAMPLING AND DATA GATHERING PROCEDURES

All hospitals granted permission to access patient files and supplied one staff member from the medical records department to collect files of patients that conformed to the sampling criteria. There were 963 patient records that met the criteria and the necesary information was abstracted from each chart.

The next step of data collection - locating and contacting patients - was both time-consuming and difficult. City directories and telephone listings were used extensively to determine where the patient could be contacted. In this manner, all 963 patients were located. Of the total of 963 identified patients, 126 (13.1%) had moved from the catchment study area, 29 (3.0%) were deceased, and 70 (7.3%) were institutionalized. In addition, 27 were dropped from the list because they were screened by their psychiatrists as not being suitable for interview, and another 6 patients were removed because of language difficulties. Thus, the final list included 705 eligible ex-hospitalized patients who were living in the community within the catchment area of the study.

Contact letters were mailed to each of these 705 patients. This letter was signed by the Medical Director and the head of the Psychiatric Department of each hospital, and in the case of London Psychiatric Hospital and University Hospital, some letters were signed by the attending psychiatrist. The contact letter contained a description of the nature of the study and asked for their co-operation. About one week after the contact letter, each patient was contacted by telephone and asked if he/she was willing to be interviewed. If the patient agreed to participate a convenient time was arranged for the interview. At this time, a single interview with a significant other was arranged (if the patient was living with a significant other). If the patient refused to be interviewed, no further contacts were made.

Interviews were conducted by nine carefully selected and trained interviewers, who were mostly professionals in the health care and social services fields, i.e., public health nurses, medical interns, and social workers.. All of these nine interviewers completed a half-day training session provided by the Health Care Research Unit of The University of Western Ontario. They were provided with a summary of the study objectives and a standard procedure of contacting patients and their family members. During the training session, each interviewer practiced with an actual interview schedule (questionnaire), and therefore, became familiar with the entire interview procedure before the actual interviews.

In order to ensure the confidentiality to all participants , the interview cases were randomly assigned to each interviewer by the Health Care Research Unit. The interviewers received a copy of the intake sheet which contained the name and address of the patient and the family member who was to be interviewed. The original copy of the intake sheet was kept in a locked filing cabinent. When the interviewer completed the interview and brought back the sheet, it was immediately destroyed. Then an unique assigned number for each case was used for case identification. All other information that could be linked to the interview responses was destroyed at the end of the data gathering procedures.

Each questionnaire response was coded into a standardized coding system, which was checked by the project director. One of every four coded questionnaires were then recoded to check the reliability of the coding. An error rate of less than 2% was obtained and these errors were nonsystematic. Some key information was double coded and each was thoroughly verified by the project director. After this coding procedure was completed, all questionnaires were locked in a separate room.

APPENDIX B

QUESTIONNAIRE
AND
BSI SCALE

MENTAL HEALTH SERVICES AND COMMUNITY PLANNING

FORM B

SIGNIFICANT OTHER QUESTIONNAIRE

Sex: Male _____ Female _____

I. D. Number ______________________________

Address ______________________________

____

Telephone Number ______________________________

Date ______________________________

Interviewer ______________________________

Date Data Collected ______________________________

Completion Time ______________________________

Please circle or write in the appropriate answer. Do not write in the coding boxes in the right hand column.

CONFIDENTIAL

I. D. NUMBER ☐

First of all, I'm going to ask you some questions about yourself.

SECTION I. DEMOGRAPHIC CHARACTERISTICS

1. In what year were you born?

____

2. Where were you born?

City Province Country

IF RESPONDENT WAS NOT BORN IN CANADA:

a) In what year did you come to Canada?

____

3. Most persons have ties to some ethnic group or heritage background. What would you call your major ethnic tie or background?

____

4. Do you usually speak a language other than English at home?

1. yes - SPECIFY _______________
2. no

5. What is the highest grade you ever completed?

1. no formal schooling
2. 1 2 3 4 5 6 7 8
3. 9 10 11 12 13
4. university or college 1 2 3 4 5 6+
5. other - SPECIFY _______________

6. What is your highest degree or diploma obtained?

____

7. What is your relationship? ______________________________

1. spouse - how long have you been married? ______ years
2. parent
3. child
4. brother/sister
5. other - SPECIFY ________________________

SECTION II. HOUSEHOLD INFORMATION

8. We would like some information about the members of your household. Who else lives here? What is his/her relationship to you? his/her age? the number of years of schooling? usual occupation? current employment status?

IF A ROOMING HOUSE, RECORD NUMBER OF PEOPLE LIVING THERE ONLY.

	NAME	RELATION TO RESPONDENT	AGE	EDUCATION	USUAL OCCUPATION	EMPLOYMENT STATUS
HOUSEHOLD						

SECTION III. FAMILY RELATIONSHIPS

Now, I would like to ask you some questions about your family and relatives.

9. Not counting those relatives and family members that you live with, about how many live nearby, say within an hour's drive?

____

10. How often do you see them or talk to them on the telephone?

    1. daily
    2. once or twice a week
    3. once or twice a month
    4. once or twice a year
    5. I hardly ever see them or talk to them

11. How well do you think your family members and relatives understand you and any problems you may have? Do you think they understand you:

    1. very well?
    2. fairly well?
    3. not very well?
    4. not well at all?
    5. don't know?

12. How well do you think you understand them?

    1. very well
    2. fairly well
    3. not very well
    4. not well at all
    5. don't know

13. Realizing that all relatives and family members have problems in getting along with each other from time to time, how often would you say this happens to you?

    1. very frequently
    2. often
    3. sometimes
    4. only once in a while
    5. never

14. How often do your family members and relatives provide the emotional support that you think you need? Would you say:

1. very frequently?
2. often?
3. sometimes?
4. only once in a while?
5. never

15. In recent months, how enjoyable have you found being with your relatives and family members?

1. very enjoyable
2. somewhat enjoyable
3. not very enjoyable
4. not at all enjoyable
5. not been with relatives and family in recent months

SECTION IV. SOCIAL RELATIONSHIPS

Now, I would like to ask you some questions about your friends and acquaintances.

16. Not counting the people you live with, could you tell me how many friends and acquaintances live nearby, say within an hour's drive?

____

17. On the average, how often do you see or talk to them?

1. daily
2. once or twice a week
3. once or twice a month
4. once or twice a year
5. I hardly ever see or talk to them

18. How well do you think your friends and acquaintances understand you and any problems you might have? Do you think they understand you:

1. very well?
2. fairly well?
3. not very well?
4. not well at all?
5. don't know?

19. How well do you think you understand them?

    1. very well ?
    2. fairly well ?
    3. not very well ?
    4. not well at all?

20. Realizing that friends and acquaintances have problems in getting along with each other from time to time, how often would you say this happens to you?

    1. very frequently
    2. often
    3. sometimes
    4. only once in a while
    5. never

21. In recent months, how enjoyable have you found being with your friends and acquaintances?

    1. very enjoyable
    2. somewhat enjoyable
    3. not very enjoyable
    4. not at all enjoyable
    5. not been with friends and acquaintances in recent months

Now, I would like to ask you about how much help you can rely on from your family, relatives and friends.

22. First, how much can you rely on your family or relatives for help in doing things when you need it, such as assisting with household tasks, getting places, or even lending money?

    1. a great deal
    2. little
    3. not at all

23. What about your friends? How much can you rely on them when you need it?

    1. a great deal
    2. little
    3. not at all

ASK ONLY IF "NOT AT ALL" TO BOTH QUESTIONS 22 AND 23

24. Is there anyone at all you can rely on for help in doing things when you need it, such as assisting on the job, helping with the household tasks, providing personal or family care (e.g. babysitting) or even lending money?

1. yes
2. no

IF YES:

a) What is this person's relationship to you?

____

b) How often can you rely on this person?

1. always
2. sometimes
3. rarely
4. never

ASK EVERYONE:

Now, I'd like to ask you four short questions about the neighbourhood where you live.

25. In general, would you say the people in your neighbourhood are:

1. very friendly?
2. somewhat friendly?
3. neither friendly or unfriendly?
4. somewhat unfriendly?
5. very unfriendly?
6. don't know

26. How often do you usually visit with your neighbours for a half hour or more?

1. every day or almost every day
2. at least once a week
3. at least once a month
4. once a year
5. less than once a year

27. About how many neighbours would you consider to be your personal friends?

____

28. Can you count on a neighbour for help in doing things when you may need it, such as jobs around the house, personal or family care (e.g. babysitting), or lending something?

1. no
2. rarely or for a few minor things
3. for some major things
4. for all major things
5. don't know

SECTION VII. SOCIAL ACTIVITIES

29. I'm interested in finding out how you spend your spare time. That is, I would like to know the types of things you do for enjoyment and relaxation. Can you tell me how often you do the following activities?

How often do you do this?

0. never
1. a few times a year
2. about once a month
3. about 2-3 times a month
4. about once a week
5. almost every day

	0	1	2	3	4	5
a) attending sporting events	0	1	2	3	4	5
b) participate in team sports	0	1	2	3	4	5
c) fishing, hunting, hiking, camping	0	1	2	3	4	5
d) swim, tennis, bicycling, golf	0	1	2	3	4	5
e) go to movies, concert, theatre	0	1	2	3	4	5
f) go to meetings (clubs, unions, etc.)	0	1	2	3	4	5
g) go to church (religious activities)	0	1	2	3	4	5
h) go to classes, lectures	0	1	2	3	4	5
i) go to nightclubs, bars, dancing	0	1	2	3	4	5
j) visit friends, relatives	0	1	2	3	4	5
k) community centre activities	0	1	2	3	4	5
l) read at library	0	1	2	3	4	5
m) go on picnics, drives	0	1	2	3	4	5
n) take walks (parks, neighbourhood)	0	1	2	3	4	5
o) sit in park, porch, backyard	0	1	2	3	4	5
p) gardening, work around yard	0	1	2	3	4	5
q) go shopping	0	1	2	3	4	5

30. Now, I am going to read you a few statements about yourself. Please tell me whether each statement is: very true of you, somewhat true of you or not at all true of you.

   a) I am a person who feels uncomfortable in the presence of people I don't know.

      1. very true of me
      2. somewhat true of me
      3. not at all true of me

   b) I am a person who is most comfortable when I'm alone, away from people.

      1. very true of me
      2. somewhat true of me
      3. not at all true of me

   c) I am a person who goes out only when it's necessary.

      1. very true of me
      2. somewhat true of me
      3. not at all true of me

SECTION VI. EMPLOYMENT

The next thing that I would like to talk to you about deals with working.

31. First of all, are you presently employed, a housewife, a student or retired?

      1. employed full-time - GO TO QUESTION 33
      2. employed part-time - GO TO QUESTION 33
      3. housewife - GO TO QUESTION 32
      4. student - GO TO QUESTION 32
      5. retired - GO TO QUESTION 32
      6. unemployed - GO TO QUESTION 32
      7. workshop (hospital related) - GO TO QUESTION 32

32. Have you ever been employed over the last five years?

      1. yes
      2. no - GO TO QUESTION 32 a)

   a) If you have not been employed over the last five years, what was your last job called? What kind of work did it usually involve?

33. Can you tell me about any jobs you have had over the last five years. I would like to know what kind of work you did and when you had these jobs. Let's start with the most recent job that you had. What was it called? What kind of work did it usually involve?

From	To	What Kind of Work Did You Do?	Reason for Leaving

Now, I'd like to ask you a few questions about ____________________.

34. Has ____________ been employed since returning from his (her) last stay in the hospital? (STAY MEANS MORE THAN TWO DAYS)

1. yes
2. no - GO TO QUESTION 36

35. Is he (she) working now?

1. yes, full-time
2. yes, part-time
3. no

36. How interested do you think ________ is in getting a job?

1. He (she) is actively looking for a job.
2. He (she) is fairly active in looking for a job.
3. He (she) is not looking for a job but is still interested.
4. He (she) is not interested in a job.

SECTION VII. HOSPITALIZATION

This section deals with questions about __________'s treatment and hospitalization.

37. Could you tell me about __________'s first hospitalization for psychiatric reasons and any others since then?

	Which Hospital	When was he/she there? (year)	For how long?	Do you think his/her stay was: 1. too long? 2. just right? 3. too short?
First Hospitalization				
Second Hospitalization				
Third Hospitalization				
Fourth Hospitalization				
Fifth Hospitalization				
Sixth Hospitalization				
Seventh Hospitalization				

38. Then his (her) total number of hospitalizations for psychiatric reasons are __________, with his (her) last admission being _______________?

39. Is __________ now on any medication for emotional problems or upsets?

1. yes, regularly without being reminded
2. yes, regularly with reminder
3. infrequently
4. almost never
5. never
6. don't know

40. Compared with when __________ was last released from hospital, how is he (she) doing now? Would you say?

1. much better?
2. somewhat better?
3. about the same?
4. somewhat worse?
5. much worse?

41. Since __________'s last hospitalization, how often have you felt that he (she) should be back in hospital?

1. frequently
2. a few times
3. never

42. Have you felt that there should be more treatment or assistance available to __________ in the community? Would you say there should be:

1. much more?
2. somewhat more?
3. no more?

43. Now, I am going to read a list of services or programs that are available to former patients in some communities. For each, would you tell me whether you are aware of such a program in this community and how important it is to have such a service.

	Does it exist?		Importance		
	Yes	No	Very Useful	Somewhat Useful	Not at all Useful
a) vocational or retraining programs	1	2	3	4	5
b) emotional counselling	1	2	3	4	5
c) self-help programs	1	2	3	4	5
d) recreational programs	1	2	3	4	5
e) financial assistance/ guidance	1	2	3	4	5
f) social programs	1	2	3	4	5
g) other (SPECIFY) __________	1	2	3	4	5

44. Have you had any contact with the following services or organizations?

Have you had contact with this service? (a)	How often have you used it? (b)	How helpful did you find the service received? (c)
(✓) if yes	1. once 2. twice 3. three times 4. four times or more	1. very helpful 2. somewhat helpful 3. not at all helpful

	a	b	c
a) Social Services (welfare, mother's allowance, disability)			(a)
b) Unemployment Insurance or Canada Manpower			(b)
c) Alcoholics Anonymous			(c)
d) Legal Aid			(d)
e) Family and Children's Services			(e)
f) Job Training - SPECIFY ________________			(f)
g) Probation Office			(g)
h) Salvation Army			(h)
i) Family Counselling Centre			(i)
j) Contact Crisis Centre			(j)
k) Mission Services			(k)
l) Recovery Incorporated			(l)
m) Other - SPECIFY ________________			(m)

45. Has _________ had any trouble with the police?

1. yes - how many times? ____________________

2. no

IF YES: When was the last time? ____________________

46. Has _________ spent any time in jail?

1. yes - how many times? ____________________

2. no

IF YES: When was the last time? ____________________

47. I am going to read some statements. For each of them please tell me how much you agree with the statement using a scale of one to five, where one stands for "strongly agree" and five stands for "strongly disagree".

1. strongly agree
2. agree
3. neither agree nor disagree
4. disagree
5. strongly disagree

a) When the family needs help, there is really no place to go.	1	2	3	4	5
b) Most agencies take the time to help family members.	1	2	3	4	5
c) Hospital staff usually consider family circumstances before discharging the patient.	1	2	3	4	5
d) Hospital staff usually consider family circumstances before admitting the patient.	1	2	3	4	5
e) If the family needs help, I would know where to go to get some.	1	2	3	4	5
f) Hospital staff go out of their way to be supportive to family members.	1	2	3	4	5
g) Once they return home, ex-patients can get all the help or treatment they need from community agencies.	1	2	3	4	5
h) Any help an ex-patient needs can usually be provided by his family or friends.	1	2	3	4	5

48. As a result of ____________'s illness, have you or any member of your household had contact with any of the following professionals? How useful was that contact? Would you say it was "very useful", "somewhat useful" or "not useful at all"?

	Contact		Usefulness		
	Yes	No	Very Useful	Somewhat Useful	Not At All Useful
a) your family doctor	1	2	3	4	5
b) a social worker	1	2	3	4	5
c) a psychiatric nurse	1	2	3	4	5
d) a psychiatrist	1	2	3	4	5
e) a public health nurse	1	2	3	4	5
f) other (SPECIFY) ____________	1	2	3	4	5

49. Have you or another household member wanted advice or help, other than that listed above, which for some reason could not be obtained?

1. yes

a) What advice or help?

____

2. no

IF YES:

b) Has this happened:

1. once?
2. a few times?
3. quite often?

Now I am going to ask a few questions about how things are going in the family.

50. First of all, have ________'s problems resulted in any of the following changes? Did any family members have to:

a) stop working? 1. yes 2. no

b) change working hours? 1. yes 2. no

c) start working? 1. yes 2. no

SPECIFY WHO __________

51. Has anyone had to miss work or school to be with or help __________?

1. yes, often
2. yes, a few times
3. no

ASK ONLY OF RESPONDENTS WHO HAVE CHILDREN. IF NO CHILDREN, GO TO QUESTION 54.

52. Now, we would like to ask about the overall emotional adjustment of your children. Would you say they are:

1. very well adjusted?
2. quite well adjusted?
3. poorly adjusted?

53. Have you ever felt the need to seek counselling or emotional help for any of your children:

1. yes
2. no

IF YES,

a) Where did you go for help?

____

54. We should like to know if you have had any medical complaints, and how your health has been in general, over the past few weeks. Please answer all the questions on the following pages simply by circling the number of the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past. It is important to answer all the questions.

Have you recently:

a)	been able to concentrate on whatever you're doing?	1 better than usual	2 same as usual	3 less than usual	4 much less than usual
b)	lost much sleep over worry?	1 not at all	2 [illegible]ore than usual	3 rather worse than usual	4 much more than usual
c)	been having restless, disturbed nights?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
d)	been managing to keep yourself busy and occupied?	1 more so than usual	2 no more than usual	3 rather less than usual	4 much less than usual
e)	been getting out of the house as much as usual?	1 more than usual	2 same as usual	3 less than usual	4 much less than usual
f)	been managing as well as most people would in your shoes?	1 better than most	2 about the same	3 rather less well	4 much less than usual
g)	felt on the whole you were doing things well?	1 better than usual	2 about the same	3 rather less well	4 much less well

54. (continued). Have you recently:

h)	been satisfied with the way you've carried out your tasks?	1 better than usual	2 about same as usual	3 less satisfied than usual	4 much less satisfied
i)	been able to feel warmth and affection for those near to you?	1 better than usual	2 about same as usual	3 less well than usual	4 much less well
j)	been finding it easy to get on with other people?	1 better than usual	2 about same as usual	3 less well than usual	4 much less well
k)	spent much time chatting with people?	1 more time than usual	2 about same as usual	3 less than usual	4 much less than usual
l)	felt that you are playing a useful part in things?	1 more so than usual	2 same as usual	3 less useful than usual	4 much less useful
m)	felt capable of making decisions about things?	1 more so than usual	2 same as usual	3 less so than usual	4 much less capable
n)	felt constantly under strain?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
o)	felt you couldn't overcome your difficulties?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
p)	been finding life a struggle all the time?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual

54. (continued)

q) been able to enjoy your normal day-to-day activities?	1 more so than usual	2 same as usual	3 less so than usual	4 much less than usual
r) been taking things hard?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
s) been getting scared or panicky for no good reason?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
t) been able to face up to your problems?	1 more so than usual	2 same as usual	3 less able than usual	4 much less able
u) found everything getting on top of you?	1 not at all	2 no more than usual	3 less able than usual	4 much more than usual
v) been feeling unhappy and depressed?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
w) been losing confidence in yourself?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
x) been thinking of yourself as a worthless person?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
y) felt that life is entirely hopeless?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
z) been feeling hopeful about your own future?	1 more so than usual	2 about same as usual	3 less so than usual	4 much less hopeful

54. (continued)

aa)	been feeling reasonably happy, all things considered?	1 more so than usual	2 about same as usual	3 less so than usual	4 much less than usual
bb)	been feeling nervous and strung-up all the time?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
cc)	felt that life isn't worth living?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual
dd)	found at times you couldn't do anything because your nerves were too bad?	1 not at all	2 no more than usual	3 rather more than usual	4 much more than usual

55. Now, I would like to ask you some questions about ________'s adjustment since his/her release from hospital.

	Often	Sometimes	Never
a) Has ________ been any trouble at night (noisy, wandering)	1	2	3
b) Has ________'s safety been a source of worry?	1	2	3
c) Has ________ caused difficulty by being uncooperative?	1	2	3
d) Has ________ caused anxiety about the safety of others?	1	2	3
e) Is ________ a strain in relying and depending on people too much?	1	2	3
f) Has his/her restlessness, noisiness or talking been annoying to you or others in the household?	1	2	3
g) Has ________ been a problem because of rude or objectional behaviour?	1	2	3
h) Has ________ caused anxiety by speaking or behaving oddly, or expressing unusual or unreasonable ideas?	1	2	3
i) Has ________ caused any trouble with the neighbours?	1	2	3
j) How frequently is ________ a burden on his family or household?	1	2	3

56. In describing ___________'s community adjustment, circle the number of the answer that best describes his/her behaviour during the last month. If you are unsure of your answer, answer to the best of your ability. Please answer every question.

During the last month has he/she:

a) made you feel wanted and needed?	1 never	2 rarely	3 sometimes	4 usually	5 always
b) become upset over small things?	1 never	2 rarely	3 sometimes	4 often	5 usually
c) forgotten to do important things?	1 never	2 rarely	3 sometimes	4 often	5 usually
d) become drunk or intoxicated?	1 never	2 rarely	3 sometimes	4 often	5 usually
e) shown affection toward you?	1 never	2 rarely	3 sometimes	4 usually	5 always
f) shown emotional instability (anger one minute and friendly the next)?	1 never unstable mood	2 rarely unstable mood	3 sometimes unstable mood	4 often unstable mood	5 always unstable mood
g) gone ahead and done things expected of him/her without having to be reminded?	1 always	2 usually	3 sometimes	4 rarely	5 never
h) been drinking to excess?	1 never	2 rarely	3 sometimes	4 often	5 usually
i) shown interest in what you say?	1 never	2 rarely	3 sometimes	4 usually	5 always
j) been overly suspicious of you?	1 never	2 rarely	3 sometimes	4 usually	5 always
k) been able to "stay with" tasks he/she starts without becoming preoccupied or lost in thought?	1 never	2 rarely pre-occupied	3 sometimes pre-occupied	4 usually pre-occupied	5 always pre-occupied

56. (continued)

	1	2	3	4	5
l) had a drinking problem that upset his/her relationship with family members?	never	rarely	sometimes	often	usually
m) been able to talk it through when you're angry with each other?	never	rarely	sometimes	usually	always
n) said that things looked discouraging or hopeless?	never	rarely	sometimes	often	usually
o) lost tract of time?	never	rarely	sometimes	often	usually
p) shown consideration for you?	never	rarely	sometimes	usually	always
q) acted restless and tense?	rarely tense	sometimes tense	often tense	usually tense	always tense
r) needed supervision or guidance from the family?	never	rarely	sometimes	often	usually
s) gotten along with family members as well as others do with their families?	much worse	somewhat worse	about same	somewhat better	much better
t) lost his/her temper?	never	rarely	sometimes	often	usually
u) had difficulty falling or remaining asleep	never	sometimes	often	usually	always
v) been more concerned about others than about you?	always	usually	sometimes	rarely	never
w) been nervous?	strongly disagree	disagree	not sure	agree	strongly agree

16. (continued) During the last month, has he/she:

x) been in a daze, bewildered?	1 never	2 rarely	3 sometimes	4 often	5 usually
y) spent his/her free time with family members?	1 rarely	2 sometimes	3 often	4 usually	5 always
z) talked about being afraid of people or things?	1 never	2 rarely	3 sometimes	4 often	5 usually
aa) seemed off in a world by himself/herself?	1 strongly disagree	2 disagree	3 not sure	4 agree	5 strongly agree
bb) been able to accept your telling him / her when you're angry with him/her	1 never	2 rarely	3 sometimes	4 usually	5 always
cc) attempted to control what you think and do?	1 never	2 rarely	3 sometimes	4 usually	5 always
dd) moved very slowly?	1 never	2 rarely	3 sometimes	4 usually	5 always
ee) made it clear what he/she expects of you?	1 never	2 rarely	3 sometimes	4 usually	5 always
ff) been bother by feelings of guilt?	1 never	2 rarely	3 sometimes	4 often	5 usually

gg) attended the activities of organizations or social clubs?

1. Does not attend any activities outside the home.
2. Belongs to none, but occasionally attends.
3. Belongs to at least one organization and sometimes attends.
4. Belongs to at least one and attends about once a month.
5. Belongs to at least one and attends more than once a month.

hh) participated in the activities of organizations or social clubs?

1. never attends
2. attends but doesn't participate
3. attends and rarely participates
4. attends and sometimes participates
5. attends and participates actively

56. (continued) During the last month, has he/she:

ii) had few interests outside the home or a wide variety of outside interests?

1. no outside interests
2. rarely involved in outside interests
3. sometimes involved in outside interests
4. moderate number of outside interests
5. great many outside interests

jj) taken part in recreational activities outside the home (such as movies, dances, bowling, sports, etc.)?	1 never	2 rarely	3 sometimes	4 usually	5 always
kk) visited and talked with people who came to the home?	1 never	2 rarely	3 sometimes	4 usually	5 always
ll) prepared the evening meal for members of the household?	1 never	2 rarely	3 sometimes	4 usually	5 always
mm) done the dusting, sweeping, and household cleaning?	1 never	2 rarely	3 sometimes	4 usually	5 always
nn) prepared breakfast for members of the household?	1 never	2 rarely	3 sometimes	4 usually	5 always
oo) bought things you can't afford?	1 always	2 usually	3 sometimes	4 rarely	5 never
pp) done the laundry, ironing, and clothes mending for members of the household?	1 never	2 rarely	3 sometimes	4 usually	5 always
qq) spent his/her money wisely?	1 never	2 rarely	3 sometimes	4 usually	5 always
rr) done the grocery shopping for the household?	1 never	2 rarely	3 sometimes	4 usually	5 always
ss) helped with chores around the house?	1 never	2 rarely	3 sometimes	4 often	5 usually

Complete this section if you are rating a person who is currently employed or who is temporarily unemployed. Skip the next six items if you are rating a person who is not normally expected to be employed (a housewife, a student, a retired person) - GO TO QUESTION 58

57. tt) During the last month, has he/she looked for or obtained employment?

1. Unemployed, doesn't want to look for work.
2. Unemployed, wants to work but doesn't seek it.
3. Occasionally goes out and looks for work.
4. Frequently goes out and looks for work.
5. Is presently employed.

uu) Has he/she earned an adequate amount of money during the past month?

1. Earns no money.
2. Earns enough money to take care of his/her personal needs.
3. Earns enough money to support only himself/herself.
4. Earns enough money to partially support a family.
5. Earns enough to adequately support a family.

vv) About how much is he/she earning now?

1. Earns no money.
2. Earns less than $25.00 per week.
3. Earns between $25.00 to $75.00 per week.
4. Earns between $75.00 to $150.00 per week.
5. Earns over $150.00 per week.

During the last month, has he/she:

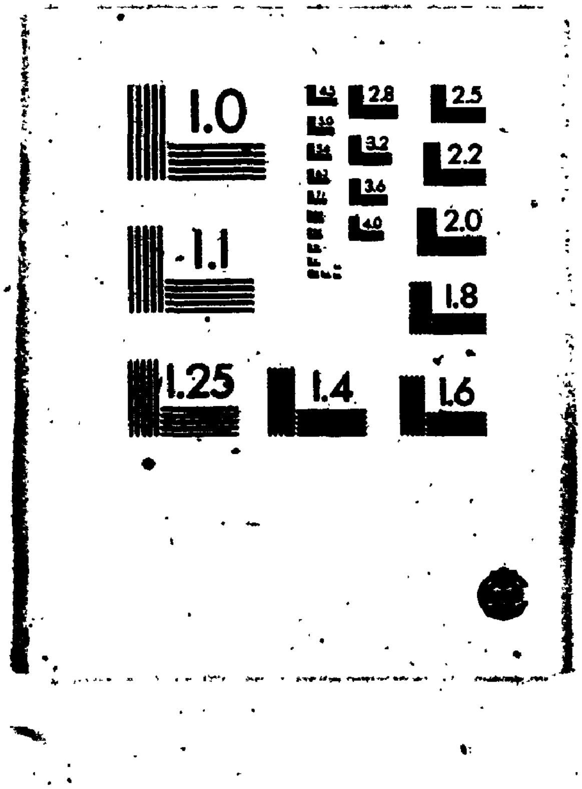
		1	2	3	4	5
ww)	looked forward to going to work every day?	not employed	never	rarely	sometimes	usually
xx)	wanted to change jobs, even with no increase in pay?	not employed	usually	sometimes	rarely	never
yy)	complained about his/her job or the people he/she works with?	not employed	usually	sometimes	rarely	never

Answer these questions only if you have any children. If you do not have any children go to QUESTION 59.

58. During the last month, has he/she:

zz)	approached the children inconsistently (too firm one time, too lenient the next)?	1 usually	2 often	3 sometimes	4 rarely	5 never
aaa)	kept his/her promises to the children?	1 never	2 rarely	3 sometimes	4 usually	5 always
bbb)	shown affection toward the children?	1 never	2 rarely	3 sometimes	4 usually	5 always
ccc)	known the right thing to do when disciplining children?	1 never	2 rarely	3 sometimes	4 usually	5 always
ddd)	the children have ignored him/her when he/she attempted to discipline them?	1 always	2 usually	3 sometimes	4 rarely	5 never
eee)	the children have shown respect for what he/she says?	1 never	2 rarely	3 sometimes	4 usually	5 always

3 OF/DE 3



59. Now, I'd like to ask you some questions about yourself. Please tell me how strongly you agree or disagree with each statement.

1. strongly agree
2. mildly agree
3. neither agree nor disagree
4. mildly disagree
5. strongly disagree

a)	I have little control over the things that happen to me.	1	2	3	4	5
b)	There is really no way I can solve some of the problems I have.	1	2	3	4	5
c)	There is little I can do to change many of the important things in my life.	1	2	3	4	5
d)	I often feel helpless in dealing with the problems of life.	1	2	3	4	5
e)	Sometimes I feel that I am being pushed around in life.	1	2	3	4	5
f)	What happens to me in the future mostly depends on me.	1	2	3	4	5
g)	I can do just about anything I really set my mind to.	1	2	3	4	5

60. Now we would like to know something about your relationships with other people. For each statement please tell me how closely the statement describes your relationships.

1. very much like this
2. much like this
3. somewhat like this
4. not very much like this
5. not at all like this

a)	When I'm busy with my friends I feel completely able to relax and be myself.	1	2	3	4	5
b)	I share the same approach to life that many of my friends do.	1	2	3	4	5
c)	Although I have a lot of friends, they don't know one another well.	1	2	3	4	5
d)	People who know me trust me and respect me.	1	2	3	4	5
e)	No matter what happens, I know that my family will always be there for me should I need them.	1	2	3	4	5
f)	When I want to go out to do things I know that many of my friends would enjoy doing these things with me.	1	2	3	4	5
g)	I have at least one friend that I can tell anything to.	1	2	3	4	5
h)	Sometimes I'm not sure if I can completely rely on my family.	1	2	3	4	5
i)	My friends do not always approve of my attitudes and lifestyle.	1	2	3	4	5
j)	My family lets me know they think I'm a worthwhile person.	1	2	3	4	5

1. very much like this
2. much like this
3. somewhat like this
4. not very much like this
5. not at all like this

60.	k)	I feel very close to some of my friends.	1	2	3	4	5
	l)	People in my family have confidence in me.	1	2	3	4	5
	m)	There are some problems I can't share with anyone.	1	2	3	4	5
	n)	People in my family provide me with help in finding solutions to my problems.	1	2	3	4	5
	o)	People who know me think I am good at what I do.	1	2	3	4	5
	p)	My friends don't take the time to talk over my problems when I need to.	1	2	3	4	5
	q)	I know my family will always stand by me.	1	2	3	4	5
	r)	Even when I am with my friends I feel alone.	1	2	3	4	5

61. Now, I would like to know something about various events that may have taken place in your immediate family during the last six months. Can you tell me if any of the following events have happened to you or a member of your immediate family? If they have occurred, can you tell me how stressful you found it to be personally? Were these events:

1. not at all stressful
2. somewhat stressful
3. very stressful

FOR EACH LIFE EVENT, CHECK YES OR NO. ENTER STRESS VALUE OF 1, 2 OR 3 FOR THOSE EVENTS THAT OCCURRED.

Did someone in your family:

	Yes	No	Stress Value
a) stop their formal schooling?	____	____	____
b) get married?	____	____	____
c) start their first job?	____	____	____
d) go on strike at work?	____	____	____
e) lose their job?	____	____	____
f) change jobs?	____	____	____
g) become unemployed?	____	____	____
h) have other work related difficulties?	____	____	____
i) lose someone dear by death?	____	____	____
j) suffer a family break-up?	____	____	____
k) go on welfare or mother's allowance?	____	____	____
l) have difficulties with their boss?	____	____	____
m) have to be hospitalized for emotional problems?	____	____	____
n) have financial problems?	____	____	____
o) move to a different home or apartment?	____	____	____
p) get into trouble with the law?	____	____	____
q) experience serious illness or injury?	____	____	____

61. (continued)

1. not at all stressful?
2. somewhat stressful?
3. very stressful?

	Yes	No	Stress Value
r) become pregnant or have a baby?	____	____	______
s) have a son or daughter leave home?	____	____	______
t) get divorced or separated?	____	____	______
u) other (SPECIFY) __________	____	____	______

62. We would like to know your thoughts and feelings about yourself and the people who matter to you. After reading each item, please check the box below that best applies to you.

DEBBIE	LESLIE	ROBIN
People are devoted to Debbie and love her. They always support her, listen to her, and sympathize with her. They care about her a lot.	People are usually fond of Leslie. They can be sympathetic, but do not always listen to her or support her.	People are not devoted to Robin. They do not support her, listen to her, or sympathize with her. They do not care about her or love her.

Check one box.

☐ I'm like Debbie.

☐ I'm halfway between Debbie and Leslie.

☐ I'm like Leslie.

☐ I'm halfway between Leslie and Robin.

☐ I'm like Robin.

JANE	SONIA	VIKI
People rarely let Jane know that she is wanted. She does not really make a difference to them and they are rarely concerned about her. She does not belong and she does not matter to them.	People sometimes let Sonia know that she matters. Sometimes they think that she makes a difference to them.	People constantly let Viki know that she is wanted. She really makes a difference to them. They are concerned about her and she matters. She really belongs.

Check one box.

☐ I'm like Jane.

☐ I'm halfway between Jane and Sonia.

☐ I'm like Sonia.

☐ I'm halfway between Sonia and Viki.

☐ I'm like Viki.

MICHELLE

People always think that Michelle is a friend. They like talking with her and spending a lot of time with her. She always has lots of people around. She is seldom alone and is usually in a crowd.

JILL

Jill has friends and is a good person to be with, but she isn't always surrounded by people.

PAULA

Paula is mostly alone. She rarely sees people or spends time with them. She is most often by herself.

Check one box.

☐ I'm like Michelle.

☐ I'm halfway between Michelle and Jill.

☐ I'm like Jill.

☐ I'm halfway between Jill and Paula.

☐ I'm like Paula.

JENNY

Jenny rarely has a close friend that she can count on. She does not know that they will always be there for her to lean on and she does not give them the same support.

DOLORES

Dolores sometimes has a close friend who is there for her and who she can count on.

SHELLEY

Shelley always has a close friend that she can count on. She does not have to worry about whether they will be there for her to lean on. She gives them the same support.

Check one box.

☑ I'm like Jenny.

☐ I'm halfway between Jenny and Dolores.

☐ I'm like Dolores.

☐ I'm halfway between Dolores and Shelley.

☐ I'm like Shelley.

CARRIE	RHODA	SHARON
People believe that Carrie will make the right decisions and do the right things. They have confidence and faith in her.	Some people have confidence and faith in Rhoda. Sometimes they think that she will make the right decisions and do the right things.	People rarely believe that Sharon will make the right decisions or do the right things. They hardly ever have faith or confidence in her.

Chec[illegible]ne box.

☐ I'm like Carrie.

☐ I'm halfway between Carrie and Rhoda.

☐ I'm like Rhoda.

☐ I'm halfway between Rhoda and Sharon.

☐ I'm like Sharon.

ANNE	JULIE	MARY
Anne rarely spends time with other people. When she wants to do things, she hardly even has anyone to do things with her.	Julie sometimes spends time with other people. When she wants to do things, sometimes there are other people around to do things with her.	Mary is almost always with other people. Whenever she wants to do things, she knows that one or another of her friends will be there to do things with her.

Check one box.

☐ I'm like Anne

☐ I'm halfway between Anne and Julie

☐ I'm like Julie

☐ I'm halfway between Julie and Mary

☐ I'm like Mary

39.

RUTH	GILLIAN	JEAN
Ruth knows that people care a lot about her. She has their attention and support.	Gillian sometimes has people's attention and support. She sometimes feels that they care about her.	Jean is uncertain that people care about her. She gets little attention, or support.

Check one box.

☐	☐	☐	☐	☐
I'm like Ruth	I'm halfway between Ruth and Gillian	I'm like Gillian	I'm halfway between Gillian and Jean	I'm like Jean

PHYLLIS	MARTHA	TINA
Phyllis is rarely admired and praised. There are very few people who think Phyllis is important or worthy.	Martha is admired and praised by some people at some time. She is not always being reminded of her worth.	Tina is constantly being admired by people. They always praise her and think that she is important and worthy.

Check one box.

☐	☐	☐	☐	☐
I'm like Phyllis.	I'm halfway between Phyllis and Martha.	I'm like Martha	I'm halfway between Martha and Tina.	I'm like Tina.

BSI

Name: ______________________ Patient No.: __________ Technician __________

Location: ______________________ Visit No.: __________ Mode: S-R ______ Nar ____

Age: ______ Sex: M ____ F ______ Date: ______ Remarks: ______________________

INSTRUCTIONS

Below is a list of problems and complaints that people sometimes have. Read each one carefully, and select one of the numbered descriptors that best describes HOW MUCH DISCOMFORT THAT PROBLEM HAS CAUSED YOU DURING THE PAST ____________ INCLUDING TODAY. Place that number in the open block to the right of the problem. Do not skip any items, and print your number clearly. If you change your mind, erase your first number completely. Read the example below before beginning, and if you have any questions please ask the technician.

EXAMPLE

HOW MUCH WERE YOU DISTRESSED BY:

Ex. Body Aches Ex. Answer 3

Descriptors
- 0 Not at all
- 1 A little bit
- 2 Moderately
- 3 Quite a bit
- 4 Extremely

HOW MUCH WERE YOU DISTRESSED BY:

Descriptors
- 0 Not at all
- 1 A little bit
- 2 Moderately
- 3 Quite a bit
- 4 Extremely

HOW MUCH WERE YOU DISTRESSED BY:

1. Nervousness or shakiness inside ☐
2. Faintness or dizziness ☐
3. The idea that someone else can control your thoughts ☐
4. Feeling others are to blame for most of your troubles ☐
5. Trouble remembering things ☐
6. Feeling easily annoyed or irritated ☐
7. Pains in heart or chest ☐
8. Feeling afraid in open spaces ☐
9. Thoughts of ending your life ☐
10. Feeling that most people cannot be trusted ☐
11. Poor appetite ☐
12. Suddenly scared for no reason ☐
13. Temper outbursts that you could not control ☐
14. Feeling lonely even when you are with people ☐
15. Feeling blocked in getting things done ☐
16. Feeling lonely ☐
17. Feeling blue ☐
18. Feeling no interest in things ☐
19. Feeling fearful ☐
20. Your feelings being easily hurt ☐
21. Feeling that people are unfriendly or dislike you ☐
22. Feeling inferior to others ☐
23. Nausea or upset stomach ☐
24. Feeling that you are watched or talked about by others ☐
25. Trouble falling asleep ☐
26. Having to check and doublecheck what you do ☐
27. Difficulty making decisions ☐
28. Feeling afraid to travel on buses, subways, or trains ☐
29. Trouble getting your breath ☐
30. Hot or cold spells ☐
31. Having to avoid certain things, places, or activities because they frighten you ☐
32. Your mind going blank ☐
33. Numbness or tingling in parts of your body ☐
34. The idea that you should be punished for your sins ☐
35. Feeling hopeless about the future ☐
36. Trouble concentrating ☐
37. Feeling weak in parts of your body ☐
38. Feeling tense or keyed up ☐
39. Thoughts of death or dying ☐
40. Having urges to beat, injure, or harm someone ☐
41. Having urges to break or smash things ☐
42. Feeling very self-conscious with others ☐
43. Feeling uneasy in crowds ☐
44. Never feeling close to another person ☐
45. Spells of terror or panic ☐
46. Getting into frequent arguments ☐
47. Feeling nervous when you are left alone ☐
48. Others not giving you proper credit for your achievements ☐
49. Feeling so restless you couldn't sit still ☐
50. Feelings of worthlessness ☐
51. Feeling that people will take advantage of you if you let them ☐
52. Feelings of guilt ☐
53. The idea that something is wrong with your mind ☐

APPENDIX C

SAMPLE SIZE CONSIDERATION: POWER ANALYSIS OF REGRESSION

Some discussion must be devoted to the question of sample size in order to ensure the reliability of the study findings. Statistical power will be estimated given a fixed sample size and statistical significance criterion. Because of the possibility of losing cases due to missing data on some variables, statistical power will be estimated based upon a sample size of 200. Statistical power is defined by Cohen (1977:4) as follows:

> The power of a statistical test of a null hypotheses is the probability that it will lead to the rejection of the null hypothesis, ie., the probability that it will result in the conclusion that the phenomenon exists.

Following the conventional level of significance of .05, the power of regressional procedures, which will be central to the data analyses of this study, will be examined.

To test the power of regression analysis, Cohen, (1977:44) introduces the L value as a function of two paremeters;

(1) F, statistical effect size, expressed as

$$\frac{R^2}{1 - R^2}$$

where, R^2 is the proportion of the variance accounted for by independent variables; and

(2) the degree of freedom of error term, (N - k -1), where N is the sample size and k refers to the number of independent variables in the equation.

TABLE C.1

POWER OF MULTIPLE REGRESSION ANALYSIS AS A FUNCTION OF R^2, N AND k, GIVEN THE SIGNIFICANT LEVEL OF .05

N	k	R^2 .10	.20	.30	.40	.50
200	2	*	*	*	*	*
	4	.96	*	*	*	*
	6	.95	*	*	*	*
	8	.93	*	*	*	*
	10	.91	*	*	*	*
	15	.88	*	*	*	*
150	2	.96	*	*	*	*
	4	.91	*	*	*	*
	6	.87	*	*	*	*
	8	.77	*	*	*	*
	10	.76	*	*	*	*
	15	.75	*	*	*	*
100	2	.82	*	*	*	*
	4	.73	.97	*	*	*
	6	.64	.96	*	*	*
	8	.59	.93	*	*	*
	10	.54	.92	*	*	*
	15	.50	.90	*	*	*
50	2	.60	.79	.96	*	*
	4	.39	.76	.95	*	*
	6	.33	.69	.91	.98	*
	8	.27	.59	.88	.97	*
	10	.23	.53	.81	.96	*
	15	.16	.38	.67	.87	*

*Power scores greater than .99.

Therefore, three factors, R^2, N and k, should be determined to obtain the statistical power of regression. Since many regression analyses will be conducted in this study, with varing number of independent variables and sample sizes (the changes in sample size will be determined by the numbers of independent variables, since the probability of missing cases increased along with the increase of variables used in the analyses and subgroupings, i.e. males only) it was decided that the power scores based upon ranges of the factors. As shown in Table B1, ranges of k's and R^2 terms are used within given N's. I used N of 200 as the maximum sample size to be conservative in estimating the power.

As reported in Table B1, the sample size of 200 is sufficient for most of the regression analyses to be used in this study. N of 200 is sufficient to detect the small effect size (i.e. R^2 of .1 with 15 independent variables) with power of 88 percent. The power scores shown in the second panel of Table 1 also indicate that N of 150 provides reasonable power for regression analyses of the research objectives. The power score with N of 150 are close to .80, which is normally used as a power level criterion.

When regression analyses are to be done within subgroupings, N would be reduced considerably. It seems that an N of 100 is sufficient for regressions when the observed R^2 is larger than .10. When subgroups are reduced to 50, an R^2 of .30 or greater is needed. In Table B.2, the required N's for multiple regression analyses are summarized based upon the power

TABLES C.2

SAMPLE SIZE, N*, AS A FUNCTION OF R^2, AND k, GIVEN THE POWER OF .80 AND SIGNIFICANCE LEVEL OF .05

k	R^2				
	.10	.20	.30	.40	.50
2	90	42	26	29	13
4	112	53	33	23	17
6	130	62	39	28	21
8	147	70	44	32	25
10	158	76	49	36	28
15	185	92	60	44	35

*Since $L = \frac{R^2}{1 - R^2} (N - k - 1)$, N can be computed as a function of L, R^2, and k as $N = L \frac{R^2}{1 - R^2} + k + 1$.

of .80. Again, it seems clear that an N of 211, or 200 is sufficient for the regression analyses for most of the research objectives.

APPENDIX D

CORRELATION MATRICES FOR TOTAL SAMPLE AND SCHIZOPHRENIC AND "OTHER DIAGNOSES" SUBSAMPLES

Table D.1

Zero-order Correlations between All Variables Used in Analyses, for Total Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Sex of Respondent	---															
(2) Family Relations	.32***	---														
(3) Age of Respondent	.03	.44***	---													
(4) Education of Respondent	.09	-.08	-.21***	---												
(5) Schizophrenia	-.03	.27***	.04	-.04	---											
(6) No. of Hospitalization	-.02	-.01	.07	-.10	.09	---										
(7) Community Tenure	.04	-.10	.05	.01	.05	-.13*	---									
(8) Psychopathology	-.02	.14*	.17*	-.10	.12*	.14*	-.06	---								
(9) Objective Burden	.16**	.11	.05	-.16**	-.05	.12*	-.14*	.22***	---							
(10) Subjective Burden	.07	.10	.03	-.02	.04	.04	-.02	.21***	.44***	---						
(11) Mastery	-.19**	-.02	-.02	.14*	.07	.02	.04	-.07	-.26***	-.29***	---					
(12) Social Support	.03	.06	.02	-.02	-.12*	.02	.02	-.01	-.13*	-.05	.29***	---				
(13) Stressful Life Events	.06	.03	-.05	.03	-.09	.04	-.00	-.09	.05	.08	-.14*	-.04	---			
(14) Total GHQ (Likert)	.12*	-.04	-.10	-.13*	-.06	-.02	.02	.13*	.21***	.29***	-.54***	-.23***	.16**	---		
(15) Psychological Distress (GHQ; Likert)	.13*	-.04	-.14*	-.13*	-.06	-.02	.02	.12*	.22***	.31***	-.55***	-.25***	.20**	.97***	---	
(16) Social Dysfunctioning (GHQ; Likert)	.07	.04	.01	-.11	-.03	-.04	.03	.11	.13*	.14*	-.35***	-.09	.03	.78***	.59***	--
Mean	49%	23%	48.26	2.05	49%	4.40	27.83	.64	2.17	2.56	26.92	33.77	2.11	26.05	13.23	12.82
Standard Deviation			12.86	1.43		4.78	19.08	.57	1.73	3.38	5.51	5.78	2.27	10.32	7.96	3.34
N	211	211	211	211	191	211	211	207	211	211	210	208	211	211	211	211

Table D.2

Zero-order Correlations Between All Variables Used in Analyses, for Schizophrenia Group

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Sex of Respondent	---															
(2) Family Relations	.47***	---														
(3) Age of Respondent	.03	.56***	---													
(4) Education of Respondent	.19*	.02	-.15	---												
(5) Schizophrenia	---	---	---	---	---											
(6) No. of Hospitalization	-.00	-.12	.05	-.12	---	---										
(7) Community Tenure	.01	-.00	.01	.01	---	-.15	---									
(8) Psychopathology	.07	.21*	.32***	-.12	---	.17	-.10	---								
(9) Objective Burden	.12	-.00	.02	-.11	---	.22*	-.09	.08	---							
(10) Subjective Burden	.01	.09	.07	-.11	---	.12	.03	.24**	.48***	---						
(11) Mastery	-.23*	-.09	-.14	.04	---	-.01	-.16	-.16	-.25**	-.32***	---					
(12) Social Support	.00	.11	.13	-.14	---	.03	-.07	-.04	-.21*	-.04	.25*	---				
(13) Stressful Life Events	-.06	.01	-.04	-.09	---	-.03	.03	-.10	-.05	.06	-.03	-.14	---			
(14) Total GHQ (Likert)	.09	-.08	-.10	-.18*	---	.05	.27**	.15	.15	.34***	-.46***	-.06	.00	---		
(15) Psychological Distress (GHQ; Likert)	.06	-.12	-.14	-.15	---	.05	.27**	.15	.15	.34***	-.48***	-.14	.05	.96***	---	
(16) Social Dysfunctioning (GHQ; Likert)	.14	-.00	.01	-.19*	---	-.01	.20*	.13	.14	.24**	-.31***	.11	-.09	.83***	.65***	---
Mean	46%	32%	48.75	2.03	---	4.78	29.90	.72	2.17	2.52	27.51	33.29	1.82	24.69	12.18	12.51
Standard Deviation			13.65	1.44	---	5.94	17.79	.59	1.59	3.27	5.33	6.18	1.89	9.75	7.01	3.51
N	93	93	93	93	---	93	93	91	93	93	92	92	93	93	93	93

Table D.3

Zero-order Correlations Between All Variables Used in Analyses, for Non-schizophrenia Group

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Sex of Respondent	---															
(2) Family Relations	.14	---														
(3) Age of Respondent	.02	.24**	---													
(4) Education of Respondent	.07	-.08	-.25	---												
(5) Schizophrenia	---	---	---	---	---											
(6) No. of Hospitalization	.02	.20*	.22*	-.07	---	---										
(7) Community Tenure	.06	-.27**	.06	.04	---	-.17*	---									
(8) Psychopathology	-.05	-.06	.06	-.12	---	.19*	.01	---								
(9) Objective Burden	.19*	.11	.09	-.14	---	.05	-.14	.31	---							
(10)Subjective Burden	.04	-.14	-.09	.13	---	-.06	.03	.15	.45***	---						
(11)Mastery	-.11	.10	.09	.20*	---	-.00	.11	-.06	-.27**	-.29**	---					
(12)Social Support	.04	.08	-.09	.06	---	-.03	.06	.06	-.03	-.13	.31***	---				
(13)Stressful Life Events	.10	.19*	-.01	.10	---	.04	.07	-.01	.10	.10	-.22*	-.00	---			
(14)Total GHQ (Likert)	.19*	-.14	-.16	-.05	---	-.10	-.00	.13	.25**	.26**	-.62***	-.36***	.24**	---		
(15)Psychological Distress (GHQ; Likert)	.20*	-.15	-.19*	-.05	---	-.10	-.02	.10	.25**	.30***	-.62***	-.35***	.28**	.97***	---	
(16)Social Dysfunctioning (GHQ; Likert)	.09	-.02	-.01	-.02	---	-.05	.04	.15	.17	.05	-.40***	-.24**	.03	.69***	.50***	---
Mean	49%	10%	47.79	2.15	---	3.91	27.93	.58	2.02	2.24	26.78	34.68	2.19	25.82	13.13	12.68
Standard Deviation			12.17	1.45	---	3.23	20.40	.55	1.78	3.06	5.51	5.17	2.30	9.55	7.96	2.64
N	98	98	98	98	---	98	98	97	98	98	98	96	98	98	98	98

APPENDIX E

FREQUENCY OF PATIENTS' CONTACT WITH AFTERCARE SERVICES

TABLE E.1

FREQUENCY(%) OF PATIENT'S CONTACT WITH COMMUNITY MENTAL HEALTH SERVICES SINCE LAST DISCHARGE

SERVICE	TOTAL PATIENTS	SCHIZOPHRENIC PATIENTS	OTHER THAN PATIENTS
PSYCHIATRIST	50.1%	50.3%	49.8%
SOCIAL WORKER	31.0%	35.5%	25.3%
GROUP THERAPY	8.4%	9.0%	7.7%
HOSPITAL DAY CARE	3.8%	5.5%	1.7%
MODITEN CLINIC	16.3%	26.2%	3.9%
MERIMNA	3.1%	3.1%	3.1%
W.O.T.C.H.	4.8%	6.2%	3.0%
PUBLIC HEALTH NURSE	6.5%	7.6%	5.2%

Source: Turner, Avison, Noh and Speechley (1983)

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