

THE UNIVERSITY OF CALGARY

THE IMPACT OF SOCIAL SUPPORT ON
ENVIRONMENTAL STRESS AND SYMPTOMATOLOGY

by

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ABSTRACT

The cost effect of environmental stress and the beneficial effect of social support (economic psychology, cost-benefit model) on psychiatric symptomatology was assessed using the Economic, Demographic and Social Characteristics Questionnaire (EDSCQ) developed by MacFadyen (1984) and MacFadyen & MacFadyen (1984, 1986a, 1986b). The purpose of the study was to test the factorial construct validity of the EDSCQ with an inpatient sample, where it was predicted that a general environmental risk factor would emerge. It was also predicted that a high level of risk as assessed by the EDSCQ would be related to high levels of self-reported symptomatology using the Behavior Symptom Inventory (Derogatis, 1975). It was further hypothesized that social support, as measured by the EDSCQ would be related to decreased overall symptomatology. As predicted, factor analysis of the EDSCQ revealed a general environmental risk factor, as well as several factors related to economic, social, demographic and individual integration. Regression and correlational analyses revealed that the total EDSCQ stress score and the social support, economic and demographic subscales were strongly related to BSI symptomatology in the predicted direction. Correlation analysis of the sixty-three items with symptomatology also generally confirm the hypothesis that the higher the risk, the greater the symptom level. When social support was specifically examined it was found that results are dependent upon marital status. Level of social support

was significantly and negatively related to symptomatology for the total sample and the single sample, but not for the married sample. Buffering effects of social support were found only for the single sample. This suggests that those who are married experience social support from their spouses. These results provide preliminary support for an economic psychology, cost-benefit model and for the usefulness of the EDSCQ in the assessment and referral process of inpatient symptomatology.

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CHAPTER ONE

INTRODUCTION

Many researchers have found a relationship between environmental factors and behavior and emotional disorders. For example, Catalano and Dooley (1977, 1979, 1980, 1981) and Brenner (1973, 1977) have found a relationship between changes in the economy and incidence of psychological disorders. Catalano and Dooley (1981) developed the term "behavioral costs" to describe such consequences as psychological and physical disorders which are associated with negative changes occurring in the economy, and numerous other negative environmental factors have also been found to be associated with behavioral costs. This has led to an "environmental stress hypothesis" or "negative stress model" which professes that certain negative socio-demographic factors (e.g. unemployment) create stress and as a result behavioral costs occur (Dohrenwend & Dohrenwend, 1965).

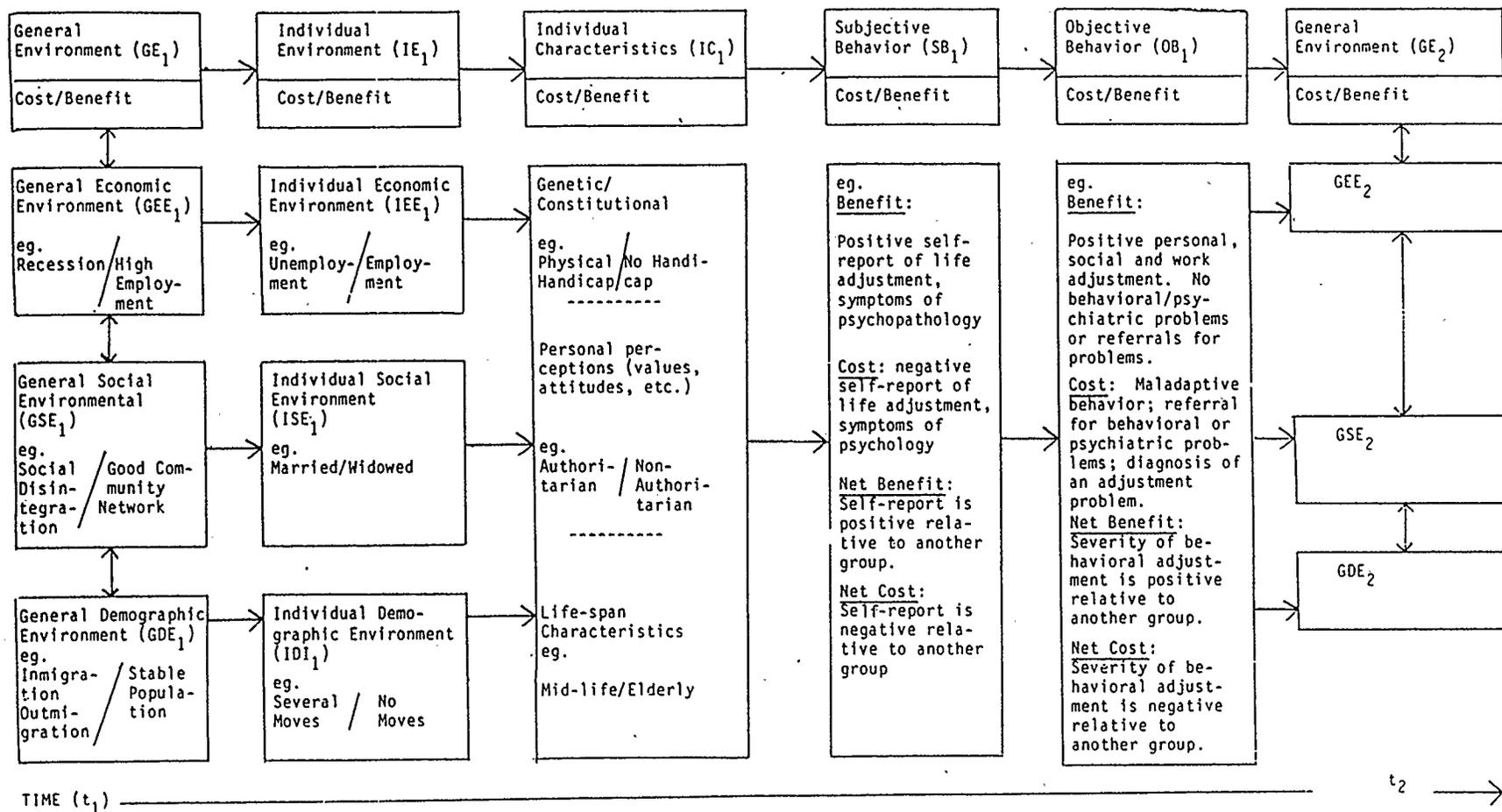
While negative environmental factors have been found to be associated with behavioral costs, positive environmental factors such as social support have been hypothesized to relate to a good life adjustment. This hypothesis has received consistent support where lack of social support has been found to be more common among psychiatric inpatients (Froland, Brodsky, Olson & Stewart, 1979; Pattison, DeFrancisco, Wood, Frazier & Crowder, 1975; Tolsdorf, 1976)

and outpatients (Brugha, Nalsh, Delaney, O'Hanlon, Dondero, Daly, Hickey & Bourke, 1982; Henderson, Duncan-Jones, McAuley & Ritchie, 1978; Weissman, Paykel, Siegel, & Klerman, 1971) than among normal population samples. It has also been found that the inpatients and outpatients most deficient in social support manifest more severe symptomatology and poorer prognoses (Goering, Wasylenki, Lancee & Freeman, 1983; Sokolovsky, Cohen, Berger & Geiger, 1978; Surtees, 1980; Winefield, 1979).

The concept that in the environment both "behavioral costs" and "benefits" co-exist has led MacFadyen and MacFadyen (1984, 1986) to develop a cost-benefit analysis of environmental factors based on a conceptual model which has been termed "economic psychology". (See Figure 1, page 3). This model includes several levels of analyses and simultaneously considers numerous variables when explaining overt behavioral costs. At the most general level, is the aggregate level of analysis (general environment), which relates the general state of the environment (e.g. recession) to such phenomenon as suicide or psychiatric inpatient admission rates. An example of analysis at this level is Catalano, Dooley and Jackson's (1981) finding that male inpatient admission was directly related to unemployment at a two month lag. The second level of analysis is the individual environment level. At this level various sociodemographic factors of individuals are studied in relation to such individual behavioral costs as self reports of symptoms, suicide, etc. For example, Billings, Cronkite and Moos (1983) found that depressed inpatients

FIGURE 1

AN ECONOMIC PSYCHOLOGY MODEL OF ANTECEDENTS AND OUTCOMES IN MENTAL HEALTH



are more likely than normal controls to be unemployed.

The third level of analysis considers various individual characteristics such as genetic factors, personality, values and attitudes. These factors will play a part in the type of subjective evaluation that is made regarding the event. For example, while one individual may find unemployment completely intolerable (due to strong work ethic), another may feel unemployment is a benefit as it allows time to pursue other interests (values leisure activity).

From this model it is illustrated that the occurrence of a behavioral cost is dependent upon numerous co-existing factors, such as the general state of the environment (e.g. recession), individual socio-demographic factors (unemployment, low socioeconomic status, social support etc.) and one's own appraisal of the situation, which in turn is influenced by personality, intelligence, values, and coping style. The fundamental idea behind this model is that certain socio-demographic factors create stress for individuals and place these individuals more at "risk" for developing a behavioral cost. MacFadyen and MacFadyen (1984, 1986) refer to these factors as "environmental risk factors". However, development of a disorder will be dependent on other variables such as subjective evaluation and personality attributes. In this model the development of a behavioral cost is dependent upon the balance of risk (cost) and beneficial factors.

In discussing the model of economic psychology, the economic

factor has been used as an example, however, it should be mentioned that many other socio-demographic factors have been found to be related to behavioral costs. The risk factor most consistently found in the literature to have an inverse relationship with behavioral costs is socio-economic status (Cochrane & Stopes-Roe, 1980; D'arcy, 1982; Dohrenwend & Dohrenwend, 1969; Hollingshead & Redlich, 1953). At the inpatient level it has been found by Bland and Orn (1981) that the overwhelming majority of the schizophrenic inpatients receiving treatment in Alberta Hospital were from the lowest social class.

Related to the inverse relationship between social class and psychiatric disorder is the finding that those of lower education, income and occupation level have higher rates of psychiatric disorder (Dohrenwend & Dohrenwend, 1969). Those of higher education levels are found to have lower rates of admission to psychiatric hospitals (Eaton, 1974) and to have a lower incidence of symptoms (Meille, Johnson & St. Peter, 1976).

Various individual factors such as sex, age, marital status, religion, race and lack of individual social integration have all been found to be related to behavioral costs. Overall, females show higher rates of disorder (especially depression) than males when self report measures are used (Barnes & Prosen, 1984; Bell, LeRoy & Stephenson, 1982; Cochrane & Stopes-Roe, 1980; D'arcy, 1982). Several studies have found that the youngest adult age group (18-34) manifest the highest rates of psychiatric disorder and committed

suicides (Aneshensel, Frerichs & Clark, 1981; Craig & VanNatta, 1979; Leaf, Weissman, Myers, Tischler & Holzer, 1984; Morris, Kovacs, Beck & Wolfe, 1974). When marital status is examined it is consistently found that the married have the lowest rates of psychiatric disorder while the divorced/separated and widowed have the highest rates (Barnes & Prosen, 1984; Leaf, Weissman, Myers, Tischler & Holzer, 1984; Surtees, 1984; Warheit, Holzer, Bell & Arey, 1976). Disorder rates for the single (never married) tend to fall in an intermediate range somewhere between the married and those no longer married (Pearlin & Johnson, 1977). It has been found that those of a racial minority and who do not share the same native language as the majority of the population have higher rates of psychiatric disorder (Adebimpe, Chu, Klien & Lange, 1982, Banks & Jackson, 1982; Bland, 1982). Likewise, immigrants who also may be from a different cultural background and speak a different native language and practice a different religion than is practiced in the new country moved to, suffer from higher rates of disorder (Bebbington, Hurry & Tennant, 1981; Band & Orn, 1981). One explanation for why minorities and immigrants are more likely to experience psychological disorders is that such groups lack social integration and tend to feel isolated from the mainstream of society (Leighton, Harding, Macklin, Macmillan & Leighton, 1963).

A variety of demographic factors such as length of residence in a region or neighborhood, use of community facilities, satisfaction with neighborhood, and living in a rural area have been found to be

negatively related to rates of psychiatric disorder (Bland & Orn, 1981; Moss & Plewis, 1979; Eaton, 1974).

One socio-demographic factor found extensively in the literature that exerts benefits rather than costs is that of social support. From the extensive research in this area two controversial hypotheses have developed. The "direct effect" hypothesis suggests that level of social support is related to behavioral costs in a negative direction. Many researchers have found that lack of an intimate confidant relationship, few friends, relatives and acquaintances, infrequent contact with others, lack of tangible support, lack of crisis support, lack of participation in organizations and dissatisfaction with support are all directly related to the occurrence of behavioral costs. On the other hand, adequate levels of these support factors create benefits. It has consistently been found that inpatients have lower levels of social support both in qualitative and quantitative terms than normal controls (Froland, Brodsky, Olson & Stewart, 1979; Pattison, DeFrancisco, Wood, Frazier & Crowder, 1975; Winefield, 1979). Similarly, outpatients show more qualitative and quantitative deficiencies in social support than normal controls, however, the level of deficiency is not as high as it is for inpatients (Brugha, Nalsh, Delaney, O'Hanlon, Dondero, Daly, Hickey & Bourke, 1982; Henderson, Duncan-Jones, McAuley & Ritchie, 1978; Pattison, DeFrancisco, Wood, Frazier & Crowder, 1975; Weissman, Paykel, Siegel, & Klerman, 1971). Among normal populations

has been found that those manifesting symptoms are more likely to be experiencing deficiencies in social support (Berkman & Syme, 1979; Henderson, Byrne, Duncan-Jones, Adcock, Scott & Steele, 1978; Leaf, Weissman, Myers, Tischler & Holzer, 1984; Paykel, Myers, Lindenthal & Tanner, 1974; Rook, 1984; Sarason, Levine, Basham & Sarason, 1983; Surtees, 1984).

The second hypothesis known as the buffering hypothesis contends that under periods of stress social support plays a moderating role in the prevention of behavioral costs, while under low levels of stress social support has less influence upon behavioral costs. The idea behind this hypothesis is that under relatively stress free conditions adequate life functioning is easily maintained and an individual with low social support is just as likely to be functioning well as an individual with good social support. On the contrary, during periods of stress the benefits of social support are hypothesized to counteract some of the negative effects of life stress and therefore under stressful conditions individuals with good social support will have lower symptom levels than those lacking social support. As with the direct effect hypothesis, evidence for the buffering hypothesis has been found among inpatients (Billings, Cronkite & Moos, 1983; Surtees, 1980), outpatients (Miller & Davidson, 1976) and general population samples (Costello, 1982; Gore, 1978; Monroe, 1983; Wilcox, 1981).

It is apparent from reviewing many studies that a whole range of socio-demographic factors are related to behavioral costs. Such

factors as unemployment, low income, little education, lack of occupational skills, femaleness, being young, divorce, separation, immigrant status, geographic instability and lack of social support are stressful and create environmental risk. It can be assumed that the greater the number of stress factors an individual experiences the greater is his level of risk. For example, an individual who is unemployed, young, divorced, geographically unstable and lacks social support would experience more stress and therefore be more likely to develop a psychiatric disorder than someone who is unemployed but is married, demographically stable and receives social support.

Clearly, knowledge of an individual's socio-demographic characteristics appears to be of significance in determination of behavioral costs when it is considered that certain characteristics are more stressful than others and stress appears to be strongly related to the development of psychiatric disorder.

Unfortunately, to date no study has attempted to systematically collect information on all the various socio-demographic factors and relate their independent and mutual effects upon behavioral costs. Nor has there been an attempt to quantify the level of stress one experiences as a function of multiple socio-demographic factors. This need for the ability to systematically collect such information and to quantify the level of environmental risk one experiences has led to the development of the "Economic, Demographic And Social Characteristics Questionnaire" (EDSCQ) (MacFadyen, 1984, and MacFadyen & MacFadyen, 1984, 1986b). The EDSCQ is a sixty-three item

questionnaire with an individual, social support, economic and demographic section which allows for the collection of most if not all relevant socio-demographic factors and provides a total risk score which is useful in indicating the degree to which an individual is at "risk" for developing a psychiatric disorder. The design of this instrument allows one to consider the individual effects of only one socio-demographic variable, such as the number of friends one has, or the effect of only one subscale such as the social support scale, or the joint effect of all variables considered together which would be obtained from the total score. The EDSCQ also allows for the study of the interrelationship between variables. It is possible that certain socio-demographic variables are likely to occur together. For example, it may be that those who are unemployed are also more likely to be of a lower socio-economic class. The status of unemployment may result in loss of income which may further result in decreased participation in the community and consequent loss of social support from friends.

The focus of this thesis is two fold: 1) validation of the EDSCQ as a useful and reliable instrument in predicting self-reported symptomatology scores among an inpatient population. If the EDSCQ is to be a useful predictive tool it would be expected that those who have a high score on the total EDSCQ, indicating they are at high risk would have higher symptomatology scores than those scoring low on the EDSCQ, who are at low risk; 2) a special interest of this study is to focus specifically on the role social support plays in the development of behavioral costs. Does high social support as

measured on the EDSCQ, e.g. low "risk" score on social support, directly or indirectly result in a behavioral "benefit" to the individual on the basis of lower symptomatology?

CHAPTER TWO

SOCIAL SUPPORT AND BEHAVIORAL COSTS

Introduction

Recently the role social support plays in physical and psychological illness has been investigated by many researchers. From the various studies undertaken two prominent hypothesis co-exist. According to one hypothesis lack of social support has direct negative effects upon psychological symptoms. In this direct effect hypothesis social support is an etiological factor in symptom development in its own right, and therefore, a deficiency in social support results in behavioral costs (Henderson, 1977; Henderson, Duncan-Jones, McAuley & Ritchie, 1978).

On the other hand, another hypothesis, known as the "Buffering hypothesis" professes that social support moderates the negative effects of stressful life events (Caplan, 1974; Cobb, 1976; Dean & Lin, 1977). In this second hypothesis social support is most pertinent under conditions of stress when individuals often need emotional and material aid, while in times of stability social support is less likely to be related to coping and mental and physical well being. Studies investigating these two controversial hypothesis will now be presented.

Direct Effects of Social Support

In an attempt to determine if social support has direct effects upon psychological symptoms some studies known as case-control studies, compare a patient population to a control population. While other studies are concerned only with a general population sample or a

particular patient sample. Case control studies will be considered first as they are the best designed.

Case-control studies of direct effects

Froland, Brodsky, Olson and Stewart (1979) compared social networks of thirty Oregon State Hospital inpatients, twenty day treatment patients, twenty-seven outpatients and thirty adults who were residents in Marion County Oregon. The Social Network Assessment Questionnaire (Froland, 1978) was administered to determine the structure of the network, the patterns of interactions and the supportive functions performed by relationships within the network. Social adjustment was primarily measured by the Denver Community Mental Health Questionnaire. From this instrument, scale scores on psychological distress, productivity, substance abuse, legal system difficulties and use of public services were obtained. When examining average scores for each group it was found that relative to the general population sample, the average profile of the social network of patients in the three network groups can be described as smaller in size, fewer ties with kin, fewer members living far away, fewer different sources of friends, fewer long term friends, less interaction with family, friends and relatives, fewer friends who know family members, less stability of ties and greater feelings of loss of help from relationships. With regard to social adjustment scores, the general population group scored higher than the three patient groups. With the exception of alcohol use scores, each dimension of social adjustment was different between the four groups. When comparing the three patient groups, the

inpatient group had lower scores on psychological well being and productivity than outpatients and day patients. However, day patients and outpatients had lower scores than the normal population group.

Discriminant functional analysis was employed to isolate those characteristics of social networks that were specifically indicative of levels of social adjustment. When all social network characteristics were considered 79.29 percent of the mental health patients were correctly classified according to type of treatment.

Each group was also compared in terms of support resources they would utilize if they were confronted with various situations such as finding a place to live, or seeking advice. It was found that family ties are the major source of support for all groups, except the inpatient group. This may be due to the fact that chronic patients have taxed relationships with family members. The general population sample placed greater emphasis on family members as a support source. The three treatment groups expressed a greater tendency to seek out professional sources of help.

From this study, Froland et al (1979) concluded that the social support network is related to social and community adjustment. They recommend that professionals aid patients in strengthening supportive ties with family members.

Tolsdorf (1976) compared ten recently hospitalized schizophrenics to ten recently hospitalized medical patients in terms of size and quality of one's social network. All subjects were male veterans living in Massachusetts or Connecticut.

Network sizes ranged from nineteen to fifty-four. For the medical control subjects the average size was 37.8, while for the inpatients the average size was 29.8. Differences were found for relationship density, with controls having more total multiplex relationships (relationships where more than one interest is shared), controls having more proportioned multiplex relationships, controls having more proportioned kinship membership, patients having more proportioned kinship linkages, patients having more average functional in degree (recipients of aid), patients having more total functional in degree and proportion of asymmetrical relationships were higher for inpatients.

Differences were also found between the two groups in terms of beliefs concerning the potential usefulness of network members in aiding one to cope with various life problems. All the inpatients demonstrated a negative network orientation, believing that it is inadvisable, impossible, useless or potentially dangerous to draw upon network resources. Tolssdorf concluded from follow-up reports that the negative network orientations preceded the onset of the schizophrenic symptoms and that they in fact frequently dated back to the early childhood years of the inpatients. The control group by and large held positive network orientation beliefs in that it is advisable and often necessary to confide in one's social network. It was also found that medical patients were able to utilize their support people much more effectively than the psychiatric patients.

Tolssdorf (1976) concludes the article by mentioning that in all

the psychiatric patients at least one and often several stress situations were found to precede the onset of symptoms, while in the control group no life stress was revealed in most cases, or if it had occurred it was alleviated through network intervention. From this we are to be aware that other factors besides social support may be involved in the development of psychiatric symptoms. However, it is implied that adequate social support may serve to buffer life stress in addition to direct evidence that patients are deficient in social bonds. Unfortunately this study did not attempt to investigate the buffering hypothesis and consequently no definite conclusions can be made regarding the moderating role of social support.

Pattison, DeFrancisco, Wood, Frazier, & Crowder (1975) compared an urban control population to a neurotic and psychotic patients population in terms of size of network. When using the Pattison Psychosocial Kinship Inventory it was found that the healthy control group had twenty to thirty people in their intimate psychosocial network. This group rated their relationships as positive on emotional intensity, reciprocity, quality of emotion, instrumentality and degree of interaction. There were typically five or six people in each subgroup of family, relatives, friends, neighbors and work or social contacts. About one half or two-thirds of these people in the network have social relationships with each other, giving a social connectedness ratio of about 60:40. Friends are the most highly valued outside of the nuclear family and are most often sought for affective and instrumental assistance.

For the neurotic patient group there were ten to twelve people in the social network, often including people who live far away or are dead. Ratings on interpersonal variables are lower, some negative. The social connectedness ratio is approximately 30:70.

For the psychotic group their social network was made up of four or five people, who are usually only family. Ratings of type of relationship generally indicate nonreciprocity. The social connectedness ratio is 90:100 or more.

From this study it is apparent that neurotic and especially psychotic patients are impaired in terms of social network size and quality of relationships. Whether this deficiency is a cause or a result of mental illness was not established by this study.

Famuyiwa and Olatokunbo (1984) compared the social networks (family and work sector) of one hundred and fifty three Nigerian inpatients to seventy two controls. Compared to the control group the inpatients had lower mean scores for density (interrelationship among members) and network function of access to social contact within the family sector. Intensity of ties within the family sector was stronger for the patients. When inpatients were divided into functional psychotics and neurotics, the latter subgroup had a lower mean score on emotional support from family. Network size was not different between inpatients and controls.

Within the co-worker sector patients had lower mean scores on density, intensity of ties and access to social contact than controls. Only the neurotic subgroup had lower density, intensity and emotional

support. The finding that neurotics are more deficient in social networks than psychotics was explained by the possibility that there may be a sympathy-evoking quality of the psychotic experience, while society as a whole is more intolerant to neurotic behavior.

Henderson, Duncan-Jones, McAuley & Ritchie (1978) compared the social support network of fifty psychiatric patients with fifty matched controls living in Canberra. Through administering the Social Interaction Schedule it was found that controls had more contact with persons outside the household in the past week, more contact with persons outside the primary group in the last week, greater number of attachment figures in Canberra, greater index of perceived support and more controls were satisfied with support. Number of close relatives living in Canberra was not different between the two groups. There was no difference in the amount of positive interaction between groups, but controls had substantially more neutral interactions, while patients had more negative interactions. From these findings the authors concluded that neurotic patients in treatment have a deficient primary group in terms of both numerical size and affective quality.

Brugha, Naish, Delaney, O'Hanlon, Dondero, Daly, Hickey and Bourke (1982) replicated Henderson et al's (1978) study by comparing fifty outpatients in Dublin with fifty controls. As in Henderson et al's study the Social Interaction Schedule was administered to assess quantity and quality of the subject's social network, and t-tests were employed to test significance. When the average total SIS score of the two groups was compared it was found that the patients scored higher in

deficits of quality of social interaction. Patients nominated approximately half as many good friends and close relatives as controls did. Patients had fewer attachment figures, and fewer contacts with these and other people outside the household. Patients had less social interaction than controls with members of their primary group in the week prior to being interviewed. Patients did not report less attendance at clubs or organizations, nor did they report in greater number that they had not had support from an attachment figure or from other people during the previous week.

As in Henderson's study it was also found that controls spent more time in neutral interaction than did patients, while negative interaction was four times more common in the patient group. No difference was found for amount of time spent in positive interaction. It was concluded from this study that there exists major differences in social network size and social interaction between psychiatric outpatients and controls.

Weissman, Paykel, Siegel, & Klerman (1971) compared the social role performance of forty acutely depressed female outpatients aged 25-60 with forty controls living in the greater New Haven Metropolitan area. To assess social role performance the Social Adjustment Scale was administered. Through t-tests it was found that the depressed women experienced moderate friction with their husbands and were reluctant to discuss their personal feelings and problems with their husbands. It was found that the married depressed women had limited contact with close friends (one or two social contacts during a two month period),

diminished social interaction (once or twice a month went out socially) and had few or sporadic spare time activities or interests. No difference was found between groups in participation in community activities. Even the control women were found to be relatively inactive in this area.

It was concluded that the depressed patients while impaired in their social role performance showed diminished rather than grossly aberrant performance. Diminished ability was most apparent in intimate interpersonal relations rather than diffuse community activities.

O'Hara, Rehm and Campbell (1983) compared social support and life stress factors among depressed and nondepressed new mothers. Thirty women in their second trimester of pregnancy were followed through to the postpartum period. Eleven met Research Diagnostic Criteria and the Beck Depression Inventory for depression, while nineteen met criteria for the nondepressed group.

The Stressful Circumstance Scale indicated that the depressed group experienced more stress. Depressed subjects reported giving less instrumental support to their spouses, parents and confidants, as well as receiving less emotional support from these groups. Interestingly the depressed group reported more contact with others. This finding was interpreted as the possibility that the depressed women sought out network help or were perceived by network members as requiring assistance.

Spouse and confidants appeared to play important roles in distinguishing post partum depressed from nondepressed women. The

spouses of depressed subjects were viewed as less able providers and depressed subjects rated themselves as having more frequent marital problems. Depressed subjects reported being less able to rely on instrumental support from mothers and fathers. Depressed and nondepressed subjects did not differ on any of the six items regarding availability and general use of social support, nor did the group differ on the six items assessing support received in the context of child care.

Winefield (1979) administered the Social Environmental Questionnaire to thirty-five University of Adelaide undergrads and thirty two depressed female inpatients under age 45. Patients were more likely than controls to report no confidant existing in the household, nobody confiding in them, a smaller number of confidants outside the household and lower confidence in being liked by people. No differences were found between the groups in number of cohabitants, number of casual friends or in the value of talking over one's life. From this study it appears that close confiding relationships are associated with healthy functioning, while more casual relationships are less pertinent to mental health.

Eisemann (1984) compared various aspects of social support among one hundred and ten depressed inpatients and one hundred and ten controls. T-tests indicated that the depressed inpatients scored higher on suffering from loneliness, they had fewer confiding family members, fewer friends, fewer acquaintances and fewer self initiated phone calls. This study indicated that lack of intimate and diffuse

social support is associated with depression at the inpatient level.

Roy (1981) attempted to determine risk factors associated with depression by comparing eighty-eight depressed female in or outpatients to eighty-eight controls living in Toronto. Through t-tests it was found that middle class patients had more parental loss, poorer marriages more unemployment and more depression occurring in first degree relatives than controls. For working class patients it was found that they too experienced more parental loss than controls, poorer marriages and more depression occurring in first degree relatives.

Roy concluded from this study that loss of parent before age seventeen, poor marriage, unemployment and a history of depression in first degree relatives are risk factors associated with depression.

Roy and Kennedy (1984) examined family social support factors in seventy-two adult non-psychotic depressed patients and seventy-two matched controls living in Toronto. Through the chi-square statistic it was found that more of the married, working class, middle class and total group of depressed patients were assessed as having a poor marriage in the year prior to onset of the depressive episode. More of both the middle class and total groups of depressed patients had experienced early parental loss before age seventeen either because of death or separation. Having three or more children aged fourteen or less did not occur more in the depressed group. It was concluded that the following risk factors exist for depression: femaleness, loss of parent before age seventeen, poor marital relations and a positive

family history of depression.

Linbald-Goldberg and Dukes (1985) compared fifty-six dysfunctional (those who were attending the Philadelphia Child Guidance Clinic) black, low income, female-headed families in terms of social support factors. Through t-tests it was found that there were more people living in the home of dysfunctional families than of functional ones. Mothers in the dysfunctional group tended to have more biological children at home and tended to have more non biological children at home. When administering the Pattison Psychosocial Kinship Inventory it was found that both groups listed approximately twelve people existing in their network, with family members being reported first, friends second and relatives third. However, mothers in the dysfunctional group were more likely to list deceased persons as part of their network and more often listed people as important in their networks for negative reasons. Contrary to what would be expected there was a tendency for dysfunctional mothers to have frequent contact with relatives and network persons lived closer to dysfunctional single mothers within the relatives and friends categories. Perhaps this contradiction can be explained by the finding that instead of the dysfunctional mothers receiving more support from others, they tended to provide more frequent emotional support to relatives in their network than did functional mothers. The dysfunctional mothers perceived that they provided more emotional support than they received from all network members, especially family members. Results from this study lead to the conclusion that dysfunctional low income mothers feel

that they provide more social support to others than they receive in return.

The remainder of the studies to be discussed in this section are concerned specifically with support factors in the family. For example, Snowdon (1979) compared one thousand British born obsessive compulsive patients and one thousand controls in terms of family size and birth order. It was found that the average family size of obsessionals was smaller than that of controls and there was an excess of first borns among male patients.

One interpretation of these findings is that the larger the family the more support there is available, in particular, the more older siblings one has, the more likely is one to receive support. Snowdon concluded by stating that perhaps first borns experience more parental demands which predisposes them to obsessional neurosis.

Munro (1966) compared one hundred and fifty-three depressed inpatients to 153 matched controls to determine if parental deprivation from death or separation is more common among the inpatients. Overall, it was found that the proportion of inpatients who lost a parent by death or separation was very similar to controls. However, when considering loss of parents between the ages of 11-15, the inpatients showed an excess of parental deaths. When results for only the severely depressed were considered (the Hamilton scale was used to assess severity) differences were found. Nearly twice as many severe as moderate depressives had lost a parent by death in childhood. Nearly twice as many severe depressives as controls had lost their mother by death.

No difference between severe depressives and controls was found for death of father. From this study it was concluded that severely depressed patients were more liable to have experienced parental death, especially maternal.

In 1969, Munro again examined the role of parental deprivation in mental illness. This time they compared patients with schizophrenia, depression and anxiety states (N = 279), to matched controls. Through chi-square tests it was found that outpatients do not differ from controls in terms of parental loss. Among inpatients, maternal death was more common. No excess of parental loss was found for the schizophrenic or anxiety state patients. Results suggest that severity of illness rather than diagnosis is related to maternal death.

Birtchnell (1970a) compared one hundred consecutive depressed inpatients to one hundred controls in Dumfries in terms of early and recent parental death. No difference was found between patients and controls for early parent death. However, the incidence of early parent death is higher in the severely depressed group. This is due to the excess of maternal deaths. Incidence of paternal deaths is similar between the two groups.

The incidence of recent parent death is higher in the severely depressed group. The incidence of maternal death considered separately is higher. Recent death of one parent combined with early parent death of the other occurred more in the severely depressed.

Results show that death of a parent either in childhood or during the year before admission are equally common in severely depressed

patients. As in Munro's research it was found that parental death, especially maternal is related to severity of depression.

In a similar study Birtchneil (1970b) compared one hundred consecutive inpatients to one hundred controls in terms of early parental death. It was found that from age 0-9 patients are more likely to have experienced parental loss. It was also found that female patients were more likely to have experienced parental loss. The age period when the difference between patients and controls is most striking is from 0-4. Again loss among female patients is greater.

This study points to the conclusion that losing a parent through death at a young age, and being female are related to the development of mental illness.

Adam, Bouckrams, and Streiner (1982) investigated whether parental loss through death or separation and family instability are more common in people under twenty-five who attempt suicide. They compared ninety-eight persons who attempted suicide with one hundred a two matched controls in New Zealand. It was found that the overall incidence of parental loss either through choice or separation was higher in attempted suicides than in controls (4790 vs 2470). More of the attempted suicides with a history of parental death were female. Loss in the age periods 0-5 and 17-20 were more frequent among the attempted suicides.

With respect to family stability more controls than attempted suicides were rated as having a stable family. For those with family

instability and parental loss it was found that during the period prior to parental loss, attempted suicides were noted to have had greater instability than controls. During the period immediately following the loss, no differences were found in family stability between attempted suicides and controls. In the long run control subjects appeared to recover from the immediate effects of loss. Attempted suicides on the other hand showed further deterioration in their already poor levels of family stability. It was concluded that family instability may be the principle etiologic variable and the high incidence of loss may be an incidental finding unrelated to the development of suicidal tendencies.

Summary of Findings

From this review of case control studies it is evident that quantitative and qualitative differences in social support exist between psychiatric patients and matched controls. All studies that explored network size found that patients had smaller networks (fewer friends, relatives and confidants).

Studies exploring qualitative aspects of social support consistently found patients to be less satisfied with the social support of significant others, and to have fewer social interactions than controls. The only study to find contradictory results was O'Hara, Rehm and Campbell's (1983) study, as they found that the depressed patient group reported more contact with others rather than less. This finding was explained by the suggestion that the patient group needed to seek out help from others or were perceived by network members as in need of assistance as a result of their symptomatology.

Unfortunately, this study was not prospective in design, and social contact prior to symptom development cannot be determined, as it is the social support prior to symptom development which is in question.

When type of social support is studied, close confiding social relationships appear to be more crucial to mental health than diffuse casual ties. In particular, the existence of a close confiding relationship with spouse was found to differentiate between patients and controls, with patients deficient in this type of support. Diffuse support such as participation in clubs and organizations was not found to differentiate patients from controls.

When social support factors within the family were solely considered, differences arose between patients and controls. Loss of a parent at a very young age was found to be related to patient status. Loss of a parent in an older age group 11-15, and 17-20 was also found to occur more in patients. Females appeared to be more vulnerable to parental loss than males. When patients with severe symptomatology were considered separately, more maternal death is found.

From this review of case control studies it is apparent that patients are deficient in many aspects of social support. Unfortunately, the studies in this section were retrospective and the question of causality cannot be answered. It may be the case that lack of poor relationships are the result of the symptomatology rather than the cause.

General Population Studies of Direct Effects

Introduction

Numerous studies have explored direct effects of social support in

samples of the general population. In these studies subjects are first assessed on mental health functioning and those with higher symptomatology are compared to those with low symptomatology scores in terms of social support. According to the direct effect hypothesis those with high symptomatology experience poorer social support than those with low symptomatology.

A very large community study of 3,058 subjects was performed by Leaf, Weissman, Myers, Tischler & Holzer (1984). These researchers presented data from the first wave of the community component of the Yale Epidemiologic catchment area project. The purpose of the study was to determine how individuals who met criteria for a DSM III diagnosis differ from those who have not in terms of demographic and social support characteristics. The interview used in this study included version two of the National Institute of Mental Health diagnostic interview schedule.

It was found through chi-square analysis that indicators of social support and social contact are strongly related to rates of disorder. Respondents with no contact with friends during the two weeks prior to being interviewed were much more likely to have had a recent disorder than those having some contact with friends. Interestingly, individuals with moderate levels of contact (1-7 days vs 8-14 days) appear to have the lowest rates of disorder. Those dissatisfied with contact with friends and relatives had the highest rate of recent diagnosed disorder, those satisfied had the lowest rate and those ambivalent were in between. Having friends nearby who can help in time

of need was related to lower diagnostic rates. The strongest relationship found dealt with importance of spousal support. Individuals reporting that they did not get along very well with their spouses during the two weeks prior to being interviewed had a rate more than four times that of those who got along well with their spouses. Respondents reporting that they were seldom or never able to confide in their spouses during the two weeks prior to being interviewed had a rate of disorder more than twice that of those who often had been able to confide in spouse. It was also found that individuals living with non-relatives were more likely to have had a recent disorder. However, number of people in household and presence of a child aged five or less in home was not related to disorder. When the sexes were analyzed separately it was found that number of contacts with friends is related to disorder in a linear fashion in women but not in men. Thus, women have higher rates of disorder than men at lower levels of contact and lower rates at higher levels of contact. This leads one to the conclusion that perhaps social support is more pertinent for women than for men. It can also be concluded that social support, especially of a close intimate nature is very important to mental health.

In a community survey of 576 women aged 18-65 in Edinburgh, Surtees (1984) examined the relationship between psychosocial factors and a Research Diagnostic Criteria defined psychiatric disorder. It was found that women with R.D.C. defined disorders regularly met fewer individuals and attended fewer gatherings. It was found that

among women who live with no other adults, and those with numerous children had higher rates of disorder than those with few children. Contrary to what would be expected women with disorders were found to have more close friends living in and out of Edinburgh. Furthermore, those with chronic or recurrent psychiatric conditions were found to have more close relatives out of Edinburgh, and in Edinburgh.

The results of this study suggest that both close intimate support and diffuse support are important for healthy functioning. One interpretation of the association between having numerous relatives and greater disorder rates is that relatives and friends are a source of stress rather than a source of support. Perhaps if questions concerning one's satisfaction with friends and relatives were asked this association would be clarified.

Rook (1984) examined the relative impact of both positive and negative social ties on mental well being. One hundred and twenty widowed women aged 60-89 living in senior citizen homes in Los Angeles were interviewed. The dependent variable of well being was assessed by the Life Satisfaction Index, Campbell et al's index of well being and UCLA's short form Loneliness Scale. The impact of positive and negative support was assessed by multiple regressions.

The number of negative social ties was associated with lower well being, whereas the number of people who provide positive social support was unrelated to well being. This pattern was obtained for the two measures of life satisfaction but not for loneliness. The number of supportive ties reported was associated with less loneliness, whereas

the number of negative social ties was unrelated to loneliness. The number of ties which are both supportive and problematic was unrelated to well being. Identical results were found when log transformed versions of the network variables occurred.

A regression analysis of those one is especially close to and most comfortable with indicated that the number of people with whom one felt comfortable was negatively associated with the Index of Well Being and Loneliness, and the number of problematic ties was associated with lower well being for all three measures.

Well being was not related to frequency of interaction with either supportive or nonsupportive ties. Further analysis asked subjects to rate on a scale of three how often they get together with others. Results indicated that frequent positive social contact was associated with greater well being but frequent contact with negative social ties was not.

An analysis of variance compared women who were low, moderate and high in terms of number of problematic ties. Groups did not differ in ease of making friends, number of people they felt close to or the likelihood of confiding in others. Women who reported more interpersonal problems knew more people whom they could obtain support from during periods of depression. Therefore, it appears that women with problematic ties have similar personal characteristics as women with few or no problematic ties.

It was concluded that positive and negative social ties represent relatively independent domains of experience. A stronger relationship

was found between negative ties and well being than for positive ties and well being. With regard to positive ties, feeling comfortable with others was more important than frequency per se.

Sarason, Levine, Basham and Sarason (1983) administered the Social Support Questionnaire (Sarason) and the Multiple Affect Checklist to 227 male and female Introductory Psychology Students at the University of Washington. There were negative correlations for women between the SSQ-N (number of people one can turn to in time of need) and SSQ-S (satisfaction with support) and measures of anxiety, depression, and hostility. The results for men tended to be in the same direction as those for women, however, the relations are not as strong. Results of this study suggest that having satisfactory social support in times of need is important, especially for women.

Stokes (1983) attempted to predict satisfaction with social support from a variety of variables derived from a subject's social network. Male and female undergrads were given a social network list (Hirsch, 1980) and asked to list people who are significant in their life and with whom they have contact with at least once a month. A stepwise regression was employed to predict satisfaction scores. The first and only component score to enter the prediction equation was the component for confidants, which correlated in a positive direction with the satisfaction scores. With regard to size of network it was found that satisfaction was highest at middle size values. It was concluded from this study that presence of a confidant is especially important in determining satisfaction with network.

The benefit of confiding in others after experiencing death of spouse through suicide or auto accident was examined by Pennebaker and O'Heeron (1984). Consistent with previous negative life event research it was found that the nineteen subjects experienced more health problems the year following the loss of their spouse than the year before. Pearson correlations indicated that the increase in illness rate from before to after the death was negatively related to talking with friends about the death and was positively correlated with ruminating about the spouse's death. It is interesting to note that talking with a counsellor or a support group was unrelated to health change. One explanation for this finding may be that only two subjects relied heavily on counselling resulting in too small a group to find significance. From these results it was concluded that confiding in friends plays a central role in the coping and health process.

Paykel, Myers, Lindenthal and Tanner (1974) surveyed seven hundred and twenty adults in New Haven. In terms of suicidal phenomena it was found that subjects with suicidal feelings had fewer neighbors who were close friends, fewer neighbors whom they visited, had visited less friends and had friends over to visit less in the last month. They were less likely to belong to a church or religious group or attend religious services. It was concluded that subjects experiencing suicidal feelings were more isolated.

Roberts, Roberts and Stevenson (1982) explored the relationship between employment, social support and psychiatric symptoms in one thousand seven hundred and ten women in Alameda County. The first stage

analysis indicated that in general, lack of social contact is a risk factor in experiencing psychological distress. Those women who reported being divorced/separated or widowed, unemployed, having few close relatives and friends and little contact with them are more likely to experience distress than those women who are married, employed or who score high on the index of sociability. When sociability was controlled, there was a positive relationship between psychological well being and sociability regardless of marital or employment status. In an analysis of covariance, employment status, sociability and marital status were included as the independent factor along with all possible combinations of those variables to test for any interaction effects. The index of sociability was the only factor that was related to psychological well being in the predicted direction.

Over the past few years Henderson, et al have studied the association between neurosis and the lack of social bonds in general population samples. In 1978(b), Henderson, Byrne, Duncan-Jones, Adcock, Scott and Steele administered the Interview Schedule for Social Interaction (ISST), the Present State Examination Scale and the General Hospital Questionnaire to 142 adults in Canberra.

A multiple regression analysis was carried out to determine the contribution of each of the ISSI measures to the variance in the G.H.Q. score. For each group of variables taken separately results were as follows: available attachment 16.29% of variance in G.H.Q. score, number of friends and acquaintances 7.4% of variance, adequate attachments 23% of variance, unpleasant social interaction 25.3% of

variance, wanting more support 27.3% of variance. When all factors were entered into a single equation the explained variance in G.H.Q. scores were as follows: available attachments - 16.29%, friends and acquaintances - 3.79%, adequate attachment 7.1%, unpleasant social interaction 14%, wanting more support 5.9%.

Results suggest that an association between neurosis and deficiencies in social bonds is stronger for close affectional bonds than for relationships with friends and acquaintances.

In 1979, Henderson, Duncan-Jones, Byrne, Adcock & Scott again administered the ISSI and G.H.Q. to a general population sample in Canberra. However, this time the sample size was larger with 756 adults. Through intercorrelating the G.H.Q. scores with the four ISSI summary variables (adequacy of social integration, adequacy of attachment, availability of social integration and availability of attachment) a relationship was found between symptomatology and reported adequacy of social integration and of attachment, and this appears to be stronger for women. The association was weaker for availability of social integration and attachment.

In 1983, Henderson and Moran employed a longitudinal design to explore social relationships at onset and remission of symptoms. The ISSI, the G.H.Q. and the Zung Self Rating Scale were administered three times at four month intervals to two hundred and thirty adults in Canberra. For those showing no symptomatology there was an increase at each subsequent wave in the adequacy of both close and diffuse relationships, but there was no change in the reported availability of

relationships. For those who subsequently developed neurotic symptoms they had less adequate close and diffuse social relationships than normals. Between time one and each of the subsequent times, in only one ISSI index was the change different from the corresponding change in those remaining symptom free. This was found only after eight months at time three, where there was an increase in the index for rows with close others from a score of 21 to 58. This change was greater than in the normals who drop from 26 to 20. To test for significance of this the researchers calculated the standard errors of the difference in means at time one and time three for individuals who become ill and for normals. Since the underlying distributions were not normal no attempt was made to use a Behrens-Fisher test. There was no change in any of the other ISSI indices. When compared to the corresponding change in the normals, close and diffuse relationships continued with no change throughout the year in their availability and perceived adequacy despite the marked increase in symptoms. The researchers stated that the increase in close friends only at eight months cannot be easily explained, except as a coincidental finding. For persons developing specifically depressive symptoms on the Zung Scale, by the second, third or fourth interview, none of the ISSI indices showed a change at any of the later times.

For those persons whose symptoms were in remission by time two or three, no change was found for any of the ISSI indices. But persons whose remission came later by time four, showed an increase in the adequacy of both close and diffuse relationships. There is a shift

towards perceiving social relationships as improved with each wave. Again the researchers explain these changes as possibly due to regression to the mean rather than due to an active process.

It was concluded from this study that development of neurotic symptoms is not accompanied by any major change in socialization. "The social network does not change in size or quality, at least with the unrelated neurotic and affective states seen in this community sample" (p. 470). Likewise when symptoms improved there was no major change in the social network. Despite the fact that this study was longitudinal it was added by the researchers that no conclusion on the causal ordering of the changes in symptoms and social relationships can be stated from these data.

Berkman and Syme (1979) assessed the relationship between social and community ties and mortality in 6928 adults in Alameda County in a nine year follow-up study. With few exceptions, subjects with each type of social tie (contacts with friends and relatives, church member, group member) had lower mortality rates. Three specific questions concerning social support were asked. (1) How many close friends do you have? (2) How many relatives do you have that you feel close to? (3) How often do you see these people each month? Considered individually none of these questions were important predictors of mortality. However, when combined they are associated with increases in risk. These differences in mortality rates between people who score high and low on the combined measure of support are greater for women than men. Individuals who belong to a church or temple had lower

mortality rates than those who did not. Group membership was not important for men but was for women. In a separate multivariate analysis each of the four sources of social contact was found to predict mortality of the other three. However, the more intimate ties of marriage and contacts with friends and relatives were stronger predictors than were ties of church and group membership.

When the Social Network Index was administered it was found that there was a consistent pattern of increased mortality rates with each decrease in social connection. The only exception to this pattern was found among women aged 50-59, where those moderately connected had lower rates than those who had the most social ties. Except for the age group 50-59 risk was greater for women with few social connections than for men with few connections.

To determine if possibly those who had died were ill at the time of interview and thus perhaps unable to maintain social ties, baseline physical health states were measured nine years before mortality rates were examined. It was found that the social network index was associated with mortality rates independently of baseline health status. In every category of health status for both sexes, those with the most social contacts have lower mortality rates than those most isolated. The gradient is least clear, however, for women who report having no health problems or few symptoms. When controlling for socio-economic status (income and education) and various health practices such as smoking, obesity, alcohol consumption and physical activity, social networks still have an effect on mortality rates.

It was concluded from this study that social circumstances such as social isolation may have pervasive health consequences and social factors may influence host resistance and affect vulnerability to disease in general. However, the mechanisms by which networks influence health states remains unclear.

Reed, McGee, Yano, & Feinleib (1983) explored the relationship between social support and coronary heart disease among 4653 men of Japanese descent living in Hawaii. The men who were in a Honolulu Heart Program were mailed a psychosocial questionnaire in August 1971. Questions concerning social support dealt with closeness of parents and spouses' parents in terms of distance, marital status; number of children, number of persons in household, frequency of social activity with co-workers, frequency of discussing serious personal problems with co-workers, frequency of attendance at religious services and number of social organizations attended regularly.

Logistic analyses were used to assess whether particular network scores were independently related to coronary heart disease. At the time of mailing the questionnaires 264 of the 4653 respondents had evidence of prevalent coronary heart disease including 131 with documented myocardial infarction and 133 with angina. Between August 1, 1971 and January 1, 1979, 218 men developed new coronary heart disease. Men with prevalent coronary heart disease were removed from the population at risk to calculate incidence rates.

There was no association of the rates with any of the nine individual questions, but several of the questions showed a general

trend of association in which men with more social ties had lower coronary heart disease rates. It was found that single men and men living alone had a higher risk of both prevalent and incident coronary heart disease. Among the remaining questions concerned with ties to outside groups and organizations there was no consistent pattern of association. Attendance at social organizations showed a slight inverse trend for prevalent coronary heart disease, but the opposite pattern was found for incidence.

The conceptual score or total score included all nine questions of the questionnaire and the factor derived score included the first five questions. Both scores showed similar patterns of inverse association in which the groups with the highest levels of support had the lowest prevalence rates for myocardial infarction, angina and total coronary heart disease. These associations were slightly stronger for the conceptual score than for the factor derived score.

The next step of the analysis was to include each of the social network scores separately with the covariables in multiple logistic regressions on coronary heart disease. The conceptual score was inversely associated with total coronary heart disease independently of the other variables. The factor derived score was inversely associated with total coronary heart disease and angina but not with myocardial infarction. When fatal and nonfatal myocardial infarction were grouped together there was no association with either score.

One final analysis was employed to determine if the effect of a social network is important only for people who are at high risk of

disease. The men were grouped separately into high and low levels of serum cholesterol and systolic blood pressure and into cigarette and non-smokers. They were also grouped as high for all 3, low for all 3, or in a mixed group. Each group was further subdivided into high or low social network scores based upon the median value of the factor derived score and then age adjusted coronary heart disease incidence rates were calculated for each group. Differences between rates by high and low social support scores for each risk factor level were tested by the Mantel Haenszel Method.

For serum cholesterol there was no association of coronary heart disease incidence rates and social network scores among those with high cholesterol. For smokers and men in the high systolic blood pressure groups there were trends in which the rates for myocardial infarction and total coronary heart disease were highest among men with low scores. When all three risk factors were considered together there appeared to be no protecting effect of a high social network score among the men in the high risk groups. Formal tests of interaction of the network scores with each of the risk factors were also computed and no interaction was found.

Results led to the conclusion that social network scores were more related to prevalence data than incidence data. The authors give two reasons for such a finding. One problem with prevalence data is that there is a potential for disease events to change the study characteristics. The occurrence of angina or a nonfatal myocardial infarction could reduce a person's ability or desire to maintain social

interactions. Another possibility suggested was the potential for isolated people to be more sensitive to illness and thus seek out medical care more often.

Another study relating various sociodemographic factors to the development of angina pectoris was undertaken by Medalie and Goldbourt (1976). Ten thousand Israeli men aged forty and over were followed intensively for five years. A multivariate analysis revealed seven variables to be related to the development of angina pectoris, one of which was psychosocial problems. Of all the psychosocial problems that of family problems showed the strongest association. The standard coefficient for family problems was slightly less than for the total psychosocial score. When anxiety scores were high, wife support was related to lower risk. Results suggest that support of family, especially spousal support is beneficial for physical well-being.

McIvor, Riklan, and Reznikoff (1984) explored the relationship between social support factors and depression in multiple sclerosis subjects. Family based and friend based support (social support inventory, Heller, Amaral & Procidano, 1978) was inversely related to depression (Beck Depression Inventory). Results lead to the conclusion that social support is strongly related to degree of depression found in M.S. sufferers.

In a longitudinal design, Billings and Moos (1982) examined the relationship between poor functioning and family and work support. It was found that family support was more strongly related to functioning among women, while work support was more strongly related

to functioning among men in the expected direction.

Results of the panel regression analysis revealed that for employed men, depression at time one had no independent effect on subsequent family or work support. There was also no longitudinal effect of family or work support on subsequent symptoms of depression nor were changes in support over the one year period related to changes in depression.

For employed women, the longitudinal effect of family support and depression on each other are negligible. However, initial levels of depression were predictive of decreased work support at time two. Decreases in family and work support were both linked to increases in depression. For nonemployed women decreases in family support were related to increases in depression over time.

The researchers also provided data on 88 male and 25 female patients who had returned to family settings after being treated for alcoholism. The cross sectional analyses revealed that patients who reported more symptoms of depression experienced less family support at time one and time two. Although the correlations were smaller a similar pattern was found for work support for time one and time two. The panel regression analyses revealed that increases in family support were associated with decreases in depression. Changes in work support during the one year period were related to changes in depression. A similar pattern of results were obtained when these models were estimated separately for only alcoholic men. In this sample there was a stronger relationship between changes in support and functioning than

in the community sample.

It was concluded that findings are consistent with a causal interpretation of the effects of social support. In this respect, there was little evidence across the one year period of study of delayed effects of initial support on later functioning or of initial functioning on later support.

Consistent relationships between functioning and support were found, but the strength of these relationships were dependent on gender and source of support. (Family support more important for women, work support more important for men.) Although the results indicate that social support plays an important role in maintaining well being they do not reveal if social support has a direct or interactive effect. In this study support appeared to be most beneficial to the former alcoholic patients who possibly were under more stress than the community sample.

Some studies which have concentrated solely on the family as a source of social support have examined such things as family composition and structure. For example, number of children living in household has been studied in the belief that such a factor is related to mental well being.

Barnes and Prosen (1984) examined the relationship between number of children in household and scores on the Center of Epidemiologic Scale for Depression, in 1,250 people attending their general practitioner's clinic in Manitoba.

An analysis of variance revealed that number of children was

related to CES-D scores. Those with one child had the lowest average score while those with four or more children had the highest average depression scores.

Similar results were found by Bebbington, Hurry, and Tennant (1981) who administered the present state examination to 800 adults in Camberwell. Through chi-square analysis it was found that women with children had psychiatric rates twice as high as women without children. It is interesting to note that no men with a disorder had children. This finding suggests that the presence of children in the home is more stressful for women than men, in fact having children may actually be a protective feature for men. It should be noted however, that employment for women is related to lower rates of disorder and women with children are less likely to be working. Thus higher rates for women with children may be due to lack of outside employment rather than to the presence of the children, or it could be a combination of the two.

Another study to explore the effect of children in the home was undertaken by Tchong-Laroche and Prince (1979). The Langner and Cornell Index was administered to forty-five French Canadian females 30-39 who were either divorced or separated with children. It was found that women with fewer children were less stressed than those who had many. However, it was also found that women who were employed outside the home and had higher education and income were less stressed. Such variables may be intercorrelated with having fewer children.

In Moss and Plewis' (1977) study of women in inner London with at least one child under five at home, number of children in the home was not related to psychological distress.

Similarly, Krause (1984) in a study of 173 married women with children found that number of children was not related to CES-depression scores in employed or non-employed women.

In a study by Scott, Kelleher, Smith and Murray (1982) the effect of family size on obsessionality was explored. 69 orthopedic patients in Glasgow, 77 in London and 73 in Cork were administered the Leighton Obsessionality Inventory. It was found that obsessionality was unrelated to family size.

Andrew (1976) examined the relationship between family size and delinquency in 182 retained delinquents in San Diego aged 10-20. It was found that males were more likely to come from larger families. Also delinquents were more likely to come from broken homes than would be expected from norms for the general population, this was especially true for females.

In one study by Warhet, Shimizu, Vega & Meinhardt (1982), results regarding social support were contradictory to what would be expected. It was found through chi-square analyses that for Caucasians living in Florida the presence of relatives nearby to help in time of need was related to greater mental health problems. No difference was found for Negroes, Anglos, Mexican Americans or Guamanians. It was also found that for Caucasians, Negroes, Anglos and Guamanians, those requesting assistance from relatives had higher symptomatology.

Presence of friends nearby for help was related to decreases in disorders for Anglos and Mexican Americans. Requests for assistance from friends was related to higher symptom scores for Caucasians, Negroes & Anglos.

Except for presence of friends, data from this study seem to indicate that availability and seeking of help from friends and relatives is not beneficial. This led the researchers to conclude that it appears that family and friendship networks are not sources of emotional stability and support for those in need. However, this study has perhaps misinterpreted the results. The subjects actually requesting assistance from friends and relatives were obviously in need of aid and the crisis they were experiencing may have resulted in higher symptom scores. A distinction should be made between subjects who actually need to seek help, from those who are aware that if they required assistance they would receive it.

Summary of Findings

From reviewing the studies that explored the direct effect hypothesis of social support in general population samples it is apparent that those experiencing psychological symptomatology are deficient in social support. Symptomatology was found to be related to less social interaction with others, lower satisfaction with support, less confidant support, fewer people in network, less neighbor support, less participation in organizations and greater number of children present in household. When considering the different types of support, close confiding bonds appear to be more important than more diffuse

support such as belonging to organizations and number of acquaintances in predicting symptomatology.

Many of the studies found that women appear to be more vulnerable to poor social support than men. Studies consisting of only female subjects consistently showed a negative relationship between social support and symptomatology. On the other hand, Reed, McGee, Yano and Feinleib's (1983) study of an all male sample failed to find a relationship between social support and symptomatology. It was also found that participation in organizations was relevant for women but not for men. The sexes were also found to differ in type of support needed. Family support was more important for female well being, while work support was more pertinent for men. In the studies that did find a positive relationship between number of children and symptomatology, the results held only for women. However, even some studies with only female subjects failed to find a strong relationship between number of children and symptomatology. Perhaps one reason why results are contradictory in this area is because effects of having children in the home are dependent upon other factors. For example, Surtees (1984) found that it was only women who live with no other adult who are affected by having children present in the household.

Although most studies found a negative relationship between social support and symptomatology, two failed to do so, and instead found a positive relationship between the two variables. Surtees (1984) found that women with disorders had more close friends, and more relatives living both far and near. Warheit, Shimizu, Vega and Meinhardt (1982)

found that relatives living nearby was related to higher rates of symptomatology. Particularly, in the case of relatives it could be argued that relatives are not always a source of support but instead may be sources of stress. Both of these studies failed to determine satisfaction of support received from friends and relatives. Perhaps if satisfaction had been assessed this contradiction would be clarified.

Besides social support being related to symptomatology the sociodemographic variables of unemployment and marital status (divorced/separated, or widowed) were found in one study to be related to symptomatology.

Patient Samples in exploring Direct Effects

Introduction

A few studies exploring the direct effect hypothesis of social support have been undertaken with psychiatric patient samples. These studies are usually concerned with determining if social support is related to such variables as severity of disorder and outcome. Other studies are interested in determining if the patient population as a whole has poorer social support than would be expected in the general population. According to the direct effect hypothesis patients as a whole would be expected to have poorer social support and those patients with poor outcome and severe symptomatology would be the most deficient in social support.

Sokolovsky, Cohen, Berger and Geiger (1978) compared three groups of ex-schizophrenic patients in terms of social network

characteristics. All of the forty-four experimental patients were living in single room occupancy hotels in New York. One group consisted of schizophrenics with moderate or severe chronic residual symptoms. Another group consisted of schizophrenics with minimal or no chronic residual symptoms. The third group consisted of those with no known psychotic history.

It was found that those with no known psychotic histories maintained hotel networks twice the size of those with severe symptomatology. It was found that schizophrenics with residual deficits were impaired in their ability to form instrumental and reciprocal relationships and engaged in more dependent interactions. Those in the moderate or severe residual group had an average of 3.0 links within a network, while those in the minimal residual group had an average of 4.4 links and those in the nonpsychotic group averaged 5.0 links.

Results suggested that those with the most severe schizophrenic symptoms were most likely to lack network ties and hence experience isolation. The researchers concluded that networks can have a preventative and a curative role. It should also be mentioned however, that poor networks may be a result rather than a cause of poor functioning. Those with severe residual symptoms may be unable to maintain networks.

Goering, Wasylenki, Lancee and Freeman (1983) investigated the relationship between social support and outcome of depression. Eighty-seven women with non-psychotic disorders residing in Toronto

were administered the Social Functioning Schedule and the Brief Psychiatric Rating Scale.

When comparisons were made between those with poor and good outcomes, lack of social support was more common in the 29% readmitted. Eighty percent of those readmitted lacked social support in comparison to 59% of those who were not. Lack of social support was defined as living alone, no one to count on, or having fewer than two visits a month with one outside the family. 88% of those with high symptoms and poor outcome lacked social support as compared to 41% with good outcome. Thus it was concluded that social support is a good predictor of outcome in depressed women.

Murphy (1983) examined the relationship between the existence of close supporting ties and prognosis of depression after one year in 124 depressed inpatients aged 65-89 from two hospitals in London. It was found that 54% of patients reporting they had no confidant had poor outcome, while 36% reporting they had no confidant had a good outcome. Murphy concluded that a confiding relationship does not appear to make a marked difference in outcome. There was no evidence that an intimate confidant protected against the effect of a severe life event.

In a study by Walton (1958) the relationship between suicidal behavior and social support was examined in 223 depressed inpatients from Maudsley and Bethlem Royal hospitals. It was found that in the sixty patients who were both depressed and suicidal, parental deprivation before age fourteen was greater.

In another study of suicidal behavior Toolan (1962) reviewed 102

suicidal attempts and threats of children and adolescents in New York (statistics of Bellevue Hospital). It was found that less than one-third lived with both parents. 32% lived with both parents, 42% with mother only, 3% with father only, 8% with relatives, 3% foster homes, 10% institutions, and 3% other.

Results from these two studies suggest that children with both parents at home are better off. Possibly due to the fact that the parents provide more support than only one parent.

Summary of Findings

All studies consistently found social support to be negatively related to poor outcome and severity of illness. Parental deprivation was found to be related to suicidal behavior in both an adult and child sample. Unfortunately, except for the parental deprivation studies none of these studies were longitudinal and therefore causality cannot be determined. Whether symptomatology resulted in poorer social support or poor social support resulted in symptomatology is in question.

Buffering Effects of Social Support

A direct relationship between stressful life events and psychiatric and physical illness has been well documented (Bell et al 1982; Birley & Brown, 1970; Dohrenwend & Dohrenwend 1974; Holmes & Rahe 1967; Holmes & Masuda 1974; Murphy 1983; Myers, Lindenthal & Pepper 1971; Paykel et al 1974; Rabkin & Struening 1976; Rahe et al 1967; Warheit, Holzer, Bell & Arey 1976; Warheit 1979). However, the magnitude of this

relationship has been found to vary considerably such that some individuals with high stress have low symptomatology while some with low stress have high symptomatology. Clearly, the relationship between stress and illness is a complex one and is influenced by personal and environmental factors. Recently, one such factor that has been explored in the social support literature is the assumption that social support may perhaps moderate or buffer the adverse effects of life stress.

According to the buffering hypothesis a deficiency in social bonds is a cause of morbidity only when adverse effects and experiences are also present, while during periods of low stress social support is less relevant. Various studies exploring the buffering hypothesis will now be explored. Case-control studies will be considered first as they allow for comparison between a psychiatric patient sample and a normal population sample. For this reason case-control studies are perhaps the best designed.

Case-Control Studies: Buffering Hypothesis

Billings, Cronkite and Moos (1983) administered the Health and Daily Living Form, Family Environment Scale and Work Environment Scale to 409 depressed in- and outpatients and 409 community controls who were not experiencing symptomatology according to the Research Diagnostic Criteria.

Overall, it was found that depressed patients experienced more stressors (negative life events and life strains) than did the nondepressed controls. Both depressed male and female patients

reported almost twice as many negative life events in the previous year as controls. It was also found that the depressed patients had substantially fewer and less supportive social resources than did the controls.

In a series of hierarchical discriminant function analyses it was found that the number of negative life events experienced in the last twelve months correctly classified 64.1% of the sample. The sequential addition of three strain indices (personal illness, negative home environment, and family strain) increased the classification rate to 66.8%. The addition of four coping measures (information seeking, problem solving, affective regulation and emotional discharge) increase the classification rate to 73%. The inclusion of four social resource measures (number of friends, number of contacts, strength of network relations and quality of significant relationship) resulted in a final classification rate of 78%. Each set of factors was entered last in analogous regression analyses to determine whether that set contributed significantly to the explained variance after all other factors had accounted for as much variance as possible. This resulted in the following increases in percentage of explained variance that could be attributed uniquely to each set, a) negative events 25%, b) strains 2.8%, c) coping 8.9%, d) social resources 6.9%. Thus each domain contributed some unique effect in predicting group membership, although the domains clearly share considerable variance. In this study social support appears to have direct effects along with some interactive effects in the prevention of depression.

Miller and Davidson (1976) explored the relationship between social support, life events and physical and psychological symptoms among thirty-four outpatients who had consulted their general practitioner with a new illness episode within the last seven days, and thirty-four community controls in Edinburgh. Through stepwise multiple regression techniques it was found that the consultants experienced more threatening events in the last three months and were also higher on the tiredness, anxiety, depression and hostility symptoms. A strong relationship was found between threatening events and the four psychological symptoms, particularly in the consulter sample. The relationship of threatening events with physical symptoms was much weaker. People with few casual friends tended to have higher symptom levels. In the consulter sample, a greater number of threatening events tend to happen to such people. It was found that the best predictor of the symptom score in the combined samples was threatening events in eight out of eleven cases. The casual friends variable improved the multiple regression for tiredness, anxiety, and overall psychological symptoms.

If one shifts the emphasis to predicting which people go to the doctor given the threatening and nonthreatening event scores, social support, total psychological and total physical symptoms, number of threatening life events, again turns out to be the best and only discriminator. Conversely, none of the other variables add anything to the discrimination if the threatening events variable is controlled. According to results of this study, threatening life events are more

relevant in the development of illness, especially of a psychological nature, than are social factors. There is evidence for the buffering effect because social support did have some positive effect under high stress conditions but had little effect under low stress conditions.

In an attempt to determine why higher rates of mental illness occur in the lower classes, Brown, Bhrolchain and Harris (1975) examined the role life events and social support factors play in the etiology of depression. This study was comprised of working and middle class women from two areas of inner London. One hundred and fourteen were in- or outpatients diagnosed as primary depressives with onset in the year prior to interview, and five hundred and seventy were from a random community sample. It was found that 26% of the community sample and 61% of the patient sample had a severely threatening event in an average nine month period before interview (for the community sample) or onset (for patients). Consistent with other findings the lower status groups had a particularly high disturbance rating. Combining the low and intermediate status groups gives a disturbance rate of 25% in the working class compared with 5% in the high status or middle class group. It was found that for a group of women whose youngest child was aged less than six there was a particular high rate of disturbance. Specifically, working class women who have a child under age six have a very high proportion of cases (42%) and are more likely to have a disturbance than the middle class. In addition 18% of the middle class and 41% of the working class women with a child at home had at least one severe event in the previous year. The

authors contend that the working class women and in particular those who have children at home are much more vulnerable to onset of disturbance when they do have a severe event or major difficulty than are the middle class. 39% of the working class women with children who had a severe event or major difficulty developed a psychiatric disorder in contrast to 6% of the middle class group.

When respondents were asked to list people to whom they could talk about their problems with, four scales of intimacy were devised. Those on scale "a" experienced a close intimate and confiding relationship with a husband or boyfriend or in exceptional cases a woman with whom they live. A rating of "b" was given for women without an intimate but who nevertheless had a confiding relationship with someone else. The rating of "c" was for women who had a confidant who was seen less than once a week. The rating of "d" was for women not mentioning a confidant. It was found in the community sample that only 4% of those with high intimacy and experiencing a severe event or major difficulty had a psychiatric disturbance, while 38% of those with low intimacy and experiencing a severe event or major difficulty experienced a disturbance. For those with no severe events or major difficulty intimacy had little effect upon disturbance rate. Thus intimacy appears to act as a powerful mediator between a severe event or a major difficulty and onset of disorder. When seven women were dropped from the analysis because the severe life event they experienced altered the existence of a confidant, results were substantially the same.

When working class women were compared with middle class women in

terms of an "a" relationship differences were found. It was found that during the child rearing years working class women are less likely to have a confidant with only 37% experiencing an "a" relationship.

Three other factors were also found to mediate the effect of severe events and major difficulties. Loss of mother by death or separation by age eleven, having three or more children aged fourteen or less at home and lack of full or part-time employment. As with intimacy these factors were found to not raise the chances of onset in the absence of either a severe event or a major difficulty. 43% of the working class women had three or more children aged fourteen or less, compared to 14% of the middle class and more of the working class had suffered an early loss of mother 9% vs 3%. No social class differences were found in employment status. The women were given a score for each vulnerability factor (0-4). The proportion with an onset among those with an event or difficulty ranges from 6% for those with 0 or 1 vulnerability factors, 45% for those with 2 and 100% for those with 3 or 4.

Fourteen percent of the middle class women had two or more vulnerability factors compared with 37% of the working class women. Thus, working class women experienced more vulnerability factors. On three of the four vulnerability factors, results for the patients are similar to those obtained for cases in the community. When compared to normal women, patients were twice as likely to have experienced early maternal loss, twice as likely not to have an "a" relationship and one-third were not employed before onset. However, patients do not differ from normal women in the proportion having three or more

children aged fourteen or less. The reason for this may be that women with young children at home may have a lower rate of contact with any doctor for psychiatric symptoms.

Results from this study suggest that lack of an intimate confiding relationship, loss of mother before age eleven, presence of three or more children in household fourteen or younger, and lack of employment are all vulnerability factors. That is, in the presence of an event or difficulty they increase the likelihood of developing a psychiatric disorder but in the absence of such events they have little effect. The finding that working class women experience three of these vulnerability factors to a greater extent help to explain the social class difference in mental illness rates.

Roy (1978) explored the four vulnerability factors found by Brown, Bhrolchain and Harris (1975) in depressed female outpatients seen at the Maudsley Hospital, depressed in or outpatients from the Dulwich Hospital and eighty four matched controls from a gynecological unit with no past history of depression. Through chi-square analysis it was found that more depressed working class women than working class controls had a nonconfiding relationship with husband, similarly, more depressed middle class women experienced a nonconfiding relationship than did controls. Furthermore, the working class and middle class depressed patients had poorer marriages than controls. The experience of either loss of mother or father by age seventeen was greater in working class depressed patients than in matched controls. This factor did not differentiate middle class patients from controls.

However, when father loss was examined separately, middle class patients experienced this more than matched controls. The presence of three or more children under fourteen in the home was related to depression for working class women but not for middle class women in differentiating the depressed patients from controls. Similarly, unemployment was related to depressed working class women but not depressed middle class women. A history of depression in first degree relatives was greater in middle class patients but not in working class patients.

Results from this study led Roy to conclude that this confirms Brown et al's (1975) findings that loss of mother before age eleven, three or more children under fourteen years, and lack of full or part time employment are associated with depression in working class women. He also reported that depression in middle class women is associated with separation from father before age seventeen and lack of a confiding marital relationship. Roy added that personality factors may contribute to these vulnerability factors, particularly in relation to marital harmony and employment. Also these four factors may not be specific to depression but also may apply to other psychiatric disorders as well.

Tennant and Bebbington (1978) applied log linear analyses to Brown et al's data (1975) to determine if the same results would be found. Four log linear analyses were performed each examining the association between one of the four vulnerability factors and life events and caseness.

Results show in each instance that vulnerability factor-caseness and life event caseness contribute to the total variance. In no instance does the second order interaction make any meaningful contribution. Thus the best model for the so called vulnerability factors is that they have an effect somewhat similar to the separate provoking effect of life events. There is no evidence for any synergy model such as that of vulnerability. Tennant and Bebbington feel that Brown's study has many conceptual and methodological problems. Brown et al attempted to examine three variable relationships by partitioning the 2x2x2 contingency table into a 2x2 table, which is not a valid test. Log linear analysis is more complex and can be used to assess the relationship between three or more variables in multidimensional contingency tables. The technique allows one to distinguish between models of mutual dependence, partial independence, pairwise association, and second order interaction. Other criticisms of Brown et al's work include the problem of the confounding of vulnerability factors and provoking agents. The assumption that vulnerability factors proceed provoking agents. The factor "parental loss" is actually a conglomerate of three separate variables (loss through death, separation of one parent, marital separation of the parents). On the basis of these methodological and conceptual problems Tennant and Bebbington conclude that the social factors chosen by Brown et al are not as clear cut as they claim and their findings do not provide a sound basis for their social model of depression.

Summary of Findings

In reviewing the various studies exploring the buffering hypothesis in case control designs results are mixed. Two studies found evidence for only direct effects of social support, while two others found evidence for only buffering effects and one study found evidence for both a direct and buffering effect occurring simultaneously. Lack of a confiding relationship with spouse, loss of mother by age eleven, presence of three or more children under age fourteen and lack of full or part time employment were found to be and positively related to greater symptomatology only under periods of stress. Brown, Bhrolchain and Harris (1975) termed these four factors "vulnerability factors" as did Roy (1978) who replicated these findings. In contrast, when Tennant and Bebbington (1978) replicated Brown et al's study only direct effects of the four factors were found. A different statistical analysis performed by Tennant and Bebbington possibly explains this contradiction. In Miller and Davidson's (1976) study, threatening life events were found to have stronger predictive power than social support. Perhaps this was because only number of casual friends was used as a criterion for support, and it has been found that diffuse, casual support is not as pertinent as close confiding ties. It can be concluded that results are dependent upon the statistical analysis employed and type of social support that is considered.

General Population Studies of Buffering Effects

Introduction

Most studies exploring the buffering hypothesis are concerned with

the effects of lack of social support in the general population. In these studies, subjects ranging from no symptomatology to high levels of symptomatology are compared in terms of level of social support. It is hypothesized that those with inadequate levels of social support will experience greater psychological distress than those with adequate social support.

Several studies have examined Brown, Bhrolchain and Harris' (1975) four vulnerability factors in general population samples.

Campbell, Cope and Teasdale (1983) attempted to replicate Brown et al's (1975) findings in a sample of one hundred and ten working class women in Oxford City, having at least one child under fourteen living in the home. Through administration of the Present State Examination, 16% were found to have an onset of psychiatric disorder. Thirty-one percent of the 44% who had an event or difficulty had an onset of affective disorder compared with 5% of those without a provoking agent. Fifteen of the eighteen percent of those who had an onset of disorder had a provoking agent occur during the last year. Only lack of an intimate confiding relationship with husband or boyfriend was found to operate as a vulnerability factor. There was a trend for the presence of three or more children under age fourteen to act as a vulnerability factor. When subjects were grouped into one of three groups: 1) an intimate relationship/less than three children, 2) no intimate relationship/less than three children, 3) no intimate relationship/three or more children, there was an increase from group one to group three in the proportion of women who had an onset of

psychiatric disorder. Group three had higher symptom scores than group one.

It was concluded from this that the presence of three or more children at home under age fourteen contributes to a greater vulnerability to stress when it is found in combination with lack of an intimate relationship. In the absence of a provoking agent neither presence of three or more children, nor lack of an intimate confiding relationship were related to psychiatric disorder.

In another study, re-examining Brown et al's (1975) four vulnerability factors, Solomon and Bromet (1982) administered the Schedule For Affective Disorders and Schizophrenia to 435 mothers of at least one child under age two in two semi-rural regions of Pennsylvania. One region was considered to be a high stress area due to a nuclear accident that had occurred. The other area also had a comparable nuclear plant, but it was considered a low stress area because no accident had occurred. A short life events scale measuring stressful life events in the previous twelve months was also administered.

The one year prevalence rate of affective disorders in the high stress area mothers was higher than that of the low stressors comparison group (15% vs 8%). Chi-square analyses indicated that the high stress area mothers with three or more children under fourteen did not have a higher disorder rate than high stress mothers with fewer children. Similarly, the unemployed high area stress mothers did not have higher rates of affective disorders than those employed outside

the home. On the other hand, high area stressed mothers who did not identify their husbands as confidants had a higher level of depression/anxiety. No such relationship was observed in the non-stressed group.

The log linear approach was employed to examine the interrelationship of the vulnerability factors, stress and affective disorder. The rate of disorder was higher in the women from the high stress area. Contrary to predictions based on the vulnerability model, no second order interactions were observed. That is, having spouse as a confidant did not reduce chances of developing an affective disorder in the high stress area group.

A second set of analyses was carried out using life events as the provoking agent. The women were divided into a major stress and a minor/no stress group and analyses were conducted separately according to area. In the high stress area group, only identifying husband as a confidant was related to affective disorder in mothers experiencing major stress. This was not found for the low stress area groups. When life events were examined irrespective of area, they were not associated with affective disorders in either area.

It was concluded from this study that results for the most part are not consistent with Brown et al's results. The failure to identify husband as a confidant was the only factor associated with increased affective disorder among women who experienced high stress. However, when a multivariate modeling procedure was used, no support was found for the buffering hypothesis.

One possible reason for this discrepancy between present findings and Brown et al's findings may be that methodological differences resulted in different results. For example, this particular study took place in semi-rural areas of Pennsylvania not in Inner London; this sample was chosen from birth announcements rather than randomly as in Brown's; the age range was only 18-43, not 18-65 as in Brown's; and the analysis diagnostic criteria was different. Also a different statistical analysis was undertaken in this study. This is perhaps very likely considering the fact that when Tennant and Bebbington (1978) employed log linear analysis to the data they too failed to find evidence for the buffering effects of these social factors.

Costello (1982) attempted to replicate Brown et al's findings with a sample of 449 lower and middle class women in Calgary. The procedure followed closely that used in the Camberwell Study. Psychiatric data was obtained by the shortened form of the Present State Examination. A woman was considered to have an illness at a case level if her index of definition was six or above. It was found that 38 women had a typical onset of depression. There was an association between the occurrence of severe events and the onset of depression.

The only factor found to be associated with depression was that of a confiding intimate relationship with spouse. Twelve of thirty one depressed women with a spouse or boyfriend (39%) did not have an intimate relationship, whereas fifty eight of 355 normal and threshold women (14%) did not have an intimate relationship. Presence of a confidant other than spouse or boyfriend was also less likely in the

depressed group. When data were analyzed by log linear methods no interactions between the four factors, stress and depression were found.

Costello suggests that one reason for the discrepancy in findings may be that the role of social factors in relation to depression may be community and time specific. For one thing, the members of the working class of Calgary are probably more affluent than those in London. However, it is interesting to note that in all three studies employing a log linear analyses no buffering effects were found to exist. This would lead one to conclude that the effects of social factors are direct rather than buffering. In particular, presence of an intimate confidant appears to have the strongest direct effects.

Several studies have found both direct and buffering effects of social support. For example, Lin, Simeone, Ensel and Kuo (1979) examined the relationship between life stress (modified Holmes Rahe Scale), Social support (close friends in area, getting together with close friends, frequency of talking to neighbors and involvement in activities), and psychiatric symptoms within the last six months among 121 male and 49 female Chinese Americans living in the District of Columbia.

Through multiple regression analysis it was found that stressful life events and social support are important factors in explaining psychiatric symptoms even when marital status and occupational status are taken into account. Social support contributes to the explained variance in psychiatric symptoms. Marital status, life events and

occupation combine to explain about 8% of the variance. The variance explained in psychiatric symptoms increases to 21% when social support is incorporated into the model. To test for interactive effects of social support and life events a series of t-tests were performed between groups high on both social support and stress, low on both, low on one, high on the other. According to the buffering hypothesis under periods of high stress, high social support is effective in reducing psychological distress, while under low periods of stress high social support is ineffective. In this study this was found when the stressor level was high, where the low social support group experienced greater symptoms. However, it was also found that when the stress level was low, the low social support group experienced greater symptomatology. Social support levels had no effect on symptoms when the stressor level was medium.

From this study the authors concluded that a simple additive model of social support and stressful life events exists with each contributing to the explained variance. Evidence for a buffering hypothesis is less clear and there is inconclusive evidence that social support moderates between stressors and illness. It was also concluded that social support was more and negatively related to symptoms than stressful life events.

Dean and Ensel (1982) examined the relationship between social support (close companion, having enough close friends over 6 months) stressful life events (past 6 months), personal competence (Campbell's 1960 scale) and depression (CES-D) in 871 adults aged 17-70 in the

Albany Schenectody-Troy SMSA area of New York State. As in the last study, social support was found to have the largest and most significant negative relationship with depression than the other two variables. Results of this study regarding the buffering hypothesis varied according to gender and age. For females, only, social support was found to mediate the effects of life events on depression. Competence had an indirect effect on depression in females as it also is moderated by social support. For young males both competence and life events have a strong direct effect on depression independent of social support. For middle aged subjects life events show a direct relationship to depression for both sexes and competence now has a effect for females as well as males.

Another study exploring the relationship between social support (spouse as confidant, relatives and friends near, and church attendance) life events (modified Holmes & Rahe), personal competence (Campbell et al 1960), and depression (CES-D) was performed by Husani, Neff, Newbrough and Moore (1982). Subjects in this study were 965 white rural married adults from Tennessee, Oklahoma and Ohio. A multiple regression analysis revealed that higher CES-D scores were found more among subjects reporting more life events, less competency, dissatisfaction with their marriage and/or spouse, and those perceiving their spouses as not being confidants. While main effects were found for both sexes, buffering effects of social support were found only for females. It was concluded in this study that there is some evidence that personal competence has a greater moderating effect than social support.

In a study by VanFossen (1981) the relationship between job stress, spousal support and depression (Lipman et al 1969 and Derogatis et al 1971) was explored. Subjects in this study consisted of 624 employed husbands, 601 unemployed wives, and 269 employed wives. Multiple regression techniques revealed that in all groups those who indicate their spouses affirm and appreciate them are considerably less likely to be depressed. Husbands who report depression are likely to indicate that they do not share intimacy with their wives and their wives do not appreciate them. For husbands, expressive support of spouse is a buffer when stress occurs on the job. Depression afflicted approximately 30% of the husbands who were not treated well by others on the job and who were not supported by their wives, but only 14% of those who are not treated well but receive support from wife were depressed. For the nonemployed wife, affirmation by spouse is the greatest predictor of depression. For the employed wife, intimacy is not related to depression while affirmation and inequity are related. It was further found that spousal support buffered the stressful effects of work overload in employed wives. 39% of wives with work overload reported being depressed; this figure increases to 50% when they feel that support from husbands in helping them with family problems is lacking.

Monroe (1983) tested for main and buffering effects of social support through a retrospective and prospective design. Seventy-five employees of a moderate sized corporation were administered the PERI Life Events Scale, Marital Coping Resources Questionnaire (Rose et al,

1978), the General Health Questionnaire and The Medical Symptom Inventory to measure physical symptoms.

In the retrospective analysis it was found that social support was related to psychological symptoms. However, social support was not related to physical symptoms.

In the prospective analysis it was found that when social support was entered alone into the regression equation, support continued to be highly predictive of follow-up psychological symptoms. However, when prior symptoms were controlled for (by entering them first into the equation) support no longer predicted follow-up symptoms. In contrast, prior symptoms were very highly related to follow up symptoms none of the interactions between support, prior symptoms and support, and life events were found.

With regard to physical symptoms, support was found to be related to follow up physical symptoms when support was entered alone into the equation. When prior physical symptoms were controlled, support continued to be highly related to symptoms. The support x initial symptom interaction term was related to follow up physical symptoms. Support x undesirable events occurring during both six month intervals and the year total were related to symptoms. Support x neutral ambiguous events for the first six month period and the year total were related to symptoms. Support x desirable events during the first six month period was also related to symptoms. From the results it was concluded that findings differ according to type of design, control variables taken into account and type of disorder considered.

Cohen, McGowan, Fooskas and Rose (1984) studied the relationship between negative life events and psychological disorder and the roles of positive life events and received and perceived support in moderating negative events. Ninety-two undergrads were administered the College Student Life Events Schedule, Inventory of Socially Supportive Behaviors (tangible aid and emotional assistance) and the ISEL (perceived availability of potential social resources). Psychological disorder was measured by the Langner-22 and the Beck Depression Inventory.

A cross-sectional analysis at time one revealed that negative events were positively correlated with Langner-22 and BDI. Hierarchical regression analyses were conducted to test the relationship between time one life events and the time one measures of the dependent variable. There was a main effect for negative events but not positive events. The total ISEL (perceived) and mean helpfulness rating was negatively correlated with L-22 and BDI scores. Received support (ISSB) was not correlated with L-22 and BSI scores.

Regression analysis revealed main effects for life events BDI, L-22, and main effects for perceived support, BDI, L-22. Interaction effects between negative life events and perceived support were also found, BDI, L-22. No main or interactive effects were found for received support.

In a prospective analysis where the level of initial disorder was controlled, main effects were found for negative life events, BDI, L-22. Main effects and interactive effects for perceived support were

found. No main or interactive effect was found for received support. Results of this study lead to the conclusion that perception of social support is crucial.

Sandler and Barrera (1984) investigated the buffering hypothesis among seventy-one undergrad students. Students were administered the Inventory of Socially Supportive Behaviors, the College Student Life Events Schedule and the Behavior Symptom Inventory to measure psychological symptoms.

Zero order correlations revealed negative life events to be positively related to BSI symptom scores total BSI score, depression and somatization. Neither the ISSB nor total network size were correlated with any of the symptom measures. But support satisfaction showed a negative relationship to anxiety, depression, and the total BSI score.

To evaluate the role of support as a stress buffer a hierarchical multiple regression analysis was used. Social support was found to interact with stress in the prediction of anxiety. Dividing the sample at the median on the ISSB and computing the correlations between stress and anxiety yielded the surprising finding that stress correlated more highly with anxiety for the high support than for the low support group. This is contradictory to the buffering hypothesis which contends that high social support reduces the effects of stress. Stress x support interaction was found for somatization and total BSI score. When splitting the sample at the median for support satisfaction the correlation between stress x disorder was higher for

the low satisfaction than for the high satisfaction group. This is in accord with the buffering hypothesis. A network size x stress interaction was obtained in the regression with somatization. A stronger relationship was found for the large network size than the low conflicted network. Network size yielded a interaction with stress in regression on the somatization variable. Stress and somatization was higher for the high conflicted network group. All four of the correlations between conflicted network and disorder measures were positive, while all four nonconflicted network size correlations were negative.

From the results it was concluded that support satisfaction provided the most compelling evidence for a positive effect of support, while conflicted network size demonstrated the buffering hypothesis. It was suggested that further research on the determinants of support satisfaction is needed.

Miller and Lefcourt (1983) examined the relationship between life events (Coddington Life Events Checklist), intimacy (Miller Social Intimacy Scale) and profile of mood states in undergrad University of Waterloo students. Through multiple regression analysis it was found that intimacy and negative life events scores were independent predictors where intimacy explained an additional 12% of the total variance, beyond the 17% explained by negative life events. The interaction term did not add to prediction power. In contrast an interaction was found between intimacy and positive life events. Positive life events accounted for only 5% of the total variance with

the intimacy score explaining an additional 22%. The interaction term accounted for an additional 5% of the variance. From these results the authors concluded that those lacking an intimate relationship are prone to high levels of emotional disturbance, especially if negative life events have also occurred.

Norbeck and Peterson-Tilden (1983) examined the buffering effect of social support in one hundred and seventeen women aged 20-39 who were pregnant. Subjects were administered the Sarason Life Experiences Survey, the Cohen and Lazarus Social Support Questionnaire, the Rubin Depression Adjective Checklist, Spielberger's State-Trait Anxiety Inventory and the Rosenberg Self Esteem Scale. A hierarchical multivariate model was used to test the impact of psychosocial variables first on emotional disequilibrium and then on pregnancy complications, while controlling for obstetric and demographic variables. Life stress accounted for 21.4% of the variance in emotional disequilibrium and social support accounted for 6.5%. The interaction of life stress during pregnancy and tangible support was significant for each type of complication. Those with high stress and low support had the highest rates of complications. From this study it was concluded that both direct and buffering effects of social support were found.

Turner and Nah (1983) explored the relationship between social support, stressful life events, personal control (Rotter's Scale) and psychological distress (Peterson & Kellam, 1977) in 312 women two to four weeks after giving birth who were residents of Ontario and aged

17-44. Multiple regression analysis revealed that social support was a powerful factor within the upper and middle class groups, but no contribution was observed in the lower class when stress was not in the equation. Variations in social support and personal control were of greater importance for the middle class. While main effects of social support were found in the middle class women, buffering effects of social support were found in the lower class women. For the lower class women, social support was only relevant under high stress conditions.

Turner (1981) explored the buffering hypothesis with four different data sets. One data set consisted of 293 new mothers, another consisted of 65 mothers having problems in parenting, the third was of 420 adults with onset of hearing loss and the final data set was of 100 inpatients diagnosed as functionally psychotic. It was found that for all data sets there was a positive relationship between social support and measures of psychological well being (Behavior Symptom Inventory, BSI), except for the anxiety sub-dimension in the case of maladaptive mothers.

With data from the 293 new mothers, psychological well being was regressed on social support and life stress and on the interaction between them. Independent associations were observed for both social support and life events, but no interaction term was found. However, Turner mentions that despite the failure of the interaction term to contribute to the equation this analysis does not effectively contradict the buffering hypothesis because the correlation between

stress and the interaction term was high and confident interpretation is prevented.

The sample was trichotomized on life event stress level and separate zero order correlations were calculated. The positive relationship between social support and psychological well being was higher for the high stress group than the medium stress and low stress group. In addition, the partial correlation between the stress x support interaction term and well being, controlling for main effects of social support is .29. From this it was concluded that buffering effects are occurring. Social support appears to have main effects which are most important in stressful circumstances.

The sample was further divided into three social class groupings based upon husbands occupation. Within the middle class (and to a lesser extent the upper class) social support was associated with psychological well being across all levels of stress, which indicates a direct effect. However, that these relationships tend to be higher as stress increases is also consistent with the buffering hypothesis. For the lower class the buffering hypothesis was supported as only those scoring high on stress benefited from social support.

Kaplan, Robbins and Martin (1983) explored longitudinally the relationship between social support, self rejection, life events and psychological distress. In 1972-73, 7,618 seventh graders in the Houston School District were given questionnaires and again in 1980, 1633 of the initial sample completed a second questionnaire. Through least squares regression analysis all variables except routine life

events, were found to have main effects. Self derogation, felt rejection by peers, felt rejection by family, bad events, failure to meet expectation events were all positively related to psychological distress.

It was found that self derogation interacted with bad events, change in routine events and failure events to increase the prediction of psychological distress. Bad life events were found to interact with felt rejection by peers in predicting distress. Therefore it appears that social support of peers has main direct effects as well as moderating effects upon psychological distress, while family support only has direct effects in adolescents and young adults.

Some studies have only found evidence for buffering effects of social support.

Wilcox (1981) administered the Psychiatric Epidemiology Research Interview (PERI) a life event scale, Social Support Questionnaire, Social Support Index, Langner-22 and the Mood-States-Tension Subscale to 300 adults of a large South Western Community in the United States. The interaction term of the PERI and the Social Support Index accounted for twelve percent of the variance in predicting Langner scores. Thus the relationship between stressful life events and psychological distress is dependent upon the level of social support. High social support cases show only a slight linear regression of Langner symptom scores on stressful life events; low social support cases on the other hand display a substantial linear regression. Thus as social support decreases the slope of Langner symptom scores and PERI scores become

steeper. This finding is in accord with the buffering hypothesis.

The results of analysis with the profile of Mood-States-Tension subscale as the criterion variable reveal essentially the same pattern. The PERI by social support index interaction accounts for 99% of the variance in Mood-States Tension scores. The relationship between life stress and the Profile of Mood-States Tension subscale measure is very slight at high levels of social support but decreases steadily as social support index scores decrease. The PERI X number of supporters (Social Support Questionnaire) interaction accounted for roughly 3% of the variance in explaining Langner scores. With few supporters, the slope of Langner scores on PERI is substantially positive; with many supporters the slope of Langner scores on PERI is negligible. Thus the differential slope of Langner scores on PERI is dependent on the number of supporters by life stress interaction rather than just on the number of supporters. The PERI by number of supporters interaction accounts for 3% of the variance in explaining profile of moods-states Tension scores. The social support by life events interaction rather than social support alone contributes most strongly to the difference slope of POMS-T on the stressful life index. Such findings are in accord with the buffering hypothesis.

Gore (1978) explored longitudinally the effect social support has on 54 male rural and 46 urban blue collar job terminees in terms of depression, illness and level of serum cholesterol. For comparison 74 controls working in comparable jobs were also interviewed. The men were interviewed at five stages 1) anticipation - 6 weeks before the

scheduled shut down of the plant, 2) termination - one month after closing, $\frac{1}{2}$ were unemployed, $\frac{1}{2}$ starting new jobs, 3) readjustment - 6 months after closing - 90% had found new jobs, 4) one year after closing, 5) two years after closing. Stress was measured by the stage of the job change experience. The early periods of anticipated and actual job change were assumed to be more stressful than the later stages. Additional measures of stress were: weeks unemployed, and economic deprivation. Social support was measured by a thirteen item index covering the individual's perception of wife, friends and relatives as supportive or unsupportive, frequency of activity outside the home with friends and relatives and perceived opportunity for engaging in social activities which are satisfying and allow him to talk about his problems.

It is important to note that support was not associated with stress as indicated by weeks unemployed or degree of economic deprivation. The rural terminees and controls had a higher average value on social support than the urban terminees. This was partly due to reports of higher kinship support and affiliation which reflected the ethnic cohesion of the largely Polish American sample in the rural area. In addition, the community response to its threatened economic base promoted an atmosphere of concern not evident in the urban area.

For the outcome variable, cholesterol level, there was a drop in mean values from the first to the last interview for all men except the unemployed who are also unsupported. This trend is not evidenced in the longitudinal data on the controls. Thus, social

support does appear to buffer the effects of unemployment when one considers cholesterol level as the dependent variable.

For number of illness symptoms the unsupported who become unemployed evidenced elevated illness complaining at stage one and two which drops with re-employment, so that there are no differences between groups.

The effects of social support on depression were more evident than the effects of unemployment. While the unsupported who experienced considerable unemployment are the most highly depressed, there is no evidence of longitudinal change, making it difficult to infer that the depression is a consequence of the unemployment experience. It was found that social support level affects one's perceptions of the amount of economic deprivation experienced. Both the supported and unsupported terminees who did not find a job by stage two report increases in deprivation. However, when by stage three most men have found new jobs, mean values remain elevated for the unsupported, while they drop for the supported and remain only slightly more elevated than for the group quickly re-employed. The unsupported finally show a drop in deprivation from stage four to stage five, two years after termination. Social support evidently buffers perceptions of economic deprivation, but is sensed deprivation the psychological link to the health outcomes?

For men unemployed at stage two, perceived economic deprivation and measures of illness symptoms and cholesterol levels at this time were not related for both the supported and unsupported group. However,

perceived economic deprivation was associated with depression for the unsupported men only.

It was concluded that these findings indicate that perception of deprivation should be seen as an additional affective response to unemployment which is buffered by social support, but uncorrelated with measures of illness behavior and cholesterol levels. It was added that consistent differences in the dependent variables by level of social support indicate that social support modifies severity of psychological and health related responses to unemployment.

Syrotuik and D'arcy (1984) examined the effect spousal and community support has on job strains for 455 married males who were employed full time in Saskatchewan. The General Health Questionnaire was administered to measure anxiety, depression and lack of energy. Spousal support was found to be more important for the prediction of anxiety, depression and the total score, while community support was related to lack of energy. Spousal support was found to buffer the effects of job pressures when total G.H.Q. Score, depression and anxiety subscales were considered. Community support was also found to have a buffering effect. When community support was low, poor job opportunities had a more pronounced effect on mental health. When community support was high, poor job opportunities were not as important.

Ouellette-Kobasa and Puccetti (1983) examined personal social assets and perceived social support as moderators of the effects of stressful life events on illness onset. One hundred and seventy middle

and upper class executives were administered an adapted schedule of recent life events, family environment and work environment scale and several measures of "hardiness" (alienation from self, alienation from work, powerlessness, security, external-internal locus of control). The dependent variable was measured by the Seriousness of Illness Survey.

Analysis revealed a positive correlation between stressful life events and illness. However, enough of the illness variance remained unexplained by stressful life event scores that an examination of moderator variables was justified. A three way analysis of variance showed main effects of hardiness and life events. Boss support did not show main effects but did interact with stressful life events to predict illness. Thus when stressful life events are high, perception of boss support reduces symptoms. A two-way interaction that was found suggests that being low in hardiness while perceiving one's family as supportive increases illness scores. The researchers explained this contradictory finding by concluding that most of the stressful life events that occurred dealt with problems in the work place and therefore boss support is pertinent, while family support may actually foster inappropriate handling of coping. The importance of a multidimensional model was emphasized.

Eaton (1978) re-analyzed Myers et al (1971) data of 720 adults from New Haven using panel regression techniques. It was found that for those living alone and the nonmarried the effect of life events on psychiatric symptoms at time two was greater than for those living with

others or the married. This is in accord with the buffering hypothesis. It is assumed that the status of being married and having others living in the household are both important sources of social support and the presence of one or both reduces the negative effects of life events.

Hobfoll and Walfisch (1984) examined the relationship of self concept and the presence of intimate social relationships with women's reactions in an extreme crisis situation. Sixty-eight Israeli women who were found later to have benign tumors were interviewed just prior to biopsy and again three months later. Social support was measured by Hirsch's (1980) Social Network List and Self Concept was measured by Pearlin and Schooler's, 1978 scale. Spielberger's State-Anxiety Scale and the CES-D measured the dependent variable.

Prior to biopsy, multiplexity (number of people with whom one shares more than one interest with) was negatively correlated to state anxiety and depression. A negative correlation between size of social network and state anxiety was found. No interaction effect was found between support and self concept. Three months after surgery had occurred and the women were no longer in a crisis situation neither size or multidexity of the social network were related to state anxiety or depression nor did either social network variable increase the explained variance when entered stepwise into regression equations for state anxiety and depression following hierarchical inclusion of self esteem and mastery. Given that social support was found to be relevant only under conditions of high stress it was concluded that the

buffering hypothesis should be viewed as a trend.

Nuckolls, Cassel and Kaplan (1972) studied the effect of "Psychosocial Assets" and life crises (Schedule of Recent Life Experiences) on pregnancy outcome of 340 women registered for obstetrical care in a military hospital. Psychosocial assets were defined as any psychological or social factor which contributes to a woman's ability to adapt to her first pregnancy. The Adaptive Potential for Pregnancy Scale was administered to assess such psychosocial factors as one's ego strength, marital happiness, relationship with parents, siblings and inlaws, adjustment to the community, friendship patterns and support and perceptions of the pregnancy.

Through correlational analysis it was found that neither life changes nor psychosocial assets taken alone were strongly related to pregnancy complications. However, in the presence of mounting life change women with high social assets had only one third the complication rate of women whose psychosocial assets were low. While in the absence of such life changes particularly for the period before pregnancy, the level of psychosocial assets was irrelevant. This interaction between life events and psychosocial assets in explaining pregnancy complications supports the buffering hypothesis.

Sandler (1980) investigated the stress moderating effect of older siblings in the home, number of parents in the home and ethnic congruence of 71 inner city children kindergarten age to grade three. A 32 item Recent Life Event Scale was utilized as the measure of stress

and child adjustment was measured by an 81 item scale derived from the Louisville Behavior Checklist. Pearson product moment correlations revealed that life events have a greater effect on adjustment when social support is absent. It was found that both presence of an older sibling in the home and two parents in the home moderate the effects of undesirable events on children.

Thoits (1982) explored the buffering hypothesis among various demographic groups in New Haven. Initially 939 adults were interviewed with regard to life events, number of close friends, house visits with neighbors, club attendance and religious services and psychological distress (MacMillan, 1957) and two years later 720 were re-interviewed. It was found that in general social support reduces the impact of undesirable events and health events given that in most equations the buffering coefficient was negative. However, in general, no support measure buffered the effects of undesirable events. Only participation in religious activities consistently reduces the distressing effects of health events. Number of close friends, degree of neighborhood visiting and frequency of organizational participation have only scattered influences on distress due to health events. It was found that neighborhood visiting and organizational participation are more stress buffering for women who experience undesirable events than for men. Neighborhood interaction was found to act as a buffer against health events for low income individuals and the nonmarried.

It was concluded that overall the buffering hypothesis in this study was unconfirmed. Furthermore, the greater vulnerability to life

difficulties displayed by disadvantaged groups cannot be adequately explained by the higher incidence of events or the lack of social support, either singly or in combination.

Some studies exploring the buffering hypothesis have failed to find support for it but have instead found only evidence for direct effects.

In a longitudinal study by Aneshensel and Frerichs (1982), 740 adults from the Los Angeles Metropolitan area were interviewed three times at four month intervals. Stress was measured as the number of discrete life event losses occurring either during the year prior to the first interview or during the four months separating each of the re-interviews. The measures of social support consisted of number of close friends and relatives and perceived support in time of need (during past two months). Four symptom scales were administered to assess depression, they were CES-D, hopelessness scale (PERI), a measure of positive affect (General Well Being Questionnaire) and a death ideation scale.

Direct effects of stress on depression were limited to effects operating within a time period, the set of 4 month, 8 month, and 12 month lagged effects were not found.

It was concluded that while the effects of stress on depression at the three re-interviews can be considered to be of equal magnitude, they differ from the effect at time one possibly because stress at time one pertains to the prior twelve months and not to the four months since a previous interview. Thus, when prior levels of depression are controlled, stress experienced since the prior interview has a slight

effect on increasing levels of depression from previous levels.

In examining the causal effect of depression on subsequent stress it was found that depression was associated with a slight increase on subsequent stress over a lagged period of four months. It should be noted that this direct effect is found after the prior level of stress is controlled and that it can be considered to be of equal magnitude across the 3, 4 month re-interview periods.

A direct negative relationship was found between social support and depression both within time one and time four. The time lagged effects of support on depression are most difficult to interpret. The set of 4-, 8- and 12- month lagged effects improved the fit of the model during its construction but only the twelve-month affect has a critical ratio large enough to be considered relevant in the final model. This effect, however, has the sign opposite to the hypothesized effect, the within-time effects and the overall correlations. It would thus appear to represent a suppressor type of effect. The reciprocal pattern from depression to support is also complex. Only one of the three time lagged paths are related within the current formulation of the model and those paths have opposite signs. It was summarized that depression would appear to have little direct effect on change in levels of support over one year.

It was concluded that the results are consistent with the viewpoint that social support has a direct positive impact on the individual's well being irrespective of the level of stress.

Bell, LeRoy and Stephenson (1982) found evidence for direct effects

of social support in a cross sectional survey of 2,029 adults in SE U.S.A. Stressful life events measured by Paykel's Method were found to be positively related to depression scores at the level. A direct inverse relationship was found between social support (close confiding relationship with husband or boyfriend, friends and relatives nearby, church and club membership) and depression. Those in the lowest social support group had the highest mean depression scores, while those with the highest social support had the lowest mean depression scores. An analysis of variance was conducted on each of the rows and columns at each level of social support and group means on the depression scale for each number of life events. Similarly, at each number of life event categories group means on the depressive scale for various social groups were analyzed.

With an increase in number of life events there was a consistent increase in the mean depression scores for all levels of social support. Within each number of life event categories the mean depression score decreases as the level of social support increases.

To test for interaction a three way analysis of variance was performed. It was found that the main effects of social support and life events and socioeconomic status existed when each of the two other variables were controlled. Data from regression analysis signify that social support, life events and socioeconomic status constructs provide a good exploratory model of direct effects. The interaction of social support and life events does not provide any more explanatory power than is already provided by these direct effects.

Lin and Ensel (1984) investigated longitudinally the relationship between life events, social support and depression mobility. At time one, 1091 adults in New York State were interviewed regarding number and type of life events that had occurred over the last six months, number of close friends and companions, and depression was measured by the CES-D. One year later, 871 subjects of the original sample were reinterviewed. Through zero-order correlations it was found that the non-depressed were characterized by less than average frequency of undesirable life events and high social support at time one and one year later. Those depressed at both points in time (chronic depressed) were characterized by high levels of undesirable life events and low levels of social support at both time one and one year later. For those who had recovered from depression at time two, there was a decrease of an undesirable level of events from time one to time two and there was an increase in strong tie support. For those who showed deterioration at time two, there was an increase of undesirable life events at time two, and a drop in strong tie support at time two. Sequential analysis was employed to determine the predictive ability of level of depression at time one, change in undesirable life events and change in social support to explain depression at time two. It was found that for those with a depressed mood at time one, experiencing increased undesirable life events increased the likelihood of remaining in a depressed mood at time two to 59%, while those who did not have such an increase had their probability reduced to 35%. For the nondepressed, experiencing an increase of undesirable life events made

the likelihood of becoming depressed at time two more likely than for those who did not (16% vs 10%). When social support was taken into account, the likelihood of being depressed at time two ranged from 72% for those who were depressed at time one, and who had experienced an increase of undesirable life events and a decrease in social support, to only 7% for those who were not depressed at time one, did not experience an increase in undesirable life events and had no decrease in strong tie support during the period. When the buffering effect was tested it was found that life events and social support only had additive effects. It was concluded that knowledge of previous depression, undesirable life events and close tie support enable identification of vulnerable groups.

Williams, Ware and Donald (1981) explored both an additive and interactive model utilizing longitudinal data of 2,234 adults in Seattle. Self administered questionnaires assessing life events, social support of close friends, relatives, neighbors and acquaintances and mental health were administered one year apart. Correlations were observed between a measure of socially desirable responding and mental health (positive correlation), life events (negative), social support (positive) and sex (higher for females). Consequently, social desirability was controlled for in all analysis.

Through multiple regression analysis social support was found to be related to good mental health while life events were found to be inversely related to mental health. The negative association between mental health and life events was apparent for those low, medium and

high in social support. This is contradictory to the buffering hypothesis, which states that under conditions of high social support, life events have less impact on mental health. It was concluded that evidence was found for only a simple additive model of the positive effects of social support and negative effects of life events on mental health.

Another longitudinal study finding direct effects of social support and life events was undertaken by Holahan and Moos (1981). A random sample of 245 males and 248 females in the San Francisco Bay area were administered two surveys one year apart. Social support was assessed by a Family Relationship Index (FRI), Work Relationship Index (WRI) and a traditional Social Support Index. Negative life events occurring over the previous year were measured by a modified Holmes Rahe Scale. Depression and psychosomatic symptoms occurring over the previous year were measured by symptom indexes.

The zero order and partial correlations for the FRI at one year follow-up showed an inverse relationship to depression for both employed and unemployed women, though they were not significant for employed men. For the WRI, the zero order and partial correlations demonstrated a inverse relationship to depression for both employed men and women. The zero order and partial correlations for negative life events showed a positive relationship to depression for all three groups. The zero order correlations for the FRI demonstrated a inverse relationship to psychosomatic symptoms for unemployed and employed women but were not significant for employed men. When initial levels

of maladjustment, life change and social support were controlled, the FRI showed a negative relationship to psychosomatic symptoms only for unemployed women. For the WRI both the zero order and partial correlations were inversely related to psychosomatic symptoms for men, though only the zero order correlation showed a negative relationship to psychosomatic symptoms for employed women. The zero order correlations for negative life events were positively related to psychosomatic symptoms for women and men. Whereas the partial correlations showed a positive relationship to psychosomatic symptoms only for women - employed women, unemployed women.

The longitudinal design of this study allowed initial levels of life change, social support, and maladjustment to be controlled for in the analysis. Therefore, from the results it could be concluded that changes in the supportiveness of the family and work environment over one year would be related to changes in psychological maladjustment over the same period. Results suggest that family support and life events are more important to women, especially unemployed women, while work support is more pertinent for men with respect to psychosomatic symptoms. The researchers explained that the reason why there is a tendency for the partial correlations of the psychosomatic symptom measure to be somewhat less robust than those for depression is probably due to the relatively greater stability of psychosomatic symptoms. A final conclusion made was that even though this study and many others have found a relationship between support and maladjustment, the relationship is low in an absolute sense.

LaRocco and Jones (1978) explored the relationship between job stress, social support of leader and co-workers and job dissatisfaction, lowered self esteem and increased illness in 3,725 U.S. navy enlisted men. Potential buffering effects of social support were assessed by moderated regression and subgrouping analysis. The results of the moderated regression analysis failed to provide any evidence that support moderates the negative effects of stress. The level of criterion prediction was increased when the support terms were added to the stress effects, but the inclusion of the stress x support interaction terms failed to produce any further increments in prediction. The subgrouping analysis also failed to support the buffering hypothesis. Social support was positively correlated with desirable outcomes regardless of stress level.

It was concluded from the findings that the effects of social support are positive and additive rather than buffering or interactive. Higher levels of support and reduced levels of stress were each related to the achievement of various desirable outcomes and support whether from one's leader or co-workers did not appear to be an effective means of removing the negative influences of stress produced by conflict and ambiguity.

In a study by Andrews, Tennant, Hewson and Vaillant (1978), a questionnaire assessing life events occurring in the past thirteen months, coping style (Vaillant), crisis support, neighborhood interaction and community participation was administered to 863 adults in Sydney. The General Health Questionnaire was utilized to obtain a

measure of psychological health, a score of above four indicated impairment.

When the sample was dichotomized into a high and low stress group, 18.1% of the low stress group and 34.5% of the high stress group were psychologically impaired. It was found that 21.6% of good copers and 28.3% of poor copers were psychologically impaired. Crisis support was the only social support variable which showed a relationship with impairment.

Neither coping style nor any of the social support variables showed any mediating effect on the relationship between life event stress and psychological impairment. Therefore, crisis support, coping style and life event stress are all independently associated with maladjustment. When subjects are grouped according to level of stress, crisis support and coping style, an increase of predicted risk was found from 12.8% among the most favored group to 43.3% among the least favored group. Thus including all three variables increased prediction power. It was concluded that one quarter of all psychological impairment in this sample could be attributed to life event stress while one third could be attributed to the combined effect of life event stress, poor coping style and poor social support. It was also concluded that quality of the supporting emotional relationship rather than the quantity of help available may be the principal determinant of effective crisis support. It is interesting to note that contrary to other studies stressful life events had more predictive power than social support.

Cutrona (1984) who explored longitudinally the effects of social

support and stress in eighty-five women before and after giving birth found results contradictory to the buffering hypothesis. Hierarchical multiple regressions were used to examine the importance of support variables (attachment, social integration, opportunity for nurturance, reassurance of worth, reliable alliance and guidance) as predictors of postpartum depression. Both initial depression levels and number of recent child-related stresses were strongly related to depression scores two weeks after delivery, accounting for approximately 26% and 16% of the variance in depression scores respectively. No social support variable was related at two weeks after delivery.

An interaction was found between guidance and number of stressful events encountered in the first two weeks after delivery. However, contrary to the buffering hypothesis, increasing levels of stress were associated with a weaker relationship between guidance and depression.

At eight weeks after delivery, the total provision score (all six factors) was negatively related to depression. Among the individual provisions social integration was negatively related. An interaction was found between social integration and stress but again it was opposite to the buffering hypothesis.

The authors explained the reason for finding effects of social support only after eight weeks by stating that immediately after giving birth a woman may experience depression due to physiological changes and during this time social support would have little effect.

The final two studies included personality factors and how they relate to social support in the study of the buffering hypothesis.

Ganellen and Blaney (1984) examined the buffering role of social support and personality when female undergrads were faced with life stress. Subjects were administered the Life Experiences Survey, Levenson Locus of Control Scale, Alienation Test, Social Perception Questionnaire and the Beck Depression Inventory.

It was found that the greater the level of social support, the greater the level of "hardiness", which supports the hypothesis that social support and aspects of a healthy personality are interrelated.

A three way analysis of variance revealed main effects for stressful life event, social support and two measures of hardiness, alienation from self and vegetativeness. Thus, those scoring low on life events, high on social support and low on alienation and vegetativeness are least likely to be depressed. No interaction effect was found between life stress and social support. In no instance was an interaction between hardiness and support found. Therefore, from this study only a direct relationship between support and depression was found in undergrad females, but no buffering effect emerged.

Duckitt (1984) examined the influence of personality factors on the relationship between social support and psychological symptoms among one hundred and thirty nine undergrad students. Negative zero order correlations between social support and Langer-22 scores were found. Social support was negatively correlated to anxiety and positively correlated to extraversion.

The only interaction term found was the extraversion x social support term. It was found that unsupported extraverts experienced

more distress than any other personality group. Therefore, extraverts appear to be more sensitive to social support and therefore buffering effects may be more operative for extraverts. This suggests that when investigating the buffering hypothesis one must take into consideration personality factors.

Summary of Findings

In reviewing studies exploring the buffering hypothesis in general populations results are confusing. Some studies found only direct effects, others found only buffering effects and some found both direct and buffering effects of social support to occur simultaneously. Confirmation of the buffering hypothesis appears to be dependent upon various sociodemographic factors. For example, many studies found buffering effects of social support among women only. Also, some studies found buffering effects of social support for the lower class and direct effects for the middle and upper class. Another factor to consider when exploring the effects of social support is personality. Good social support was found to be related to extraversion and in general a "healthy" personality. There was evidence that those who are extraverted are more vulnerable to inadequate social support and under times of stress they may require more support.

From this review it can be concluded that support for the buffering effect of social support is dependent upon other variables. This intercorrelation between social support and other factors raises the possibility that a third variable is responsible for the interaction between social support and symptomatology. For example, it could be

the case that personality deficits result in both symptomatology and poor social support. In order to determine causality, longitudinal studies which can assess social support and symptom level at two points in time and can control for prior symptom levels are required. In the few longitudinal studies which were included in this review all yielded either main effects or buffering effects or both. Although this increases one's confidence that social support precedes symptom development one must still keep in mind that a third variable may be responsible for both. Clearly, the ideal study would be longitudinal and not only included social support as the independent variable, but personality and various sociodemographic variables as well.

Patient Samples of Buffering Effects

Very few studies have explored the buffering hypothesis of social support among psychiatric patient samples. According to the buffering hypothesis it would be assumed that when patients are under stress they lack adequate social support which results in an inability to cope.

Roy (1981) investigated the four risk factors found in Brown et al's (1975) study in 187 hospitalized depressed patients aged 18-65 in Toronto. As in Brown's study some risk factors were found to occur more in the lower classes. Lower class women and lower class men experienced more parental loss by age seventeen. Unemployment was also more common for lower class women and lower class men. When the sexes are combined, the lower class have experienced more parental loss, have three or more children and are more likely to be unemployed. Poor marriage was not greater among the lower class. From these results it

was concluded that social class differences for the risk factors of early parental loss, unemployment, and three or more children do exist in inpatients.

Surtees (1980) investigated longitudinally the buffering hypothesis in eighty unipolar depressed inpatients at the Edinburgh hospital. Spearman correlations indicated that both individual close and diffuse support and aggregate components of both determined by interview two accounted for at best only 5% of the variance in follow-up Hamilton symptom severity scores.

Correlations obtained between the support measure determined at the third interview preceding follow-up and symptom severity scores at that time suggested stronger, but still a relatively weak relationship, the overall measure of support now accounting for 19.4% of the symptom severity variance. Results suggest that support was weakly associated with lower Hamilton rating scores at follow-up.

The aggregate measures of close and diffuse support and the individual support component concerned with the quality and availability of a confidant relationship were most strongly related to follow-up Hamilton scores.

One way analysis of variance revealed that the overall relationship between each support measure and outcome was related (existence of a confidant, close support of friends, support of living group, diffuse support such as attendance at clubs). In addition, Duncan's new multiple range test showed that the subjects with a close and reciprocal confiding relationship were assessed as having less severe

symptoms at follow-up. The same statistic applied to the aggregate indices of close and diffuse support revealed that those patients with at least some diffuse or close support had less severe symptoms at follow-up.

A composite index of residual adversity was based on only those life events and long term difficulties that were considered independent of the depressive illness. Patients were divided into an ill and a well group on the basis of their follow-up Hamilton rating scores, the point of division being at eleven. They were also classified according to level of social support and number of stressful events. The effect of having little or no social support was found to produce a relative risk of being ill 2.12 times those with social support. Patients with a high level of residual adversity remaining at follow-up were more likely to be "well" at follow-up if they had available support than those who had little or no support. Thus results suggest that overall availability of support influenced the outcome of the patients in this study.

Application of a logistic model to the data indicated that both availability of social support and the level of residual adversity influenced the outcome of patients at follow-up. However, the effect of these two variables was such that no interaction term was needed to satisfy the requirements of the logistic model. When an additive model was fitted to the data only the measure of close social support required an interaction term to provide a satisfactory fit to the data. For those patients with a high level of residual

adversity at follow-up quality of a confiding relationship was of critical importance for symptom outcome, as confidant quality decreased the mean symptom severity ratings increased. For those with a low level of residual adversity quality of an available confiding relationship was important but not as critical.

Results indicate that direct effects of confidant, close and diffuse support exist and in the case of confidant support there is also evidence for a buffering role against the negative effects of life stress.

Summary of Social Support Findings

The literature is somewhat consistent in the finding that lack of social support is related to behavioral costs. When direct effects of social support are studied it is found that psychiatric patients are more deficient in qualitative and quantitative aspects of social support than the normal population. It is also found that among patients, level of support is negatively related to severity of illness and poor outcome. Studies exploring direct effects among the general population found that those deficient in social support were more likely to be experiencing symptomatology than were those with good social support. Most studies tended to find that close confiding relationships were more pertinent to psychological functioning than diffuse, casual social support. Some studies found that women are more hindered by lack of social support than men. Surprisingly, a few studies actually found a positive relationship between level of support and symptomatology. These studies concluded that satisfaction with

support should be considered as it may be the case that social relationships may be negative and a source of stress rather than a benefit.

Findings regarding the buffering effect of social support under times of stress are mixed. Studies involving psychiatric patients found that buffering effects were more likely to be found when the measure of support was dealing with close, confiding relationships rather than a diffuse measure. With the general population it was found that certain samples were more likely to show the buffering effect. For example, the buffering effect was found to occur more among females, the lower class and the extraverted. Thus, it is apparent that finding a buffering effect is dependent on such factors as type of analysis, sample characteristics and support measure used.

From this review, it is apparent that a relationship between social support and behavioral costs does exist. Unfortunately, causality cannot be assumed due to the fact that most studies are retrospective in design. Clearly, prospective designs are required in order to unravel the question of causality.

CHAPTER THREE

PROCEDURE, HYPOTHESES AND STATISTICAL ANALYSIS

Procedure

The sample utilized was a group of 170 adult (17 yrs. - 80 yrs.) inpatients admitted to the Holy Cross Psychiatric ward. From October, 1, 1984 to July 31, 1985, all inpatients were approached and asked if they would volunteer to fill out the EDSCQ (MacFadyen and MacFadyen, 1984) and the Brief Symptom Inventory (Derogatis, 1975). Completion of the two questionnaires averaged thirty minutes for most inpatients. The only criterion necessary to be included in the study was that patients must have been recently admitted (within two weeks). The rationale behind this is that when inpatients are first admitted, symptomatology is most acute and the BSI will yield a more accurate diagnosis if administered early after admission.

The socio-demographic characteristics of the sample are as follows:

Table 1
Socio-demographic Characteristics of Sample

Characteristics	Percentages
<u>Sex</u>	
Female	45.2%
Male	54.7%
<u>Age</u>	
17 - 24	28.2%
25 - 32	29.4%
33 - 40	16.4%
41 - 50	11.8%
51 - 65	10.6%
66 - 80	3.0%
<u>Religion</u>	
Protestant	49.4%
Catholic	29.4%
Jewish	2.0%
Moslem	.0%
Hindu	.5%
Other	8.8%
None	9.4%
<u>Ethnicity</u>	
Caucasian	90.5%
Oriental	2.9%
East Indian	.5%
Arab	.0%
Metis	2.3%
Negro	1.1%
Treaty Indian	.5%
Non Treaty Indian	1.1%
Eskimo	.5%
<u>Citizen</u>	
Canadian	91.7%
U.S.A.	1.1%
United Kingdom	3.5%
Australia	1.1%
Europe	1.7%
Asia	.5%

Table 1 (Continued)

Characteristics	Percentages
<u>Native Language</u>	
English	90.0%
French	2.9%
Ukrainian	.0%
Other European	5.2%
Other	1.7%
<u>Marital Status</u>	
Presently married	29.4%
Single (never married)	42.3%
Widowed (over 2 years)	2.9%
Divorced (over 2 years)	8.2%
Separated (over 2 years)	.5%
Widowed (within last 2 years)	3.5%
Divorced (within last 2 years)	.5%
Separated (within last 2 years)	4.7%
Common-law	7.6%
<u>Educational Level</u>	
University/College	11.1%
Technical School	18.8%
Apprenticed Trade	2.3%
Secondary School	49.4%
Elementary	15.9%
Less than Grade 6	2.3%

(See Appendix I for further socio-demographic and treatment characteristics of the sample)

Instruments Used In Study

The independent variables (the individual environmental factors) were measured by the EDSCQ (Economic, Demographic and Social Characteristics Questionnaire) developed in 1984 by MacFadyen and MacFadyen. The EDSCQ consists of sixty-three items, all dealing with either an individual, social support, economic or demographic factor. Each item was designed to range from the least stressful choice to the most stressful. For example, item 3.036 asks: How many of your close friends do you have now? (1) four or more; (2) three; (3) two; (4) one; (5) none. Rank ordering of item choices from the least to the most stressful was based on empirical research as well as on a logical reasoning basis. Construction of each item in this way allows each individual item to be scored. Considering that not all item choices were out of the same total, a rated score out of ten was employed so that all item scores would be comparable. For example, with item 3.036, which has five choices, if number one was chosen the score would be $1/5 \times 10 = 2.0$; if number two had been chosen the score would be $2/5 \times 10 = 4.0$; and if number five had been chosen $5/5 \times 10 = 10.0$. If only four choices were possible, choice number one, $1/4 \times 10 = 2.5$, would be designated, and a choice of number four, $4/4 \times 10 = 10.0$ would again yield a maximum of ten. Addition of the individually rated items yields scale scores and a total score for the whole questionnaire.

The four subscales of the EDSCQ are: 1) The Individual Scale which is made up of seven items dealing with such factors as ethnicity, education, etc. The maximum score an individual could get on this

scale would be $7 \times 10 = 70$. Scores can also be converted into proportioned scores by dividing the raw score by 70 and multiplying by 100. For example, if an individual scores 35 out of 70 his score would be 50. 2) The social support scale is made up of twenty items dealing with quantitative aspects of familial, close friend and acquaintance support. The maximum score an individual could get on this scale would be $20 \times 10 = 200$. 3) The economic scale is made up of twenty-two items for single subjects and twenty-seven items for individuals who are or have been married. This scale deals with various economic aspects of an individual and his family and in the case of those who are or were married, information is also collected regarding one's spouse or ex-spouse. The maximum score a single individual could get on this scale would be; $22 \times 10 = 220$, and the maximum score a married individual could get would be $27 \times 10 = 270$. 4) The demographic scale is made up of nine items dealing with one's place of residence. The maximum score an individual could get on this scale would be; $9 \times 10 = 90$.

The total EDSCQ score is a composite of the four scale scores. The total score is yielded by either adding the four raw scale scores together or by adding the four proportioned scale scores together. For example, the maximum total a single person could have when raw scores are used is $70 + 200 + 220 + 90 = 580$. The maximum total a married person could have when raw scores are used is $70 + 200 + 270 + 90 = 630$. When scores are converted into proportions one has the benefit of comparing each scale with each other and comparing the single's total

score with the married's total score, and of weighting each subscale equally when the four proportioned scores are averaged.

The dependent variable in this study, a self report of psychiatric symptomatology, was measured by the Brief Symptom Inventory (BSI) developed in 1975 by Derogatis. The BSI is a fifty-three item self report measure which yields nine symptom dimensions (somatization, obsessive-compulsiveness, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism) and three global indices. In this study, only the G.S.I. - General Severity Index was considered at the global level. The GSI is a good overall measure of symptomatology as it combines information on numbers of symptoms and intensity of distress for each symptom.

In this study, patients were asked to rate how often in the last week they had experienced each of the fifty-three symptoms. Patients rated the degree to which they experienced each symptom on a five point scale, ranging from (0) not at all, (1) a little bit, (2) moderate, (3) quite a bit, to (4) extremely.

The BSI was normed on four different populations: 1) non-patient normal sample N = 719; 2) psychiatric outpatient sample N = 1002; 3) psychiatric inpatient sample N = 310; 4) adolescent, non-patient sample N = 2408. Raw scores can therefore be transformed into standardized T scores for any of the four populations. Norms for the males and females are slightly different, since it has been consistently found that females in our culture report significantly greater numbers of psychological symptoms than do males (Barnes & Prosen,

1984). A T- score of sixty or above is considered to be at case level for an inpatient population.

The BSI has been found to have good reliability and validity. Internal consistency coefficients were established on a sample of 719 psychiatric outpatients, using Cronback's coefficient alpha. Alpha coefficients for the nine symptom dimensions were found to be very good, ranging from .71 on the Psychoticism dimension to a high of .85 on depression. The test - retest method was also employed to determine the reliability of the BSI. In a sample of sixty non-patients who were tested across a two week interval, reliability coefficients ranged from a low of .68 for the somatization dimension to a high of .91 on the phobic anxiety dimension. The Global Severity Index (G.S.I.) was found to have test - retest reliability of .90.

Two-hundred and nine symptomatic volunteers were utilized to test convergent validity for the BSI with the MMPI. The following symptom dimensions demonstrated maximum correlations with the MMPI scales that were clearly convergent: interpersonal sensitivity, depression anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism. When the BSI scores of 1,002 psychiatric outpatients were subjected to a principal component analysis, nine interpretable factors were derived from a varimax rotation of the principal components which accounted for 44% of the variance in the matrix.

Besides having good reliability and validity the BSI was an ideal instrument to utilize in this study as it is easy to administer, does not take long to complete, is easy to score, and yields a reliable index of general psychological distress.

Statement of Specific Hypotheses

The specific hypotheses to be explored can be arranged in one of two categories. The first category deals with hypotheses specifically related to validation of the EDSCQ as a predictive tool. The second category deals with hypotheses specifically related to the significance of social support and prediction of symptomatology.

I - Validation of the EDSCQ

- i) Hypothesis I - When the factorial structure of the EDSCQ is examined it is expected that among the factors to emerge will be a general "risk" factor to which variables from all four subscales on the EDSCQ will contribute, as well as a separate individual integration factor, a social factor, an economic factor, and a demographic factor which correspond to the four subscales on the EDSCQ.
- ii) Hypothesis II - There will be a positive relationship between the EDSCQ total stress score and BSI symptomatology. Thus, on average, the greater the individual environmental stress, or cost, the greater the severity of symptomatology or subjective net behavioral cost.
- iii) Hypothesis III - There will be a positive relationship between the individual, social support, economic and demographic scales and BSI symptomatology, where increases in individual environmental stress, will be directly related to subjective net behavioral cost.
- iv) Hypothesis IV - The individual items of the EDSCQ, as separate predictors, will be positively related to the severity of

symptomatology. Thus the higher the individual stress score, or individual environmental cost on each item, the higher the level of severity of symptomatology or subjective behavioral cost.

II - Investigation of the Relationship Between Social Support and BSI Symptomatology

- i) Hypothesis V - There will be a positive relationship between the social support scale score and BSI severity of symptomatology.
- ii) Hypothesis VI - When exploring the individual social support items, close relationships (e.g., number of close friends, number of weekly contacts with friends, crisis support) will have a stronger relationship to symptomatology than diffuse support (number of club memberships, number of offices held in clubs), where close relationships constitutes a greater individual environmental benefit, where, high risk scores on "close relationship" items will be more predictive of symptomatology than high risk scores on "diffuse relationships".
- iii) Hypothesis VII - It is expected, according to the economic cost-benefit model, that as the cost of both total environmental risk and the specific "personal" social risk increases, so will the subjective behavioral cost in terms of self-reported symptomatology.

- iv) Hypothesis VIII - Environmental cost will be a determinant of inpatient referral, either as a sole predictor of referral or in combination with BSI symptomatology.

Statistical Analysis

Hypothesis I

To explore the factorial structure of the EDSCQ, a principal component analysis was carried out, where the intercorrelations between the test items on the EDSCQ were reproduced by means of common factor coefficients alone with unities in the diagonal of the matrix of observed correlations and the principal components defined and extracted as exact mathematical transformations of the original variables.

Hypothesis II

Pearson product moment correlations were computed to determine the strength and direction of the relationship between the EDSCQ total score and each of the nine primary symptom scores and the GSI (General Severity Index). Initially, total scores of single subjects (T min) and total scores of married subjects (T max) were kept separate, meaning that the total for singles (T min) was one variable and the total for married subjects (T max) was another variable. This allowed comparison between the singles and married in terms of both the amount of stress they experience and how strongly related stress and symptoms are for each group. Both raw and proportioned total scores were entered into the computer, to determine if any differences would be found between the two scoring techniques. After the totals of singles and the married had been analyzed separately, the two total variables

(scored into proportions) were merged into one variable. This allowed determination of the relationship between the EDSCQ total stress score and the severity of BSI symptomatology of both the married and single grouped together. Both proportioned and raw scores were analyzed.

Hypothesis III

Pearson product moment correlations were computed to determine the strength and direction of the relationship between the individual scale and the severity of BSI symptomatology; the social support scale and the severity of BSI symptomatology; the economic scale and the severity of BSI symptomatology and the demographic scale and the severity of BSI symptomatology. The relationship between the four scales and severity of BSI symptomatology was further explored through stepwise multiple regression analyses. The four scales were entered together, singly, and in combination into the regression equation to determine which scales significantly predicted the severity of BSI symptomatology. In another analysis, age and sex were also entered into the equation along with the four scales. The stepwise method was chosen because the order of inclusion of the independent variables is determined by the respective contribution of each variable to explained variance. Thus, the variable that explains the greatest amount of variance in the dependent variable is entered first, the variable that explains the greatest amount of variance in conjunction with the first will enter second and so on.

Stepwise regression analyses and multiple correlational analyses were first performed on all 170 cases (single and married subjects combined) and then with the single and married as two distinct groups.

Both raw and proportioned scores were used in analyses for the single and married subjects. Proportioned data was only used in the regression analyses with the total sample because the two economic variables merged into one variable.

Hypothesis IV

Pearson product moment correlations were computed between each of the sixty-three items (with each item rated from a scale of 1 for low risk to a scale of 10 for high risk and BSI symptomatology) to determine the strength and direction of relationship for each individual environmental factor.

Hypothesis V

When exploring the relationship between social support and symptomatology a stepwise multiple regression was employed. Social support was entered alone into the equation to determine its ability to predict the severity of BSI symptomatology. This analysis was performed on the total sample $N = 170$, as well as with the single and married as two distinct groups. Both raw and proportioned scores were used in analyses.

Hypothesis VI

To determine if social support items pertaining to close support (e.g. number of close friends, number of social contacts with friends, crisis support) were more strongly related to symptomatology than diffuse items (number of clubs one belongs to, number of offices held in clubs) Pearson product moment correlation analyses were performed between each social support item and the severity of BSI symptomatology.

Hypothesis VII

To test the cost-benefit hypothesis of social support, an analysis of variance was carried out. On the basis of their GSI scores (General Severity Index of BSI) subjects were placed into one of four groups:

- 1) Low risk on total EDSCQ score (Proportion Score of 49 or below) poor social support (Proportion Score of 50 or above);
- 2) Low risk on total EDSCQ score (Proportion Score of 49 or below), good social support (Proportion Score of 49 or below);
- 3) High risk on total EDSCQ score (Proportion Score of 50 or above), poor social support (Proportion Score of 50 or above);
- 4) High risk on total EDSCQ score (Proportion Score of 50 or above), good social support (Proportion Score of 49 or below).

R i s k

		Poor Support (Score 50 or above)	Good Support (Score 49 or below)
Low EDSCQ total score of 49 or below	R	Group 1 S's GSI Scores	Group 2 S's GSI Scores
	i		
High EDSCQ total score of 50 or above	s	Group 3 S's GSI Scores	Group 4 S's GSI Scores
	k		

An analysis of variance was carried out to determine main effects of social support and total EDSCQ score and interaction effects between level of social support and level of environmental stress. To test the difference between means in each group, post-hoc T-tests were carried out.

Hypothesis VIII

To test if the distribution of referrals differed significantly from chance, in the directions of a main impact from environmental costs, a chi-square analysis was performed on the four groups to assess possible reasons for referral, where the dependent variable is the total number of individuals who fall into each cell.

		G.S.I. (60 or above is at case level)	
		Low Severity 59 or below	High Severity 60 or above
EDSCQ total score of	Low 49 or below	Number of Subjects	Number of Subjects
	High 50 or above	Number Subjects	Number of Subjects

CHAPTER FOUR

RESULTS

Hypothesis I

When the factorial structure of the EDSCQ is examined, it is expected that among the factors to emerge will be a general "risk" factor, to which variables from all four subscales on the EDSCQ will contribute, as well as a separate individual integration factor, a social risk factor, an economic factor, and a demographic factor which corresponds to the four subscales on the EDSCQ.

A principal components analysis of the sixty-three variables yielded a direct factor solution of twenty factors with eigenvalues of one or greater, a standard frequently employed to determine which factors to retain for interpretation (Harman, 1967). The eigenvalues, percent of variance and cumulative percent of variance accounted for are presented in Table 2. The factor matrix is presented in Table 3, where it can be seen that if the convention is followed of interpreting only those factor loadings of .30 or over, then Factor 1, loads strongly on spouse-related economic and demographic variables; Factor 2 and 3 appear to be general "risk" factors loading on family background, social support economic and demographic variables; Factor 4 and 5 relate largely to parental background and parental economic variables; Factors 6 and 7 load strongly on social support, and Factor 8 is related to individual integration variables.

Table 2
Direct Principal Component Solution

Component	Eigenvalue	Percent of Variance	Cumulative Percent
1	7.17	11.4	11.4
2	4.57	7.2	18.6
3	4.31	6.8	25.5
4	3.21	5.1	30.6
5	3.09	4.9	35.5
6	2.70	4.3	39.8
7	2.22	3.5	43.3
8	2.11	3.3	46.7
9	1.90	3.0	49.7
10	1.79	2.8	52.5
11	1.67	2.7	55.2
12	1.54	2.4	57.6
13	1.44	2.3	59.9
14	1.42	2.3	62.2
15	1.36	2.2	64.3
16	1.29	2.0	66.4
17	1.19	1.9	68.3
18	1.15	1.8	70.1
19	1.07	1.7	71.8
20	1.02	1.6	73.4

TABLE 3

Factor Matrix Using Principle Components, No Iterations

ITDI		FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
V4	017-religion	0.15761	0.06211	-0.01858	0.03553	-0.05394
V5	018-ethnicity	0.18030	0.00810	-0.05089	0.04643	-0.00401
V6	019-citizenship	-0.15839	-0.01862	-0.02065	-0.11702	-0.00770
V7	020-native language	0.00999	0.02106	-0.02897	-0.18681	-0.00707
V8	021-language spoken at home	-0.04147	-0.01207	-0.02107	-0.09489	-0.00707
V9	022-marital status	-0.34117	-0.09335	-0.17375	-0.31182	-0.00241
V10	023-education	-0.06160	-0.09619	-0.05839	-0.04076	-0.00202
V11	024-father's marital status	-0.12773	0.06666	-0.05833	-0.04194	-0.00202
V12	025-mother's marital status	-0.10598	0.09436	-0.01015	-0.18234	-0.00308
V13	026-father's education	-0.18225	0.10400	-0.08812	-0.05501	-0.00264
V14	027-mother's education	-0.13825	0.09848	-0.02893	-0.09177	-0.00264
V15	028-type of parents	0.13240	-0.02338	-0.06515	-0.13965	-0.00041
V16	029-No. of persons in home	0.11617	-0.02292	-0.00873	-0.02719	-0.00781
V17	030-No. of children	-0.42942	-0.02627	-0.06268	-0.24232	-0.00772
V18	031-No. of siblings	-0.19623	-0.14961	-0.02211	-0.15054	-0.00368
V19	032-No. of siblings near	-0.01496	0.02217	-0.01258	-0.01866	-0.00504
V20	033-No. of relatives	0.05560	0.06882	0.12217	0.31202	-0.00287
V21	034-No. of relatives near	0.04753	0.06820	0.04639	0.32366	-0.00677
V22	035-No. of contacts with relatives	0.05838	0.00991	0.00664	0.06891	-0.00645
V23	036-No. of friends	0.05838	0.08865	0.04502	0.07926	-0.00796
V24	037-No. of friends near	0.00201	0.03057	-0.01213	0.05554	-0.00370
V25	038-No. of contacts with friends	0.04129	0.01210	-0.02229	0.05387	-0.00162
V26	039-No. of visits made to subject	0.13314	0.05212	-0.00880	0.05452	-0.00353
V27	040-No. of visits made by subject	0.19782	0.01630	0.03776	0.10771	-0.00205
V28	041-club membership	0.10869	-0.03128	-0.02327	0.14750	-0.00654
V29	042-No. of offices held	0.02657	0.05182	-0.05570	0.01605	-0.00620
V30	043-crisis support	0.13008	0.06053	0.08693	0.27225	-0.00672
V31	044-occupation	0.21264	0.07606	0.04303	0.05222	-0.00696
V32	048-employment status	0.14228	0.10761	-0.03401	0.09324	-0.00678
V33	052-annual income	0.25021	0.09194	0.06451	0.14710	-0.00703
V34	053-income spent per year	0.08213	0.05835	0.06658	0.14991	-0.00705
V35	054-source of income	0.08310	0.04899	0.00702	0.00455	-0.00480
V36	057-No. of financial contributors	0.10131	0.07043	-0.03169	0.06275	-0.00200
V37	058-No. of dependents	0.43317	0.02733	0.01138	0.03550	-0.00220
V38	059-economic mobility	0.01767	0.12133	0.00903	0.05688	-0.00200
V39	063-economic satisfaction	0.01414	0.12215	0.06701	0.01153	-0.00200
V40	064-home ownership	0.07033	0.11044	0.06125	0.01503	-0.00200
V41	065/165-monthly rent/home value	0.05027	0.12888	0.05960	0.11111	-0.00200
V42	071/171-length of employment	0.03032	0.06976	0.22310	0.12579	-0.00200
V43	045-spouse's occupation	0.96547	0.00000	0.06656	0.06985	-0.00200
V44	049-spouse's employment status	0.96602	0.00000	0.27278	0.06985	-0.00200
V45	060-spouse's mobility	0.96589	0.08250	0.04772	0.06875	-0.00200

TABLE 3 (Continued)

ITDI		FACTOR 6	FACTOR 7	FACTOR 5	FACTOR 9	FACTOR 10
Y4	017-religion	-0.02553	-0.05405	0.003367	-0.17929	0.003373
Y5	018-ethnicity	-0.05249	-0.06099	0.003873	0.00092	0.003373
Y6	019-citizenship	-0.02568	-0.00938	0.007281	0.009762	0.003373
Y7	020-native language	-0.01088	0.00335	0.0079755	0.0011431	0.003373
Y8	021-language spoken at home	0.015117	0.08404	0.007336	0.001694	0.003373
Y9	022-marital status	0.07041	0.07869	0.00336	0.001694	0.003373
Y10	023-education	0.01642	0.09732	0.00397	0.001694	0.003373
Y11	024-father's marital status	0.01670	0.08364	0.00385	0.001694	0.003373
Y12	025-mother's marital status	0.03347	0.19271	0.00385	0.001694	0.003373
Y13	026-father's education	0.00074	0.17635	0.00399	0.001694	0.003373
Y14	027-mother's education	0.02223	0.71581	0.00399	0.001694	0.003373
Y15	028-type of parents	0.02176	0.05052	0.00397	0.001694	0.003373
Y16	029-No. of persons in home	0.11134	0.00106	0.00397	0.001694	0.003373
Y17	030-No. of children	0.05332	0.00106	0.00397	0.001694	0.003373
Y18	031-No. of siblings	0.02061	0.00106	0.00397	0.001694	0.003373
Y19	032-No. of siblings near	0.07425	0.00106	0.00397	0.001694	0.003373
Y20	033-No. of relatives	0.09563	0.00106	0.00397	0.001694	0.003373
Y21	034-No. of relatives near	0.00440	0.00106	0.00397	0.001694	0.003373
Y22	035-No. of contacts with relatives	0.02142	0.00106	0.00397	0.001694	0.003373
Y23	036-No. of friends	0.83378	0.00106	0.00397	0.001694	0.003373
Y24	037-No. of friends near	0.87229	0.00106	0.00397	0.001694	0.003373
Y25	038-No. of contacts with friends	0.70598	0.00106	0.00397	0.001694	0.003373
Y26	039-No. of visits made to subject	0.21911	0.00106	0.00397	0.001694	0.003373
Y27	040-No. of visits made by subject	0.33955	0.00106	0.00397	0.001694	0.003373
Y28	041-club membership	0.04073	0.00106	0.00397	0.001694	0.003373
Y29	042-No. of offices held	0.01475	0.00106	0.00397	0.001694	0.003373
Y30	043-crisis support	0.03071	0.00106	0.00397	0.001694	0.003373
Y31	044-occupation	0.14621	0.00106	0.00397	0.001694	0.003373
Y32	048-employment status	0.03655	0.00106	0.00397	0.001694	0.003373
Y33	052-annual income	0.00405	0.00106	0.00397	0.001694	0.003373
Y34	053-income spent per year	0.03545	0.00106	0.00397	0.001694	0.003373
Y35	054-source of income	0.00383	0.00106	0.00397	0.001694	0.003373
Y36	057-No. of financial contributors	0.05093	0.00106	0.00397	0.001694	0.003373
Y37	058-No. of dependents	0.07476	0.00106	0.00397	0.001694	0.003373
Y38	059-economic mobility	0.17684	0.00106	0.00397	0.001694	0.003373
Y39	063-economic satisfaction	0.07257	0.00106	0.00397	0.001694	0.003373
Y40	064-home ownership	0.01188	0.00106	0.00397	0.001694	0.003373
Y41	065/165-monthly rent/home value	0.02956	0.00106	0.00397	0.001694	0.003373
Y42	071/171-length of employment	0.02929	0.00106	0.00397	0.001694	0.003373
Y43	045-spouse's occupation	0.02444	0.00106	0.00397	0.001694	0.003373
Y44	049-spouse's employment status	0.01723	0.00106	0.00397	0.001694	0.003373
Y45	060-spouse's mobility	0.01704	0.00106	0.00397	0.001694	0.003373

TABLE 3 (Continued)

ITDI	FACTOR 11	FACTOR 12	FACTOR 13	FACTOR 14	FACTOR 15
017-religion	0.0188	0.0000	0.0000	0.0000	0.0000
018-ethnicity	0.0000	0.0000	0.0000	0.0000	0.0000
019-citizenship	0.0000	0.0000	0.0000	0.0000	0.0000
020-native language	0.0000	0.0000	0.0000	0.0000	0.0000
021-language spoken at home	0.0000	0.0000	0.0000	0.0000	0.0000
022-marital status	0.0000	0.0000	0.0000	0.0000	0.0000
023-education	0.0000	0.0000	0.0000	0.0000	0.0000
024-father's marital status	0.0000	0.0000	0.0000	0.0000	0.0000
025-mother's marital status	0.0000	0.0000	0.0000	0.0000	0.0000
026-father's education	0.0000	0.0000	0.0000	0.0000	0.0000
027-mother's education	0.0000	0.0000	0.0000	0.0000	0.0000
028-type of parents	0.0000	0.0000	0.0000	0.0000	0.0000
029-No. of persons in home	0.0000	0.0000	0.0000	0.0000	0.0000
030-No. of children	0.0000	0.0000	0.0000	0.0000	0.0000
031-No. of siblings	0.0000	0.0000	0.0000	0.0000	0.0000
032-No. of siblings near	0.0000	0.0000	0.0000	0.0000	0.0000
033-No. of relatives	0.0000	0.0000	0.0000	0.0000	0.0000
034-No. of relatives near	0.0000	0.0000	0.0000	0.0000	0.0000

ITDI	FACTOR 16	FACTOR 17	FACTOR 18	FACTOR 19	FACTOR 20
017-religion	0.0000	0.0000	0.0000	0.0000	0.0000
018-ethnicity	0.0000	0.0000	0.0000	0.0000	0.0000
019-citizenship	0.0000	0.0000	0.0000	0.0000	0.0000
020-native language	0.0000	0.0000	0.0000	0.0000	0.0000
021-language spoken at home	0.0000	0.0000	0.0000	0.0000	0.0000
022-marital status	0.0000	0.0000	0.0000	0.0000	0.0000
023-education	0.0000	0.0000	0.0000	0.0000	0.0000
024-father's marital status	0.0000	0.0000	0.0000	0.0000	0.0000
025-mother's marital status	0.0000	0.0000	0.0000	0.0000	0.0000
026-father's education	0.0000	0.0000	0.0000	0.0000	0.0000
027-mother's education	0.0000	0.0000	0.0000	0.0000	0.0000
028-type of parents	0.0000	0.0000	0.0000	0.0000	0.0000
029-No. of persons in home	0.0000	0.0000	0.0000	0.0000	0.0000
030-No. of children	0.0000	0.0000	0.0000	0.0000	0.0000
031-No. of siblings	0.0000	0.0000	0.0000	0.0000	0.0000
032-No. of siblings near	0.0000	0.0000	0.0000	0.0000	0.0000
033-No. of relatives	0.0000	0.0000	0.0000	0.0000	0.0000
034-No. of relatives near	0.0000	0.0000	0.0000	0.0000	0.0000

TABLE 3 (Continued)

ITDMS	FACTOR 11	FACTOR 12	FACTOR 13	FACTOR 14	FACTOR 15
Y 035-No. of contacts with relatives	0.009829	-0.05610	0.0669	0.0238	0.0000
Y 036-No. of close friends	0.091422	-0.07053	0.02262	0.02238	0.0000
Y 037-No. of friends near	0.010620	-0.00000	0.00000	0.00000	0.00000
Y 038-No. of contacts with friends	0.018794	0.04195	0.01303	0.02235	0.00000
Y 039-No. of visits made to subject	0.078107	0.07276	0.02068	0.02555	0.00000
Y 040-No. of visits made by subject	0.064824	0.01192	0.00000	0.02446	0.00000
Y 041-club membership	0.04211	0.02285	0.01122	0.01010	0.00000
Y 042-No. of offices held	0.021312	0.01769	0.03249	0.00000	0.00000
Y 043-crisis support	0.016233	0.06637	0.01056	0.01111	0.00000
Y 044-occupation	0.022881	0.06224	0.01088	0.00888	0.00000
Y 048-employment status	0.06959	0.06968	0.01354	0.02710	0.00000
Y 052-annual income	0.00037	0.01505	0.00929	0.00000	0.00000
Y 053-income spent per year	0.01800	0.01505	0.00929	0.00000	0.00000
Y 054-source of income	0.03736	0.01227	0.00000	0.00000	0.00000
Y 057-No. of financial contributors	0.09753	0.01957	0.02285	0.00000	0.00000
Y 058-No. of dependents	0.01188	0.07794	0.00000	0.00000	0.00000
Y 059-economic mobility	0.05956	0.01189	0.00000	0.00000	0.00000
Y 063-economic satisfaction	0.02285	0.02204	0.00000	0.00000	0.00000
Y 064-home ownership	0.01323	0.03133	0.00000	0.00000	0.00000
Y 065/165-monthly rent/home value	0.00132	0.03133	0.00000	0.00000	0.00000
Y 071/171-length of employment	0.03276	0.00664	0.00000	0.00000	0.00000
Y 065-spouse's occupation	0.03213	0.01697	0.00000	0.00000	0.00000
Y 049-spouse's employment status	0.03213	0.02229	0.00000	0.00000	0.00000
Y 060-spouse's mobility	0.03204	0.02239	0.00000	0.00000	0.00000
Y 070-spouse's income	0.03277	0.03307	0.00000	0.00000	0.00000
Y 072/172-length of spouse's employment	0.04410	0.04376	0.00000	0.00000	0.00000
Y 046-father's occupation	0.03924	0.05830	0.00000	0.00000	0.00000
Y 030-father's employment status	0.00111	0.01020	0.00000	0.00000	0.00000
Y 053-father's income	0.00762	0.01132	0.00000	0.00000	0.00000
Y 061-father's mobility	0.00224	0.01978	0.00000	0.00000	0.00000
Y 073/173-length of father's employment	0.00214	0.01622	0.00000	0.00000	0.00000
Y 047-mother's occupation	0.00219	0.00827	0.00000	0.00000	0.00000
Y 051-mother's employment status	0.00198	0.00551	0.00000	0.00000	0.00000
Y 056-mother's income	0.02658	0.03551	0.00000	0.00000	0.00000
Y 062-mother's mobility	0.01298	0.03657	0.00000	0.00000	0.00000
Y 074/174-length of mother's employment	0.04916	0.04958	0.00000	0.00000	0.00000
Y 075-size of city/town	0.00686	0.00668	0.00000	0.00000	0.00000
Y 076-type of accomodation	0.00111	0.00000	0.00000	0.00000	0.00000
Y 077-rating of community facilities	0.00111	0.00000	0.00000	0.00000	0.00000
Y 078-use of community facilities	0.00111	0.00000	0.00000	0.00000	0.00000
Y 079-length of time at present address	0.00000	0.00000	0.00000	0.00000	0.00000
Y 080-length of time in city	0.00000	0.00000	0.00000	0.00000	0.00000
Y 081-length of time in province	0.00000	0.00000	0.00000	0.00000	0.00000
Y 082-No. of household moves	0.00471	0.01111	0.00000	0.00000	0.00000
Y 083-satisfaction with neighborhood	0.00486	0.01111	0.00000	0.00000	0.00000

TABLE 3 (Continued)

ITEMS	FACTOR 16	FACTOR 17	FACTOR 18	FACTOR 19	FACTOR 20
035-No. of contacts with relatives	-0.05585	0.00071	0.00033	-0.00099	-0.00078
036-No. of close friends	-0.00454	0.00000	0.00000	-0.00000	-0.00000
037-No. of friends near	-0.00969	-0.00000	0.00000	-0.00000	-0.00000
038-No. of contacts with friends	0.00047	0.00000	0.00000	0.00000	0.00000
039-No. of visits made to subject	0.00326	-0.00000	0.00000	0.00000	0.00000
040-No. of visits made by subject	0.00733	0.00000	0.00000	0.00000	0.00000
041-club membership	0.00739	0.00000	0.00000	0.00000	0.00000
042-No. of offices held	0.00873	0.00000	0.00000	0.00000	0.00000
043-crisis support	0.00376	0.00000	0.00000	0.00000	0.00000
044-occupation	0.00612	0.00000	0.00000	0.00000	0.00000
048-employment status	0.00174	0.00000	0.00000	0.00000	0.00000
052-annual income	0.00558	0.00000	0.00000	0.00000	0.00000
053-income spent per year	0.00240	0.00000	0.00000	0.00000	0.00000
054-source of income	0.00312	0.00000	0.00000	0.00000	0.00000
057-No. of financial contributors	0.00884	0.00000	0.00000	0.00000	0.00000
058-No. of dependents	0.00313	0.00000	0.00000	0.00000	0.00000
059-economic mobility	0.00373	0.00000	0.00000	0.00000	0.00000
063-economic satisfaction	0.00292	0.00000	0.00000	0.00000	0.00000
064-home ownership	0.00267	0.00000	0.00000	0.00000	0.00000
065/165-monthly rent/home value	0.00337	0.00000	0.00000	0.00000	0.00000
071/171-length of employment	0.00240	0.00000	0.00000	0.00000	0.00000
045-spouse's occupation	0.00241	0.00000	0.00000	0.00000	0.00000
049-spouse's employment status	0.00336	0.00000	0.00000	0.00000	0.00000
060-spouse's mobility	0.00304	0.00000	0.00000	0.00000	0.00000
070-spouse's income	0.00336	0.00000	0.00000	0.00000	0.00000
072/172-length of spouse's employment	0.00350	0.00000	0.00000	0.00000	0.00000
046-father's occupation	0.00236	0.00000	0.00000	0.00000	0.00000
050-father's employment status	0.00394	0.00000	0.00000	0.00000	0.00000
055-father's income	0.00349	0.00000	0.00000	0.00000	0.00000
061-father's mobility	0.00210	0.00000	0.00000	0.00000	0.00000
073/173-length of father's employment	0.00561	0.00000	0.00000	0.00000	0.00000
047-mother's occupation	0.00181	0.00000	0.00000	0.00000	0.00000
051-mother's employment status	0.00366	0.00000	0.00000	0.00000	0.00000
056-mother's income	0.00281	0.00000	0.00000	0.00000	0.00000
062-mother's mobility	0.00356	0.00000	0.00000	0.00000	0.00000
074/174-length of mother's employment	0.00397	0.00000	0.00000	0.00000	0.00000
075-size of city/town	0.00197	0.00000	0.00000	0.00000	0.00000
076-type of accomodation	0.00336	0.00000	0.00000	0.00000	0.00000
077-rating of community facilities	0.00332	0.00000	0.00000	0.00000	0.00000
078-use of community facilities	0.00332	0.00000	0.00000	0.00000	0.00000
079-length of time at present address	0.00372	0.00000	0.00000	0.00000	0.00000
080-length of time in city	0.00167	0.00000	0.00000	0.00000	0.00000
081-length of time in province	0.00193	0.00000	0.00000	0.00000	0.00000
082-No. of household moves	0.00071	0.00000	0.00000	0.00000	0.00000
083-satisfaction with neighborhood	0.00627	0.00000	0.00000	0.00000	0.00000

In order to achieve a better definition of these factors with less overlap of variables, the factors were rotated using a varimax method to produce the factor matrix shown in Table 4. On the basis of interpretability and the amount of additional variance accounted for, the rotated varimax factor loadings of .30 and over for the first twelve factors are shown in Table 4a and discussed below:

Factor 1: This factor can be interpreted as a spouse-related economic factor, as it loads positively on such items as the occupational level, economic mobility and income of a spouse, and loads negatively on marital status, number of dependent children and number of financial dependents.

Factor 2: Factor 2 is also interpreted as an economic factor, but one which relates specifically to the employment status, income and mobility of the client's parents.

Factor 3: This factor can also be interpreted as an economic factor, but one which includes both individual and parental economic factors.

Factor 4: This factor appears to be a small general risk factor, which includes variables related to social support, economic status and demographic factors in contrast to the two large general risk factors that were identified before rotation.

Factor 5: A fourth economic factor can be identified here which loads on variables relating to individual or personal economic status.

Factor 6: This factor can be interpreted as a social support factor, with substantial loadings on the number of friends and visits from friends that the individual has.

Factor 7: This is a very modest factor relating specifically to the maternal background factors of education, occupation and economic status.

Factor 8: This factor appears to be a factor of individual integration, loading on such variables as citizenship and native language.

Factor 9: This small factor relates to parental background.

Factor 10: Factor 10 is best interpreted as a modest demographic factor.

Factor 11 and 12: Both these factors relate to specific aspects of social support (e.g., number of visits and contacts with family).

Further factors appear to be ambiguous, highly discrete or redundant.

TABLE 4

VARIMAX ROTATED FACTOR MATRIX

ITEM	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
017-religion	.00	.15	.33	.00	.00
018-ethnicity	.00	.12	.33	.00	.00
019-citizenship	.00	.12	.33	.00	.00
020-native language	.00	.12	.33	.00	.00
021-language spoken at home	.00	.12	.33	.00	.00
022-marital status	.00	.12	.33	.00	.00
023-education	.00	.12	.33	.00	.00
024-father's marital status	.00	.12	.33	.00	.00
025-mother's marital status	.00	.12	.33	.00	.00
026-father's education	.00	.12	.33	.00	.00
027-mother's education	.00	.12	.33	.00	.00
028-type of parents	.00	.12	.33	.00	.00
029-No. of persons in home	.00	.12	.33	.00	.00
030-No. of children	.00	.12	.33	.00	.00
031-No. of siblings	.00	.12	.33	.00	.00
032-No. of siblings near	.00	.12	.33	.00	.00
033-No. of relatives	.00	.12	.33	.00	.00
034-No. of relatives near	.00	.12	.33	.00	.00
035-No. of contacts with relatives	.00	.12	.33	.00	.00
036-No. of friends	.00	.12	.33	.00	.00
037-No. of friends near	.00	.12	.33	.00	.00
038-No. of contacts with friends	.00	.12	.33	.00	.00
039-No. of visits made to subject	.00	.12	.33	.00	.00
040-No. of visits made by subject	.00	.12	.33	.00	.00
041-club membership	.00	.12	.33	.00	.00
042-No. of offices held	.00	.12	.33	.00	.00
043-crisis support	.00	.12	.33	.00	.00
044-occupation	.00	.12	.33	.00	.00
048-employment status	.00	.12	.33	.00	.00
052-annual income	.00	.12	.33	.00	.00
053-income spent per year	.00	.12	.33	.00	.00
054-source of income	.00	.12	.33	.00	.00
057-No. of financial contributors	.00	.12	.33	.00	.00
058-No. of dependents	.00	.12	.33	.00	.00
059-economic mobility	.00	.12	.33	.00	.00
063-economic satisfaction	.00	.12	.33	.00	.00
064-home ownership	.00	.12	.33	.00	.00
065/165-monthly rent/home value	.00	.12	.33	.00	.00
071/171-length of employment	.00	.12	.33	.00	.00
045-spouse's occupation	.00	.12	.33	.00	.00
049-spouse's employment status	.00	.12	.33	.00	.00
060-spouse's mobility	.00	.12	.33	.00	.00

TABLE 4 (Continued)

ITEM	FACTOR 6	FACTOR 7	FACTOR 8	FACTOR 9	FACTOR 10
Y 017-religion	0.05785	0.12068	0.00000	0.00000	0.00000
Y 018-ethnicity	0.13870	0.22688	0.00000	0.00000	0.00000
Y 019-citizenship	0.40100	0.22688	0.00000	0.00000	0.00000
Y 020-native language	0.27620	0.00000	0.00000	0.00000	0.00000
Y 021-language spoken at home	0.28041	0.00000	0.00000	0.00000	0.00000
Y 022-marital status	0.09997	0.00000	0.00000	0.00000	0.00000
Y 023-education	0.02637	0.00000	0.00000	0.00000	0.00000
Y 024-father's marital status	0.04104	0.00000	0.00000	0.00000	0.00000
Y 025-mother's marital status	0.02233	0.00000	0.00000	0.00000	0.00000
Y 026-father's education	0.09997	0.00000	0.00000	0.00000	0.00000
Y 027-mother's education	0.31349	0.00000	0.00000	0.00000	0.00000
Y 028-type of parents	0.03190	0.00000	0.00000	0.00000	0.00000
Y 029-No. of persons in home	0.06871	0.00000	0.00000	0.00000	0.00000
Y 030-No. of children	0.17975	0.00000	0.00000	0.00000	0.00000
Y 031-No. of siblings	0.06871	0.00000	0.00000	0.00000	0.00000
Y 032-No. of siblings near	0.03299	0.00000	0.00000	0.00000	0.00000
Y 033-No. of relatives	0.03299	0.00000	0.00000	0.00000	0.00000
Y 034-No. of relatives near	0.03299	0.00000	0.00000	0.00000	0.00000
Y 035-No. of contacts with relative	0.01899	0.00000	0.00000	0.00000	0.00000
Y 036-No. of friends	0.03261	0.00000	0.00000	0.00000	0.00000
Y 037-No. of friends near	0.05102	0.00000	0.00000	0.00000	0.00000
Y 038-No. of contacts with friends	0.03637	0.00000	0.00000	0.00000	0.00000
Y 039-No. of visits made to subject	0.00841	0.00000	0.00000	0.00000	0.00000
Y 040-No. of visits made by subject	0.01483	0.00000	0.00000	0.00000	0.00000
Y 041-club membership	0.03623	0.00000	0.00000	0.00000	0.00000
Y 042-No. of offices held	0.02623	0.00000	0.00000	0.00000	0.00000
Y 043-crisis support	0.06978	0.00000	0.00000	0.00000	0.00000
Y 044-occupation	0.01636	0.00000	0.00000	0.00000	0.00000
Y 048-employment status	0.22562	0.00000	0.00000	0.00000	0.00000
Y 052-annual income	0.09420	0.00000	0.00000	0.00000	0.00000
Y 053-income spent per year	0.16404	0.00000	0.00000	0.00000	0.00000
Y 054-source of income	0.06080	0.00000	0.00000	0.00000	0.00000
Y 057-No. of financial contributors	0.19653	0.00000	0.00000	0.00000	0.00000
Y 058-No. of dependents	0.17056	0.00000	0.00000	0.00000	0.00000
Y 059-economic mobility	0.02111	0.00000	0.00000	0.00000	0.00000
Y 063-economic satisfaction	0.18624	0.00000	0.00000	0.00000	0.00000
Y 064-home ownership	0.10330	0.00000	0.00000	0.00000	0.00000
Y 065/165-monthly rent/home value	0.01977	0.00000	0.00000	0.00000	0.00000
Y 071/171-length of employment	0.00524	0.00000	0.00000	0.00000	0.00000
Y 045-spouse's occupation	0.02736	0.00000	0.00000	0.00000	0.00000
Y 049-spouse's employment status	0.01162	0.00000	0.00000	0.00000	0.00000
Y 060-spouse's mobility	0.01137	0.00000	0.00000	0.00000	0.00000

TABLE 4 (Continued)

ITEM	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
Y46 070-spouse's income	0.88712	-0.18201	-0.21352	0.02263	0.10721
Y46 072/172-length of spouse's employment	0.84197	-0.28970	-0.07576	0.05594	0.27586
Y46 046-father's occupation	0.18477	0.38227	0.02536	0.09240	0.43370
Y46 050-father's employment status	0.01786	0.55584	0.68238	-0.20032	0.12552
Y50 055-father's income	0.22451	0.33185	0.43184	0.12612	0.19997
Y50 061-father's mobility	0.01135	0.33233	0.68270	0.19868	0.12881
Y50 073/173-length of father's employment	0.14719	0.36751	0.40729	0.10539	0.09954
Y50 047-mother's occupation	0.21351	0.38490	-0.04051	0.11535	0.41916
Y50 051-mother's employment status	0.01450	0.35470	0.68314	0.19935	0.12609
Y50 056-mother's income	0.17053	0.39096	0.48588	0.66954	0.21477
Y50 062-mother's mobility	0.11483	0.39668	0.68687	0.18458	0.19678
Y50 074/174-length of mother's employment	0.14806	0.35630	0.40358	0.10189	0.08376
Y50 075-size of city/town	0.21600	0.35007	0.40993	0.20729	0.08333
Y50 076-type of accomodation	0.48197	0.33168	0.12691	0.15514	0.20233
Y60 077-rating of community facilities	0.10855	0.33168	0.15368	0.49933	0.20233
Y60 078-use of community facilities	0.10855	0.33168	0.15368	0.49933	0.20233
Y60 079-length of time at present address	0.26936	0.27823	0.24679	0.07733	0.08375
Y66 080-length of time in city	0.18070	0.27823	0.14187	0.07733	0.08375
Y66 081-length of time in province	0.18070	0.27823	0.14187	0.07733	0.08375
Y66 082-No. of household moves	0.39980	0.08100	0.33388	0.12676	0.33643
Y66 083-satisfaction with neighborhood	0.22270	0.24223	0.06863	0.18865	0.20241

ITEM	FACTOR 11	FACTOR 12	FACTOR 13	FACTOR 14	FACTOR 15
Y6 017-religion	0.18388	-0.01306	0.02072	0.10623	-0.10297
Y6 018-ethnicity	0.19080	0.07041	0.15368	0.04148	0.10297
Y6 019-citizenship	0.18837	0.07724	0.01029	0.10810	0.01795
Y7 020-native language	0.20269	0.05739	0.06643	0.04044	0.10330
Y8 021-language spoken at home	0.16197	0.00363	0.05474	0.09293	0.06602
Y9 022-marital status	0.05909	0.07570	0.11725	0.15663	0.00402
Y9 023-education	0.14477	0.03611	0.11725	0.15663	0.00402
Y11 024-father's marital status	0.14734	0.13471	0.21370	0.10287	0.12319
Y11 025-mother's marital status	0.05252	0.12293	0.22792	0.07813	0.09990
Y11 026-father's education	0.25577	0.13080	0.18320	0.23362	0.14644
Y11 027-mother's education	0.25577	0.13080	0.18320	0.23362	0.14644
Y11 028-type of parents	0.20133	0.04220	0.09928	0.14775	0.00133
Y11 029-No. of persons in home	0.25577	0.13080	0.18320	0.23362	0.14644
Y11 030-No. of children	0.19310	0.05537	0.06643	0.05368	0.00368
Y11 031-No. of siblings	0.19310	0.05537	0.06643	0.05368	0.00368
Y11 032-No. of siblings near	0.26888	0.07679	0.06643	0.00116	0.00368
Y11 033-No. of relatives	0.27094	0.07679	0.06643	0.00116	0.00368
Y11 034-No. of relatives near	0.39980	0.08100	0.33388	0.12676	0.33643

TABLE 4 (Continued)

ITEM	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8	FACTOR 9	FACTOR 10
Y46 070-spouse's income	0.19774	0.01079	0.00618	0.16771	0.00111	0.00000
Y47 072/172-length of spouse's employment	0.27386	0.00107	0.00000	0.16771	0.00111	0.00000
Y48 046-father's occupation	0.41370	0.00549	0.00000	0.16771	0.00111	0.00000
Y49 050-father's employment status	0.12552	0.00580	0.00000	0.16771	0.00111	0.00000
Y50 055-father's income	0.19997	0.00070	0.00000	0.16771	0.00111	0.00000
Y51 061-father's mobility	0.12881	0.00000	0.00000	0.16771	0.00111	0.00000
Y52 073/173-length of father's employment	0.09954	0.00000	0.00000	0.16771	0.00111	0.00000
Y53 047-mother's occupation	0.41916	0.00000	0.00000	0.16771	0.00111	0.00000
Y54 051-mother's employment status	0.12609	0.00000	0.00000	0.16771	0.00111	0.00000
Y55 056-mother's income	0.21477	0.00000	0.00000	0.16771	0.00111	0.00000
Y56 062-mother's mobility	0.19648	0.00000	0.00000	0.16771	0.00111	0.00000
Y57 074/174-length of mother's employment	0.08376	0.00000	0.00000	0.16771	0.00111	0.00000
Y58 075-size of city/town	0.00000	0.00000	0.00000	0.16771	0.00111	0.00000
Y59 076-type of accomodation	0.00000	0.00000	0.00000	0.16771	0.00111	0.00000
Y60 077-rating of community facilities	0.00000	0.00000	0.00000	0.16771	0.00111	0.00000
Y61 078-use of community facilities	0.00000	0.00000	0.00000	0.16771	0.00111	0.00000
Y62 079-length of time at present address	0.00000	0.00000	0.00000	0.16771	0.00111	0.00000
Y63 080-length of time in city	0.00000	0.00000	0.00000	0.16771	0.00111	0.00000
Y64 081-length of time in province	0.00000	0.00000	0.00000	0.16771	0.00111	0.00000
Y65 082-No. of household moves	0.00000	0.00000	0.00000	0.16771	0.00111	0.00000
Y66 083-satisfaction with neighborhood	0.00000	0.00000	0.00000	0.16771	0.00111	0.00000

ITEM	FACTOR 15	FACTOR 16	FACTOR 17	FACTOR 18	FACTOR 19	FACTOR 20
Y67 017-religion	0.00997	0.00000	0.00000	0.00000	0.00000	0.00000
Y68 018-ethnicity	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y69 019-citizenship	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y70 020-native language	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y71 021-language spoken at home	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y72 022-marital status	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y73 023-education	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y74 024-father's marital status	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y75 025-mother's marital status	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y76 026-father's education	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y77 027-mother's education	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y78 028-type of parents	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y79 029-No. of persons in home	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y80 030-No. of children	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y81 031-No. of siblings	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y82 032-No. of siblings near	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y83 033-No. of relatives	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Y84 034-No. of relatives near	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TABLE 4 (Continued)

ITEM	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5
V46 070-spouse's income	0.95988	-0.08040	-0.02811	0.00077	0.00053
V47 072/172-length of spouse's employment	0.94538	-0.06340	-0.00098	0.00011	0.00015
V48 046-father's occupation	0.11757	-0.04115	0.11813	0.00022	0.00011
V49 050-father's employment status	0.00949	0.06516	0.00867	0.00011	0.00011
V50 055-father's income	0.02153	0.00102	0.00311	0.00011	0.00011
V51 061-father's mobility	0.13311	0.00011	0.00011	0.00011	0.00011
V52 073/173-length of father's employment	0.00011	0.00011	0.00011	0.00011	0.00011
V53 047-mother's occupation	0.00011	0.00011	0.00011	0.00011	0.00011
V54 051-mother's employment status	0.00011	0.00011	0.00011	0.00011	0.00011
V55 056-mother's income	0.00011	0.00011	0.00011	0.00011	0.00011
V56 062-mother's mobility	0.00011	0.00011	0.00011	0.00011	0.00011
V57 074/174-length of mother's employment	0.00011	0.00011	0.00011	0.00011	0.00011
V58 075-size of city/town	0.00011	0.00011	0.00011	0.00011	0.00011
V59 076-type of accomodation	0.00011	0.00011	0.00011	0.00011	0.00011
V60 077-rating of community facilities	0.00011	0.00011	0.00011	0.00011	0.00011
V61 078-use of community facilities	0.00011	0.00011	0.00011	0.00011	0.00011
V62 079-length of time at present address	0.00011	0.00011	0.00011	0.00011	0.00011
V63 080-length of time in city	0.00011	0.00011	0.00011	0.00011	0.00011
V64 081-length of time in province	0.00011	0.00011	0.00011	0.00011	0.00011
V65 082-No. of household moves	0.00011	0.00011	0.00011	0.00011	0.00011
V66 083-satisfaction with neighborhood	0.00011	0.00011	0.00011	0.00011	0.00011

TABLE 4 (Continued)

ITEM	FACTOR 6	FACTOR 7	FACTOR 8	FACTOR 9	FACTOR 10
V66 070-spouse's income	0.03856	0.04935	0.00000	0.00000	0.00000
V67 072/172-length of spouse's employment	0.03094	0.00000	0.00000	0.00000	0.00000
V68 046-father's occupation	0.12057	0.00000	0.00000	0.00000	0.00000
V69 030-father's employment status	0.00000	0.00000	0.00000	0.00000	0.00000
V70 055-father's income	0.07999	0.00000	0.00000	0.00000	0.00000
V71 061-father's mobility	0.04712	0.00000	0.00000	0.00000	0.00000
V72 073/173-length of father's employment	0.04028	0.00000	0.00000	0.00000	0.00000
V73 047-mother's occupation	0.04985	0.00000	0.00000	0.00000	0.00000
V74 031-mother's employment status	0.06393	0.00000	0.00000	0.00000	0.00000
V75 056-mother's income	0.06393	0.00000	0.00000	0.00000	0.00000
V76 062-mother's mobility	0.06766	0.00000	0.00000	0.00000	0.00000
V77 074/174-length of mother's employment	0.06100	0.00000	0.00000	0.00000	0.00000
V78 075-size of city/town	0.08400	0.00000	0.00000	0.00000	0.00000
V79 076-type of accomodation	0.08400	0.00000	0.00000	0.00000	0.00000
V80 077-rating of community facilities	0.19463	0.00000	0.00000	0.00000	0.00000
V81 078-use of community facilities	0.27908	0.00000	0.00000	0.00000	0.00000
V82 079-length of time at present address	0.00000	0.00000	0.00000	0.00000	0.00000
V83 080-length of time in city	0.05222	0.00000	0.00000	0.00000	0.00000
V84 081-length of time in province	0.00781	0.00000	0.00000	0.00000	0.00000
V85 082-No. of household moves	0.03925	0.00000	0.00000	0.00000	0.00000
V86 083-satisfaction with neighborhood	0.08536	0.00000	0.00000	0.00000	0.00000

Table 4a
 Rotated (Varimax) Factors
 Total Sample
 (Loadings .30)

Variable/Item	1	2	3	4	F	a	c	t	o	r	s	10	11	12
V4/Religion														
V5/Ethnicity														
V6/Citizenship											.713			
V7/Native Language											.798			
V8/Language Spoken At Home											.793			
V9/Marital Status	-.341			.312										
V10/Education														
V11/Father's Marital Status														
V12/Mother's Marital Status														
V13/Father's Education														
V14/Mother's Education											.716			
V15/Type of Parents		.403												
V16/No. of Persons in Home														
V17/No. of Children	-.429													
V18/No. of Siblings														.615
V19/No. of Siblings Near														.800
V20/No. of Relatives				.312										.460
V21/No. of Relatives Near				.324										.536
V22/No. of Contacts With Relatives			.901											
V23/No. of Friends							.834							

Table 4a (Continued)

Variable/Item	1	2	F	a	c	t	o	r	s	9	10	11	12
V24/No. of Friends Near													
										.872			
V25/No. of Contacts With Friends													
												.706	
V26/No. of Visits Made To Subject													.781
V27/No. of Visits Made By Subject													.648
V28/Club Membership													
V29/No. of Offices Held													
V30/Crisis Support													.416
V31/Occupation													
V32/Employment Status													.595
V33/Annual Income													.655
V34/Income Spent Per Year													.470
V35/Source of Income													
V36/No. of Financial Contributors													.498
V37/No. of Dependents													-.433
V38/Economic Mobility													.696
V39/Economic Satisfaction													.732
V40/Home Ownership													.403
V41/Monthly Rent/ Home Ownership													.523
V42/Length of Employment													.760
V43/Spouse's Occupation													.723
V44/Spouse's Employment Status													.965
V45/Spouse's Mobility													.966
V46/Spouse's Income													.960
V47/Length of Spouse's Employment													.945
V48/Father's Occupation													

Table 4a (Continued)

Variable/Item	1	2	3	F 4	a 5	c 6	t 7	o 8	r 9	s 10	11	12
V49/Father's Employment Status		.965										
V50/Father's Income		.401	.610									
V51/Father's Mobility		.965										
V52/Length of Father's Employment										.885		
V53/Mother's Occupation							.808					
V54/Mother's Employment Status		.965										
V55/Mother's Income			.780									
V56/Mother's Mobility							.735					
V57/Length of Mother's Employment										.875		
V58/Size of City/Town												
V59/Type of Accommodation				.601								
V60/Rating of Community Facilities												
V61/Use of Facilities												
V62/Length of Time at Address				.696						.366		
V63/Length of Time in City										.846		
V64/Length of Time in Province										.832		
V65/No. of Household Moves				.713								
V66/Satisfaction with Neighborhood												

Hypothesis II

There will be a positive relationship between EDSCQ total scores and BSI symptomatology.

When the single and married subjects are examined separately the single subjects show a significant positive relationship between total EDSCQ scores with all BSI symptoms, including the GSI. For the most part, the married also show the same significant positive relationship, but for the symptoms, somatization, obsessive-compulsiveness phobic anxiety and hostility statistical significance was not found. (see Table 5).

When single and married subjects are combined (N = 170) a statistically significant and positive relationship between total EDSCQ stress scores and all BSI symptoms and the GSI are observed. (see Table 6).

Hypothesis III

Each of the four scale scores will be positively related to BSI symptomatology. This hypothesis was largely supported where data from all 170 subjects was utilized in the analysis (see Table 7), with the exception of the individual scale. It should be noted that proportioned scores yielded the same results as raw scores.

Table 5
Correlations Between EDSCQ Totals and BSI Symptomatology

Symptom	Singles Proportioned Data N = 75		Singles Raw Data N = 75		Married Proportioned Data N = 95		Married Raw Data N = 95	
Somatization	*	.2569	*	.2653		.0051		.0235
Obsessive Compulsiveness	*	.2129	*	.2051		.1422		.1292
Interpersonal Sensitivity	****	.3775	***	.3601	*	.2175	*	.1827
Depression	**	.3067	**	.3007	**	.2401	*	.2323
Anxiety	*	.2556	**	.2502	*	.1699		.1582
Hostility	**	.3340	**	.3057		.1200		.0976
Phobic Anxiety	***	.3493	***	.3541		.1423		.1580
Paranoid Ideation	**	.3350	**	.3238	**	.2500	*	.2346
Psychoticism	*	.2667	**	.2558	*	.2100	*	.1926
G.S.I.	****	.3865	***	.3806	*	.1770		.1631

* $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$; **** $P \leq .000$

Table 6
Correlations Between EDSCQ Totals and BSI Symptomatology

Symptom	Total Sample (N = 170)
Somatization	* .1282
Obsessive Compulsiveness	* .1625
Interpersonal Sensitivity	**** .2704
Depression	**** .2693
Anxiety	** .2011
Hostility	** .1942
Phobic Anxiety	*** .2452
Paranoid Ideation	**** .2796
Psychoticism	** .2260
G.S.I.	**** .2602

* $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$; **** $P \leq .000$

Table 7
Correlations of EDSCQ Scales, Age and Sex
With BSI Symptomatology N = 170

Symptom	Age	Sex		Individual Scale	Social Support Scale	Singles & Married Economic Scale		Demo- graphic Scale
		1 = Male	2 = Female					
Somatization	**	-.1931		.0600		.1077	.0655	.0717
Obsessive Compulsiveness	**	-.1991		.0310	*	.1547	.0890	.1111
Interpersonal Sensitivity	****	-.3079		.0824	*	.1644	** .2199	** .2096
Depression	****	-.3015		.0083	*	.1713	*** .1929	**** .2607
Anxiety	**	-.1099	*	-.1556		.1367	* .1217	** .2186
Hostility	****	-.4442		.0622		.0465	** .2042	** .1874
Phobic Anxiety	***	-.2324	*	-.1213		.1849	* .1530	**** .2554
Paranoid Ideation	****	-.2661	**	-.1962	* -.1311	* .1706	*** .2379	** .1882
Psychoticism	****	-.2661	*	-.1648		.1400	** .1902	* .1729
G.S.I.	****	-.3161	*	-.1308		.1707	* .1741	*** .2459

* $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$; **** $P \leq .000$

When the singles are examined separately from the married group, it is interesting to note that social support scores are significant for the single group only, (see Tables 8 and 9). On the contrary the married tend to show somewhat more vulnerability to economic stress than the single, for whom economic stress is not significantly important.

It is interesting to note that for all three samples (married and singles combined, singles separate and married separate) age and sex show a consistent negative relationship with symptomatology. In the case of age, this means that the younger one is, the higher is one's symptom score. With respect to sex, the negative relationship denotes that males are manifesting or at least are reporting higher symptom levels than females.

Table 8
Correlations of EDSCQ Scale Scores, Age and Sex
With BSI Symptomatology N = 75 Single Subjects

Symptom	Age	Sex		Individual Scale	Social Support Scale	Economic Scale	Demographic Scale
		1 = Male	2 = Female				
Somatization		-.1431	-.0275	.1480	** .2737	.1218	.0800
Obsessive Compulsiveness	*	-.2373	-.0756	-.1514	* .2628	.1451	.0947
Interpersonal Sensitivity	**	-.2696	-.1543	-.0266	*** .3689	* .2054	* .2093
Depression	*	-.2282	-.0571	-.0591	** .2866	.1207	** .2794
Anxiety		-.0726	-.1004	-.0977	** .3165	.0315	* .2232
Hostility	****	-.3885	-.0955	.0572	** .3228	* .1966	.1368
Phobic Anxiety		-.1304	-.1637	.0147	**** .4198	.0894	.1766
Paranoid Ideation	*	-.2582	-.1866	.1240	*** .3551	.1826	.1152
Psychoticism	**	-.2835	-.1908	.0746	* .2678	.1672	.1312
G.S.I.	**	-.2758	-.0993	-.0078	**** .4114	.1569	* .2584

* $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$; **** $P \leq .000$

Table 9

Correlations of EDSCQ Scale Scores, Age and Sex
With BSI Symptomatology N = 95 Married Subjects

Symptom	Age	Sex		Individual Scale	Social Support Scale	Economic Scale	Demographic Scale	
		1. Male	2. Female					
Somatization	*	-.2012	-.0834	.0373	-.0348	.0149		.0128
Obsessive Compulsiveness	*	-.1995	-.0565	.1087	.1046	.0869		.1307
Interpersonal Sensitivity	**	-.2914	-.1541	.1220	.0856	* .1994	*	.2072
Depression	**	-.2952	-.1426	.0374	.1437	* .2022	*	.2213
Anxiety	**	-.2980	* -.1935	.0434	.0167	* .1813	*	.2218
Hostility	*****	-.4079	-.0831	.0544	-.0435	.1520	*	.1760
Phobic Anxiety	**	-.2730	-.0823	.0081	-.0074	.1378	**	.2713
Paranoid Ideation	**	-.2620	* -.1949	.1289	.0708	** .2575	*	.2335

Table 9 (continued)

Psychoticism	***	-.3193	-.1378	.0287	.0861	*	.2086	*	.2018
G.S.I.	***	-.3226	* -.1425	.0827	.0324		.1676	*	.2232

* $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$; **** $P \leq .000$

When the four scales, along with sex and age are entered into stepwise regression equations for the total sample only some factors show a significant relationship with BSI symptomatology. (see Table 10). The computer program automatically, on the basis of probability, places variables in the equation (or does not place them) and hence Table 10 to 15 only give data for variables with probabilities less than .05. Age was found to enter significantly and negatively into all symptom equations except anxiety and phobic anxiety. Sex was found to enter significantly and negatively into the equations for anxiety and paranoid ideation. The social support scale was found to enter significantly and positively into all equations except the anxiety and phobic anxiety equations. The demographic scale was found to enter significantly and positively in the anxiety and phobic anxiety equations.

Table 10

Multiple Regression Analysis of Age, Sex
and The Four EDSCQ Scales (N=170, Total Sample)

(Variables Significant at .05 level)

Symptoms	Variables	Adjusted R ² as Increased by Inclusion of Variable	F Ratio	Probability	Beta in Final Equation	Constant in Final Equation
Somatization	Age	0.032	6.509	0.012	-.2229	51.1437
	Social Support Scale	0.048	5.269	0.006	.1515	
Obsessive-Compulsive	Age	0.034	6.936	0.009	-.2387	50.1764
	Social Support Scale	0.068	7.136	0.009	.2016	
Interpersonal Sensitivity	Age	0.089	17.600	0.0000	-.3539	50.2085
	Social Support Scale	0.137	14.442	0.002	.2340	
Depression	Age	0.085	16.794	0.0000	-.3486	50.9227
	Social Support Scale	0.136	14.295	0.001	.2398	
Anxiety	Demographic Scale	0.042	8.431	0.004	.2174	50.8927
	Sex	0.060	6.421	0.041	-.1537	
Hostility	Age	0.193	41.052	0.0000	-.4715	60.0760
	Social Support Scale	0.206	22.856	0.049	.1391	
Phobic Anxiety	Demographic Scale	0.060	11.588	0.001	.2554	45.2496
	Sex	0.060	11.588	0.001	.2554	
Paranoid Ideation	Age	0.065	12.797	0.0004	-.3043	56.6704
	Social Support Scale	0.112	11.652	0.002	.2150	
	Sex	0.136	9.832	0.020	-.1694	

Table 10 (continued)

Psychoticism	Age	0.084	16.354	0.0001	-.3401	53.3408
	Social Support Scale	0.120	12.417	0.006	.2064	
G.S.I.	Age	0.095	18.652	0.0000	-.3637	52.0302
	Social Support Scale	0.146	1.469	0.001	.2421	

With the total sample, regression analyses was also performed with only the four scales (age and sex were excluded). (See Table 11). This time the social support scale only entered significantly and positively into the equation for obsessive compulsiveness. The economic scale was found to enter significantly and positively into the equations for interpersonal sensitivity, hostility, paranoid ideation and psychoticism. The demographic scale was found to enter in significantly and positively into the equations for depression, anxiety, phobic anxiety and the total G.S.I. score.

With the total sample the economic scale was entered alone into the symptom equations. The economic scale was found to enter significantly and positively into the equations for interpersonal sensitivity ($P = .0040$); depression ($P = .0117$); hostility ($P = .0077$); phobic anxiety ($P = .0478$); paranoid ideation ($P = .0018$); psychoticism ($P = .0135$); and GSI ($P = .0231$).

The demographic scale was also entered in alone into the equations. This scale was found to enter significantly and positively into the equations for interpersonal sensitivity ($P = .0061$); depression ($P = .0006$); anxiety ($P = .0042$); hostility ($P = .0147$); phobic anxiety ($P = .0008$); paranoid ideation ($P = .0140$); psychoticism ($P = .0250$); and GSI ($P = .0012$).

Table 11

Multiple Regression Analysis of
The Four EDSCQ Scales (N=170, Total Sample)

(Variables Significant at .05 level)

Symptoms	Variables	Adjusted R ² as Increased by Inclusion of Variable	F Ratio	Probability	Beta in Final Equation	Constant in Final Equation
Somatization	(None)					
Obsessive-Compulsive	Social Support Scale	0.018	4.120	0.044	.1547	47.2682
Interpersonal Sensitivity	Economic Scale	0.043	8.537	0.004	.2199	41.6015
Depression	Demographic Scale	0.062	12.250	0.0006	.2607	44.9964
Anxiety	Demographic Scale	0.042	8.430	0.004	.2186	46.8277
Hostility	Economic Scale	0.036	7.269	0.007	.2042	44.8087
Phobic Anxiety	Demographic Scale	0.060	11.588	0.0008	.2554	45.2496
Paranoid Ideation	Economic Scale	0.051	10.075	0.0018	.2379	43.0428
Psychoticism	Economic Scale	0.030	6.232	0.0135	.1902	45.6069
G.S.I.	Demographic Scale	0.055	10.815	0.0012	.2459	46.8220

Identical analyses were performed on the singles and the married as two distinct groups. For both groups analyses with the raw and proportioned data yielded the same results. When the four EDSCQ scales along with the age and sex are entered into the equations for the single subjects the social support scale was found to enter significantly and positively into all symptom equations. Age was found to enter significantly and negatively into the equations for obsessive-compulsiveness, interpersonal sensitivity, hostility, paranoid ideation, psychoticism and the G.S.I. (see Table 12). When only the four scales were entered into the equation (age and sex were excluded) for the single group, only social support was found to enter significantly and positively into the symptom equations, (see Table 13). When the economic variable was entered alone into the equations, it was not found to be significant for any symptom.

Table 12

Multiple Regression Analysis of Age, Sex
and The Four EDSCQ Scales (N=75, Single Subjects)

(Variables Significant at .05 level)

Symptoms	Variables	Adjusted R ² as Increased by Inclusion of Variable	F Ratio	Probability	Beta in Final Equation	Constant in Final Equation
Somatization	Social Support Scale	0.062	5.832	0.0183	.2737	42.1920
Obsessive-Compulsive	Social Support Scale	0.056	5.341	0.0237	.2524	49.5086
	Age	0.095	4.834	0.0467	-.2256	
Interpersonal Sensitivity	Social Support Scale	0.124	11.341	0.0012	.3572	44.9699
	Age	0.177	8.876	0.0199	-.2531	
Depression	Social Support Scale	0.069	6.442	0.0133	.2866	44.9767
Anxiety	Social Support Scale	0.088	8.015	0.0060	.3165	41.9053
Hostility	Age	0.139	12.623	0.0007	-.3744	54.2870
	Social Support Scale	0.233	11.338	0.0000	.3065	
Phobic Anxiety	Social Support Scale	0.165	15.186	0.0002	.4198	38.2790
Paranoid Ideation	Social Support Scale	0.114	10.387	0.0019	.3439	47.2343
	Age	0.162	8.041	0.0007	-.2423	
Psychoticism	Age	0.067	6.206	0.0151	-.2717	51.8694
	Social Support Scale	0.121	5.954	0.0041	.2552	
G.S.I.	Social Support Scale	0.158	14.671	0.0003	.3995	45.9382
	Age	0.214	10.927	0.0001	-.2573	

Table 13

Multiple Regression Analysis of
The Four EDSCQ Scales (N=75, Single Subjects)

(Variables Significant at .05 level)

Symptoms	Variables	Adjusted R ² as Increased by Inclusion of Variable	F Ratio	Probability	Beta in Final Equation	Constant in Final Equation
Somatization	Social Support Scale	0.062	5.832	0.0183	.2737	42.1920
Obsessive-Compulsive	Social Support Scale	0.056	5.341	0.0237	.2628	44.097
Interpersonal Sensitivity	Social Support Scale	0.124	11.341	0.0012	.3689	38.2174
Depression	Social Support Scale	0.069	6.442	0.0133	.2866	44.9767
Anxiety	Social Support Scale	0.088	8.015	0.0060	.3165	41.9053
Hostility	Social Support Scale	0.092	8.135	0.0052	.3238	46.0036
Phobic Anxiety	Social Support Scale	0.165	15.186	0.0002	.4198	38.270
Paranoid Ideation	Social Support Scale	0.114	10.387	0.0019	.3551	41.2858
Psychoticism	Social Support Scale	0.059	5.485	0.0220	.2678	44.9987
G.S.I.	Social Support Scale	0.158	14.671	0.0003	.4114	39.9581

When the demographic scale was entered alone into the equations for the single group, it entered significantly into the equations for depression ($P = .0152$) and the G.S.I. ($P = .0252$).

With the married group, age and sex along with the four scales were entered into the regressions (see Table 14). Age was found to enter significantly and negatively into all equations except those for somatization and obsessive-compulsiveness. Sex was found to enter significantly and negatively into the equation for anxiety. The social support scale was found to enter significantly and positively into the equation for depression and the economic scale was found to enter significantly and positively into the equation for paranoid ideation. When only the four scales are entered into the equations, the economic scale was found to enter significantly and positively into the equations for paranoid ideation and psychoticism. The demographic scale was found to significantly and positively enter the equations for interpersonal sensitivity, depression, anxiety, phobic anxiety and the G.S.I. (see Table 15).

Table 14

Multiple Regression Analysis of Age, Sex
and The Four EDSCQ Scales (N=95, Married Subjects)

(Variables Significant at .05 level)

Symptoms	Variables	Adjusted R ² as Increased by Inclusion of Variable	F Ratio	Probability	Beta in Final Equation	Constant in Final Equation
Somatization	(None)					
Obsessive-Compulsive	(None)					
Interpersonal Sensitivity	Age	0.075	8.61	0.0042	-.2914	61.1787
Depression	Age	0.077	8.879	0.0037	-.3425	51.2466
	Social Support Scale	0.114	7.024	0.0309	.2181	
Anxiety	Age	0.079	9.065	0.0033	-.3078	67.6290
	Sex	0.113	6.996	0.0350	-.2081	
Hostility	Age	0.157	18.563	0.0000	-.4079	67.0287
Phobic Anxiety	Age	0.064	7.411	0.0077	-.2730	60.1933
Paranoid Ideation	Age	0.059	6.857	0.0103	-.2441	49.2141
	Economic Scale	0.106	6.606	0.0021	.2392	
Psychoticism	Age	0.092	10.447	0.0014	-.3193	64.5426
G.S.I.	Age	0.094	10.804	0.0014	-.3226	63.5012

Table 15

Multiple Regression Analysis of
The Four EDSCQ Scales (N=95, Married Subjects)

(Variables Significant at .05 level)

Symptoms	Variables	Adjusted R ² as Increased by Inclusion of Variable	F Ratio	Probability	Beta in Final Equation	Constant in Final Equation
Somatization	(None)					
Obsessive-Compulsive	(None)					
Interpersonal Sensitivity	Demographic Scale	0.033	4.172	0.0439	.2072	45.1389
Depression	Demographic Scale	0.039	4.790	0.0311	.2213	45.2179
Anxiety	Demographic Scale	0.039	4.811	0.0307		
Hostility	(None)					
Phobic Anxiety	Demographic Scale	0.063	7.312	0.0081	.2713	44.3129
Paranoid Ideation	Economic Scale	0.056	6.605	0.0117	.2575	41.7436
Psychoticism	Economic Scale	0.033	4.186	0.0436	.2086	44.2839
G.S.I.	Demographic Scale	0.040	4.876	0.0297	.2232	46.9550

When the economic scale was entered alone into the equations for the married sample, it was found to enter significantly and positively into the equations for depression ($P = .0494$), paranoid ideation ($P = .0118$) and psychoticism ($P = .0436$). When the demographic scale was entered alone into the equations for the married group, it was found to enter significantly and positively into the equations for interpersonal sensitivity ($P = .0439$), depression ($P = .0311$), anxiety ($P = 1.0308$), phobic anxiety ($P = .0082$), paranoid ideation ($P = .0228$), and G.S.I. ($P = .0297$).

To examine if the single group differed significantly from the married group in terms of age, sex, the four EDSCQ scales and BSI symptomatology, t-tests were performed between the means of the two groups. The single group was found to be significantly younger in age ($t = 9.9105$, $p \leq .001$), to have significantly higher mean stress scores on the economic scale ($t = 3.2707$, $p \leq .01$), the demographic scale ($t = 4.8869$, $p \leq .001$) and on the total stress score ($t = 2.1239$, $p \leq .05$). With regard to BSI symptomatology, the single group was found to have a significantly higher mean interpersonal sensitivity score ($t = 1.752$, $p \leq .05$), depression score ($t = 1.78369$, $p \leq .05$) and hostility score ($t = 2.8269$, $p \leq .01$).

It was questioned whether the single group had a higher economic, demographic and total stress score due to the fact that they were younger (younger subjects had significantly higher rates) or whether it was the status of being single itself that explained the higher stress level. When both age and marital status are entered into a regression equation, both age and marital status entered

significantly into the following equations: somatization (age, $P = .01$; marital status, $P = .03$), obsessive-compulsiveness (marital status, $P = .008$; age, $P = .008$), depression (age, $P = .0001$; marital status, $P = .04$), hostility (age, $P = .000$; marital status, $P = .045$), paranoid ideation (age, $P = .004$; marital status, $P = .01$), psychoticism (age, $P = .0001$; marital status, $P = .001$), and G.S.I. (age, $P = .0000$; marital status $P = .0066$). For two symptoms, interpersonal sensitivity and phobic anxiety only age entered significantly at the $P = .0000$ and $P = .0026$ levels, respectively. Overall it can be concluded that marital status independently contributes to symptom prediction.

When comparing the single group with the married group another issue of concern was the fact that not everyone in the married group was actually cohabitating with their spouse. Thirty-seven percent of the married group were actually divorced, separated or widowed. T-tests revealed no significant difference in mean G.S.I. scores between those living with their spouse and those not living with spouse. It was found that the widowed had significantly lower mean G.S.I. scores than the separated ($t = 2.58, P \leq .05$) and the divorced ($t = 2.67, P \leq .05$).

Pearson product moment correlations were performed between each of the five EDSCQ scales (see Table 16).

Table 16

Intercorrelations of the Four EDSCQ Subscales
and the Total EDSCQ Score N = 170 Total Sample

	Individual Scale	Social Support Scale	Economic Scale	Demographic Scale	Total EDSCQ Score
Individual Scale	**** 1.000	** .1993	**** .2572	.1010	**** .3776
Social Support Scale	** .1993	**** 1.000	**** .3157	** .2115	**** .7386
Economic Scale	**** .2572	**** .3157	**** 1.000	**** .3312	**** .8038
Demographic Scale	.1010	** .2115	**** .3312	**** 1.000	**** .5515
Total EDSCQ Score	**** .3776	**** .7386	**** .8038	**** .5515	**** 1.000

* $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$; **** $P \leq .0000$

Table 16 reveals that all five EDSCQ scales intercorrelate highly with each other. Similarly, Pearson product moment correlations revealed that all BSI symptom dimensions and the General Severity Index intercorrelate highly with each other at the $P \leq .000$ level.

Hypothesis IV

The individual items of the EDSCQ as separate predictors, will be positively related to the severity of symptomatology.

When examining the correlations between the rating from 1 to 10 for each of the sixty-three EDSCQ items and symptomatology for the most part the general hypothesis that the greater the level of stress, the greater the level of symptomatology is supported. (see Table 17).

Hypothesis V

There will be a positive relationship between the social support scale and symptomatology.

Correlations between the social support scale and BSI symptom levels were discussed earlier (see Tables 7, 8, and 9). From the tables it can be seen that social support correlated highly with all symptoms (including the GSI) except somatization and hostility, when the total sample of 170 is considered. When the sample was divided into a single and a married group, it was found that lack of social support was significantly and positively related to all symptoms for the single group, but there was no significant relationship between social support and symptomatology for the married group.

Table 17

Correlation of EDSCQ Items and Severity of BSI Symptomatology

Symptoms	Age-V2	Sex-V3	Religion V14 Item #017	Ethnicity V15 Item #018	Citizenship V16 Item #019	Native Language V17 Item #020
Somatization (V4)	** -.1931	-.0649	.0419	.1185	.0306	* -.1650
Obsessive Compulsiveness (V5)	** -.1991	-.0663	-.0178	.0838	-.0148	***-.2345
Interpersonal Sensitivity (V6)	***-.3079	* -.1621	-.0230	** .1786	-.0191	* -.1264
Depression (V7)	***-.3015	-.1167	.0356	.0747	-.0114	* -.1765
Anxiety (V8)	** -.2099	* -.1556	-.0480	.0238	.0519	* -.1349
Hostility (V9)	***-.4442	-.0983	-.0214	* .1474	-.0417	** -.1938
Phobic Anxiety (V10)	***-.2324	-.1213	-.0996	.0985	.0369	* -.1503
Paranoid Ideation (V11)	***-.2661	**-.1962	.0666	* .1261	-.0320	** -.1953
Psychoticism (V12)	***-.2995	* -.1648	-.0703	* .1606	-.0452	** -.2058
GSI (V13)	***-.3161	* -.1308	-.0150	* .1309	.0187	** -.2209

Table 17 (continued)

Interpretation	Younger subjects had significantly higher symptom scores.	Male = 1 Female = 2 Males tend to have significantly higher symptom scores.	Religion is not significantly related to symptoms.	Ethnicity is significantly related to: interpersonal sensitivity, hostility, paranoid ideation, psychoticism, and GSI in the predicted direction.	Citizenship was not significantly related to symptoms.	Results are contradictory, speaking a different language is significantly related to lower symptom levels.
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Table 17 (continued)

Symptoms	Language Spoken At Home V18 Item #021	Marital Status V19 Item #022	Education V20 Item #023	Father's Marital Status V21 Item #024	Mother's Marital Status V22 Item #025	Father's Education Level V23 Item #026
Somatization (V4)	-.1088	* .1582	.0373	-.0089	-.0570	-.0658
Obsessive Compulsiveness (V5)	-.0476	** .1997	.0239	-.0660	-.0641	.0152
Interpersonal Sensitivity (V6)	-.0380	.1186	.1158	-.0121	-.1167	.0282
Depression (V7)	-.0791	* .1536	-.0330	-.0368	-.0697	-.0640
Anxiety (V8)	-.0340	.1239	.0362	-.0221	-.1119	-.0550
Hostility (V9)	-.0881	* .1436	** .1788	-.0891	*-.1714	-.0044
Phobic Anxiety (V10)	-.1062	.1008	.0711	-.0652	*-.1384	.0373
Paranoid Ideation (V11)	-.1087	** .1896	** .1772	-.0311	*-.1271	.0233
Psychoticism (V12)	-.1176	*** .2338	.0998	-.0875	*-.1431	-.0405
GSI (V13)	-.1009	** .2018	.0883	-.0517	*-.1365	-.0379

Table 17 (continued)

Interpretation	Language spoken at home is not significantly related to symptom severity.	The married tend to have significantly lower symptom scores.	Low education is significantly related to hostility and paranoid ideation.	Father's marital status is not significantly related to symptom severity.	Mother's marital status was significantly related to hostility, phobic anxiety, paranoid ideation and GSI in direction opposite to what would be predicted.	Father's education is not significantly related to symptom levels.
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Table 17 (continued)

Symptoms	Mother's Education V24 Item #027	Type of Parents V25 Item #028	Persons Living in Household V26 Item #029/129	No. of Children V27 Item #030	No. of Siblings V28 Item #031
Somatization (V4)	.0536	.0599	-.0035	-.1096	** .2009
Obsessive Compulsiveness (V5)	.0026	.1158	.0210	-.0544	.1195
Interpersonal Sensitivity (V6)	.0379	.1088	.0270	-.0757	.0471
Depression (V7)	-.0137	** .2021	.0135	*-.1260	.1194
Anxiety (V8)	.0271	.0701	.0547	-.0117	* .1228
Hostility (V9)	-.0404	.0606	-.1107	-.1186	* .1239
Phobic Anxiety (V10)	.0260	-.0026	.0489	-.0789	.0104
Paranoid Ideation (V11)	.0189	.1106	.0435	-.0462	.0805
Psychoticism (V12)	.0225	* .1448	-.0285	-.1159	.0617
GSI (V13)	.0082	.1170	.0399	-.0964	* .1211

Table 17 (continued)

Interpretation	Mother's education is not significantly related to symptom level.	Not having two natural parents is related to higher depression and psychoticism scales.	Persons living in household is not related to symptom levels.	Having children is inversely related to depression.	The greater the number of siblings the significantly lower were anxiety, hostility, somatization and GSI.
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Table 17 (continued)

Symptoms	No. of Siblings Living near V29 Item #032	No. of Close Relatives V30 Item #033	No. of Relatives Living near V31 Item #034	No. of Weekly Contact with Relatives V32 Item #035	No. of Close Friends V33 Item #036
Somatization (V4)	.0346	.1156	.1012	.0180	** .1973
Obsessive Compulsiveness (V5)	.0313	.0034	.1088	.0883	***.2596
Interpersonal Sensitivity (V6)	-.0493	.0158	-.0100	* .1254	***.2506
Depression (V7)	-.0568	.0251	.0956	***.2326	** .2244
Anxiety (V8)	.0144	.0168	.1055	* .1339	** .1935
Hostility (V9)	.0608	.0156	.1216	.0397	* .1531
Phobic Anxiety (V10)	-.0144	.0805	*.1353	* .1408	***.2540
Paranoid Ideation (V11)	.0064	.0793	*.1395	.1027	***.2384
Psychoticism (V12)	.0817	.0416	.0563	* .1472	***.3075
GSI (V13)	-.0000	.0453	.1127	* .1237	***.2817

Table 17 (continued)

Interpretation	Proximity of siblings is unrelated to symptom level.	Number of close relatives is not related to symptom level.	The more close relatives the lower were the hostility, phobic anxiety and paranoid ideation scores.	The greater the contact one has with relatives the lower the interpersonal sensitivity, depression, anxiety, phobic anxiety, psychoticism and GSI.	Having numerous friends is significantly related to lower severity levels of all symptoms.
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Table 17 (continued)

Symptoms	No. of Friends Living near V34 Item #037	No. of Social Contacts with Friends V35 Item #038	No. of Visits Made to Subject V36 Item #039	No. of Visits Made by Subject V37 Item #040	Club Membership V38 Item #041
Somatization (V4)	** .1864	.0367	-.0489	.0325	-.0686
Obsessive Compulsiveness (V5)	** .2027	.1122	*.1682	.1053	-.1040
Interpersonal Sensitivity (V6)	** .1897	*.1455	*.1608	** .2167	.0269
Depression (V7)	** .1867	.0727	*.1514	** .2238	.0161
Anxiety (V8)	.1217	.0466	.1114	.1011	-.0796
Hostility (V9)	.0901	.0922	.0896	.1034	-.0380
Phobic Anxiety (V10)	** .2199	*.1469	.0698	* .1392	.0814
Paranoid Ideation (V11)	* .1739	.0772	.1011	.1168	-.0382
Psychoticism (V12)	***.2405	*.1576	*.1680	* .1756	-.0596
GSI (V13)	***.2238	.0985	*.1333	* .1686	-.0377

Table 17 (continued)

Interpretation	Having friends near is significantly related to lower symptom levels.	Having frequent contact with friends is significantly related to lower interpersonal sensitivity, phobic anxiety and psychoticism.	Having visitors is significantly related to lower obsessive compulsive, interpersonal sensitivity, depression, psychoticism and GSI scores.	Making visits is significantly related to lower interpersonal sensitivity, depression, phobic anxiety, psychoticism and GSI scores.	Club membership is not significantly related to symptom level.
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Table 17 (continued)

Symptoms	No. of Offices Held in Clubs V39 Item #042	Crisis Support V40 Item #043	Occupation Level V41 Item #044	Employment Status V42 Item #048	Annual Income V43 Item #052	Income Spent Per Year V44 Item #053
Somatization (V4)	-.1014	-.0239	.0412	-.0165	* .1634	-.0274
Obsessive Compulsiveness (V5)	-.0868	* .1263	.1022	.0259	** .1857	.0018
Interpersonal Sensitivity (V6)	-.0126	.0774	***.2856	.0213	** .2262	.0458
Depression (V7)	-.0243	.0876	* .1572	.1183	** .2171	.0713
Anxiety (V8)	-.1090	.1117	.1023	.0365	** .1464	.0242
Hostility (V9)	-.0391	.0620	***.3315	-.0223	***.2526	.0083
Phobic Anxiety (V10)	-.0359	* .1289	* .1628	.0495	** .2036	.0471
Paranoid Ideation (V11)	.0065	** .1858	***.2592	.0474	***.2396	.0300
Psychoticism (V12)	-.0273	.0948	***.2329	.0912	** .2216	.0191
GSI (V13)	-.0699	.1224	** .2018	.0474	** .2240	.0174

Table 17 (continued)

Interpretation	Number of offices held is not significantly related to symptom level.	Having relatives or close friends help in a crisis is significantly related to lower obsessive compulsive, phobic anxiety, paranoid ideation and GSI levels.	The higher the education level the lower all symptoms except somatization, obsessive compulsive and anxiety.	Employment status is not significantly related to symptom level.	The higher the income the significantly lower the symptom level.	Income spent was not significantly related to symptom level.
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Table 17 (continued)

Symptoms	Source of Income V45 Item #054	Number of People Contributing to V46 Item #057	Number of Dependents V47 Item #058	Economic Mobility V48 Item #059	Economic Satisfaction V49 Item #063
Somatization (V4)	***.2749	-.0174	**-.1835	** .1918	** .1990
Obsessive Compulsiveness (V5)	***.2359	.0643	-.0919	** .2222	***.3391
Interpersonal Sensitivity (V6)	***.2546	-.0180	-.0642	***.2339	***.2540
Depression (V7)	***.2911	.0318	* -.1519	***.2822	***.3940
Anxiety (V8)	** .2042	.0086	-.0661	***.2348	***.2894
Hostility (V9)	***.3072	-.0332	.0517	** .1856	***.2814
Phobic Anxiety (V10)	** .2303	.0431	-.0680	***.2914	***.2962
Paranoid Ideation (V11)	***.2720	.0093	.0341	***.2333	***.3378
Psychoticism (V12)	** .2131	.0076	-.0238	***.2794	***.3317
GSI (V13)	***.3072	.0099	-.0828	***.3029	***.3846
Interpretation	Being on welfare or unemployment insurance is significantly related to higher symptoms.	Number of people contributing to income is not significantly related to symptom levels.	The greater the number of dependents the lower the somatization and depression scores.	Those with upward mobility have significantly lower symptom scores.	The greater the economic satisfaction the lower the symptom level.

Table 17 (continued)

Symptoms	Home Ownership V50 Item #064	Monthly rent or value of home V51 Item #065/165	Length of Employ- ment/Unemployment V52 Item 071/171	Spouse's Occu- pational Level V53 Item #045	Spouse's Employment Status V54 Item #049
Somatization (V4)	.0657	-.0731	.0633	-.0115	.0980
Obsessive Compulsiveness (V5)	.0452	.0367	.0537	-.0260	.0516
Interpersonal Sensitivity (V6)	* .1430	*.1505	.1043	-.0051	.0771
Depression (V7)	** .2220	.0037	*.1365	.0209	-.0575
Anxiety (V8)	* .1376	.0185	.1013	.1252	.0224
Hostility (V9)	***.2674	.0517	*.1518	.0702	.0828
Phobic Anxiety (V10)	.1245	.0570	.1068	.0232	.1409
Paranoid Ideation (V11)	** .1829	.0576	.0974	.1143	.1304
Psychoticism (V12)	** .1780	.0188	*.1534	.0254	.0187
GSI (V13)	** .2095	.0252	.1101	.0475	.0721
Interpretation	Owning a home is signifi- cantly related to lower symptom scores.	The greater the value of property the significantly lower the inter- personal sensi- tivity scores.	The longer one has been employed the significantly low- er is the depres- sion, hostility and psychoticism score.	Spouse's occu- pational level is not signifi- cantly related to symptom level.	Spouse's employ- ment status is not significant- ly related to symptom level.

Table 17 (continued)

Symptoms	Spouse's Mobility V55 Item #060	Spouse's Income V56 Item #070	Length of Spouse Employment/ Unemployment V57 Item #072/172	Father's Occupational Level V58 Item #046	Father's Employment Status V59 Item #050
Somatization (V4)	.0296	-.1014	* .1682	-.0066	**-.1813
Obsessive Compulsiveness (V5)	-.0502	.0128	.0375	-.0301	-.1020
Interpersonal Sensitivity (V6)	.1103	.1260	.1581	.0287	-.0802
Depression (V7)	.1126	.0177	.1352	-.0347	-.0875
Anxiety (V8)	.0917	.0879	* .1844	.0158	-.0433
Hostility (V9)	.0608	.0415	.0898	-.0729	* -.1392
Phobic Anxiety (V10)	.0245	.0841	* .2884	-.0063	-.1148
Paranoid Ideation (V11)	.0711	.1859	.1183	.0269	* -.1423
Psychoticism (V12)	*.1639	.1112	.1130	-.0163	-.0476
GSI (V13)	.0528	.0453	* .1807	-.0302	* -.1294

Table 17 (continued)

Interpretation	Spouse's upward mobility is significantly related to lower psychoticism scores.	Spouse's income level is not significantly related to symptom level.	The longer the spouse is employed the significantly lower the somatization, anxiety, phobic anxiety and GSI scores.	Father's occupational level is not significantly related to symptom level.	Father being employed is significantly related to higher somatization, paranoid ideation and GSI scores.
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Table 17 (continued)

Symptoms	Father's Income V60 Item #055	Father's Mobility V61 Item #061	Length of Father's Employment/ Unemployment V62 Item #073/173	Mother's Occupational Level V63 Item #047	Mother's Employment Status V64 Item #051
Somatization (V4)	-.0934	.0593	.0800	.0041	*-.1494
Obsessive Compulsiveness (V5)	.0189	.0022	.0268	-.0652	*-.1623
Interpersonal Sensitivity (V6)	-.0043	.0875	*.1341	-.0188	-.0690
Depression (V7)	-.0567	.0299	.0887	-.0017	-.1105
Anxiety (V8)	-.0330	-.0062	.0558	-.0558	-.1130
Hostility (V9)	*-.1501	-.0201	*.1607	*-.1513	-.1008
Phobic Anxiety (V10)	-.0542	-.0178	.0561	-.0798	*-.1409
Paranoid Ideation (V11)	-.0155	-.0114	.0797	-.0951	-.0376
Psychoticism (V12)	-.0899	-.0664	*.1331	-.0412	-.0660
GSI (V13)	-.0910	-.0011	.1099	-.0638	*-.1386

Table 17 (continued)

Interpretation	Father's income level is related to hostility.	Father's mobility is not significantly related to symptom level.	The longer father is employed the significantly lower the interpersonal sensitivity, hostility, and psychoticism scores.	The higher the mother's occupational level the higher the hostility score.	Lack of employment of mother is related to significantly lower somatization, obsessive compulsive, phobic anxiety and GSI scores.
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Table 17 (continued)

Symptoms	Mother's Income V65 Item #056	Mother's Mobility V66 Item #062	Length of Mother's Employment/ Unemployment V67 Item #074/174	Size of City of Town V68 Item #075	Type of Accommodation V69 Item #076
Somatization (V4)	-.0814	.0785	-.0125	.0958	** .2173
Obsessive Compulsiveness (V5)	-.0541	*.1319	-.0103	***.2418	* .1702
Interpersonal Sensitivity (V6)	.0026	.0636	.0609	.0720	** .2053
Depression (V7)	*-.1463	*.1617	.0077	** .2055	* .1397
Anxiety (V8)	*-.1295	.0560	-.0332	** .1938	***.2547
Hostility (V9)	-.0882	-.0242	** .1969	.0999	** .1930
Phobic Anxiety (V10)	-.1240	.0259	.0921	.0740	***.2289
Paranoid Ideation (V11)	.0082	.1045	.0951	.0610	** .1971
Psychoticism (V12)	-.0650	.0841	.0455	.0753	** .2126
GSI (V13)	-.1046	.1030	.0082	* .1589	***.2536

Table 17 (continued)

Interpretation	The higher mother's income the significantly lower the depression, anxiety and phobic anxiety score.	Mother's upward mobility is significantly related to lower obsessive compulsive scores.	The longer mother is employed the significantly lower the hostility score.	The larger the city/town the significantly greater the level of obsessive compulsive, depression, anxiety and GSI.	Living in a house is significantly related to lower symptom levels.
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Table 17 (continued)

Symptoms	Rating of Community Facilities V70 Item #077	Use of Community Facilities V71 Item #078	Length of Time At Present Address V72 Item #079	Length of Time In Same City V73 Item #080	Length of Time In Same Province V74 Item #081
Somatization (V4)	.1054	.0576	-.0087	*-.1650	-.0310
Obsessive Compulsiveness (V5)	.0421	-.0627	.1243	-.0747	.0070
Interpersonal Sensitivity (V6)	.0795	*.1300	* .1591	.0349	.1081
Depression (V7)	.0713	*.1362	***.2603	.0335	.0875
Anxiety (V8)	.1012	-.0401	* .1681	-.0529	*.1233
Hostility (V9)	.0240	.0309	***.2346	-.0553	-.0294
Phobic Anxiety (V10)	***.2530	*.1769	* .1642	.0266	.0836
Paranoid Ideation (V11)	.0913	-.0116	* .1722	-.0632	.0171
Psychoticism (V12)	.1135	.0568	* .1392	-.0239	.0459
GSI (V13)	.1155	.0559	***.2285	-.0353	.0750

Table 17 (continued)

Interpretation	Satisfaction with community facilities is significantly related to lower phobic anxiety scores.	The greater the use of community facilities the significantly lower the interpersonal sensitivity, depression, and phobic anxiety scores.	The longer the time living at present address the significantly lower are all symptom scores except somatization, and obsessive compulsiveness.	The longer the time living in same city the significantly greater the somatization score.	The longer the time living in same province the significantly lower the level of anxiety.
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Table 17 (continued)

Symptoms	Number of Household Moves in Last 5 Years V75 Item #082	Satisfaction With Neighbourhood V76 Item #083
Somatization (V4)	.0302	.0230
Obsessive Compulsiveness (V5)	.1036	-.0663
Interpersonal Sensitivity (V6)	* .1531	-.0294
Depression (V7)	** .2084	-.0014
Anxiety (V8)	* .1684	.0469
Hostility (V9)	***.2383	-.0039
Phobic Anxiety (V10)	** .1970	-.0662
Paranoid Ideation (V11)	***.2850	.0290
Psychoticism (V12)	** .1847	-.0536
GSI (V13)	** .2156	-.0121
Interpretation	The greater the number of household moves the significantly greater the symptom level (except somatization and obsessive compulsiveness).	Satisfaction with neighbourhood was not significantly related to symptom level.

* $P < .05$ ** $P < .01$ *** $P < .001$

Similarly, in the regression analysis with the total sample, when all four scales along with sex and age are entered into the equation, social support entered significantly into the equation for all symptoms except anxiety and phobic anxiety. When analysis is performed separately with just the single group the social support entered significantly into all regression equations. On the other hand, social support only entered significantly into the equation for depression when only married subjects were considered. When the social support variable was entered alone into the regression equations, it was found that for the total sample, social support entered significantly into the equations for obsessive-compulsiveness ($P = .0439$), interpersonal sensitivity ($P = .0261$) and G.S.I. ($P = .0260$). With the single group, social support was found to enter significantly into all the symptom equations, somatization ($P = .0175$), obsessive compulsiveness ($P = .0227$), interpersonal sensitivity ($P = .0057$), hostility ($P = .0049$), phobic anxiety ($P = .0002$), paranoid ideation ($P = .0018$), psychoticism ($P = .0211$) and G.S.I. ($P = .0002$). Social support did not enter significantly into any of the equations for the married group.

Hypothesis VI

When exploring the individual social support items, close relationships (e.g. number of close friends, number of weekly contacts with friends, crisis support) will have a stronger relationship to symptomatology than diffuse support (number of club memberships, number of offices held in clubs), where close relationships constitutes a greater individual environmental benefit.

From observing Table 17 it can be seen that the following social support items were significantly and positively related to BSI symptomatology: number of siblings, number of relatives living near enough to visit, number of contacts per week with relatives, number of close friends near enough to visit, number of visits made to subject and having a close relative help in a crisis. Thus, the poorer the support of these items the significantly higher would be symptomatology. The two diffuse social support items dealing with club membership and number of offices held in clubs were not significant. This means that high scores on these two items is not predictive of symptomatology. This is in accord with the hypothesis that close support is more pertinent to mental health than diffuse social support.

Hypothesis VII

Those who score high on the total EDSCQ (high stress) and high risk on the social support scale (poor support) will have higher BSI symptomatology scores than those with low risk on both measures. If this relationship is found, support is provided for the economic psychology model which considers the combined effect of both benefits and costs and the stress hypothesis which considers costs.

A competing hypothesis which considers only the direct effects of social support on symptomatology would predict that those with good social support would have significantly lower levels of symptomatology than those with poor social support, irrespective of

stress level. On the other hand, according to the buffering hypothesis, good social support is beneficial during times of stress, as social support moderates the negative effects of stress. According to this hypothesis, subjects with good social support and high total stress will have significantly lower scores than those with poor social support and high stress. At low levels of stress, amount of social support is not significantly related to symptomatology.

The analysis of variance provided support for the economic psychology and the stress hypothesis. Main effects were found for the total EDSCQ stress score $p \leq .002$, but not for social support $p = .861$. Two-way interactions between social support and the total stress score were not significant ($p = .273$).

To further examine each hypothesis the 170 subjects' mean GSI scores were placed into one of four groups: Group 1) poor social support (score of 50 or above) and low EDSCQ total stress (score of 49 or below); Group 2) good social support (score of 49 or below) and low total EDSCQ (score of 49 or below); Group 3) poor social support and high total EDSCQ stress; Group 4) good social support and high total EDSCQ stress (see Table 18 for the mean and standard deviation for each group).

The t-tests revealed that group three reported significantly more symptomatology than group one ($t = 3.3054$, $p \leq .001$) and group two ($t = 2.9188$, $p \leq .01$). These findings provide support for both the economic psychology hypothesis and the stress hypothesis, as it was found that those with high stress scores and poor social support

Table 18
Mean And Standard Deviations of GSI Scores

	<u>N</u>	<u>Mean</u>	<u>Standard Deviation</u>
<u>Group 1</u>			
Low social support/Low EDSCQ stress	32	52.125	7.9373
<u>Group 2</u>			
Good social support/Low EDSCQ stress	23	53.3696	5.5678
<u>Group 3</u>			
Low social support/High EDSCQ stress	103	57.602	8.8882
<u>Group 4</u>			
Good social support/High EDSCQ stress	12	56.744	8.6603

reported significantly higher symptomatology than those with good social support and low stress and those with poor social support but low stress.

In order for a buffering effect to be found, group four (with good support and high stress) would have to be significantly lower than group three (with poor support and high stress) in mean symptomatology. This was not found. To test the direct effect hypothesis of social support, group two with good support and low stress would have to be significantly lower than group one (poor support, low stress), and group four (with good support, high stress) should report less symptomatology than group three, (with low support, high stress). No significant difference was found between groups one and two or groups three and four and consequently the direct effect hypothesis was not supported.

To explore the four hypotheses further, the ten percent most extreme paired cases for each group were chosen (e.g., in group one the GSI scores of the ten lowest EDSCQ total scores and the highest social support stress scores were paired).

Through t-tests it was found that group three's GSI mean was significantly larger than the group two ($t = 2.7649$, $p \leq .05$) and group one ($t = 2.5424$, $p \leq .05$) mean. Thus, results are the same when only the ten percent most extreme paired cases are considered.

When only the single subjects were considered, support for the buffering hypothesis is found, as group three's mean was significantly larger than group four's ($t = 1.907$, $p \leq .05$). Some

support is provided for the economic psychology model as the mean for group three was significantly larger than group two ($t = 2.168$, $p \leq .05$), however, group three was not significantly larger than group one.

When the married subjects are considered, group three's mean is significantly larger than group one ($t = 2.1876$, $p \leq .05$). Group four was also found to be significantly larger than group one ($t = 2.510$, $p \leq .05$) and group two ($t = 2.8985$, $p \leq .01$). This provides support for the economic psychology and the stress hypothesis. Both the buffering and direct effect hypothesis of social support are not supported for married subjects.

Hypothesis VIII

Environmental cost will be a significant determinant of inpatient referral. Environmental cost may solely predict referral or may do so in combination with BSI symptomatology. Thus, inpatients should fall into one of three groups: high EDSCQ stress/high BSI, high EDSCQ stress/low BSI and low EDSCQ stress high BSI. Low scores on both measures would not be expected.

The distribution of referrals was found to be as follows: Low GSI/low EDSCQ - 26.47%; high GSI/low EDSCQ - 5.88%; low GSI/high EDSCQ - 37.06%, and high GSI/high EDSCQ - 30.59%.

A chi-square of 11.731606 was obtained which was significant at the $P \leq .005$ level. Thus it can be concluded that the distribution of referrals does differ from chance. Specifically, referral was associated with EDSCQ stress levels, as 67.6% of the sample had high

stress scores, while only 32.35% of the sample had high BSI scores. Moreover, very few subjects were found to fall into a high GSI/low EDSCQ group, whereas more were found in a high EDSCQ/low GSI group. Thus the EDSCQ total stress score appears to be a better predictor of referral than the GSI.

Results from the phi-coefficient also confirm these findings ($\phi = .2630, p \leq .005$).

CHAPTER FIVE

DISCUSSION

The aim of this thesis was two fold:

- 1) To investigate the validity of the EDSCQ as an assessment and a predictive tool in the referral of psychiatric symptomatology.
- 2) To investigate specifically the relationship between social support (as measured by the EDSCQ) and psychiatric symptomatology.

When examining the results dealing with the validity of the EDSCQ, strong evidence that the EDSCQ is a useful, predictive tool was provided.

From the results of the factor analysis it was confirmed, as expected from the logical and empirical structure of the EDSCQ, that there is a general risk factor, as well as several others that can be identified as economic, social support, demographic and individual integration factors. Interestingly, rather than one general economic factor relating to the economic items on the EDSCQ the Varimax factor solution identified four economic factors, specifically related to the individual, his or her spouse and parents. Similarly, social support items were grouped on close relationships, diffuse relationships and frequency of contact items. Although parental factors such as education and marital status are included in the social scale of the EDSCQ, they constitute a separate factor. All twelve of these factors account for approximately 58% of the variance, supporting the conclusion that

although many independent variables were combined in the construction of the EDSCQ, measuring them quantitatively in this way summarizes them in a form which is much more useful than sixty-three individual items.

Ideally, factor analysis of the EDSCQ should be performed on a larger sample size and on different sample populations. It is also recommended that in the future a separate factor analysis should be performed on single subjects and on married subjects. The factors that emerge may differ for these two groups.

When the relationship between environmental costs as measured by the total EDSCQ stress score and BSI symptomatology was explored, it was found that for both the total and single sample the EDSCQ total stress score correlated significantly and positively with all BSI subscales.

For the married group the total EDSCQ stress score correlated with all symptoms except, somatization, obsessive-compulsiveness and hostility. This finding confirms the ability of the EDSCQ to measure environmental cost and its relationship to symptomatology. The strong relationship to most or all of the BSI subscales suggests these scales measure general distress rather than distinct diagnostic entities. This is further confirmed by the fact that all BSI subscales intercorrelated highly with each other.

Another conclusion that can be drawn from these results is that single individuals are more likely to experience symptomatology when under stress than are married individuals. This suggests that being

married provides a protection against the ill effects of environmental stress, thus being married is a benefit. Several studies have confirmed the idea that marriage provides benefits as it has been found that the married tend to have significantly lower symptomatology rates than singles (Barnes & Prosen, 1984; Berkman & Syne, 1979; Eaton, 1978; Pearlin & Johnson, 1977).

Correlational analysis with the total sample revealed that the economic scale, social support scale and the demographic scale were significantly and positively related to the BSI subscales. The individual scale was only significantly and positively related to the paranoid ideation scale.

A different pattern of relationships emerged when the sample was split into a single and a married group. The social support and demographic scale were most predictive of symptomatology for the single group, while the economic and demographic scale are most predictive for the married group.

Correlations between age, sex and symptomatology were also observed. In the case of age, it was found that age was negatively related to all symptom dimensions when the total sample and married sample were considered. This means that the youngest age group experienced, or at least reported, significantly higher levels of symptomatology. This finding is consistently found in the literature (Aneshensel, Frerichs & Clark, 1981; Bell, LeRoy & Stephenson, 1982; and Leaf, Weissman, Myers, Tischler & Holzer, 1984). This was generally found for the single subjects as well.

One explanation for why the young tend to have the highest symptom levels is that they experience more life events such as marriage, starting a career/education, moving away from home, etc. (Bell, LeRoy & Stephenson, 1982; Eaton, 1978; Thoits, 1982). Numerous studies have linked life events (both positive and negative) with increased stress levels and resultant higher rates of psychiatric disorder (Brown & Birley, 1969; Cooke & Hole, 1983; Myers, Lindenthal & Pepper, 1971; Mueller, 1980).

A significant difference was found between the sexes, with males showing significantly higher symptom levels for interpersonal sensitivity, anxiety, phobic anxiety, paranoid ideation, psychoticism and GSI when the total sample is considered. Results are similar when the sample is split into a single and a married group. These findings are contradictory to most results in the literature which find that females tend to have higher symptom rates (Aneshensel, Frerichs & Clark, 1981; Banks & Jackson, 1982; Bell, LeRoy & Stephenson, 1982; D'Arcy, 1982; Dohrenwend & Dohrenwend, 1976; Weissman & Klerman, 1977).

Perhaps one explanation for why males were found to manifest higher symptom rates in this study is related to the fact that an inpatient sample was studied. It may be the case that in order for males to admit themselves or have someone else admit them into an inpatient ward, they must be presenting severe symptomatology, or at least higher levels of symptomatology than most females. If this is the case, males overall, would be experiencing higher levels of

symptomatology than most of the women in an inpatient ward. The same principle may operate with regard to visits to a general physician. In order for a male to make an appointment to see his General Practitioner, he needs a good reason for going, whereas women are perhaps more likely to seek treatment at the onset of a health problem rather than waiting for symptoms to progress.

Results from the stepwise multiple regression analysis are very similar to the correlational results. When all four EDSCQ subscales were entered into the regression equation for the total sample, the social support, economic and demographic scales were all highly predictive of symptomatology. When single subjects are considered, only the social support scale significantly predicted symptomatology, while the economic and demographic scale significantly predicted symptomatology for the married subjects. When the economic scale was entered alone into the equation, it was highly significant for the total and married sample, but not for the single sample.

When age and sex were added into the regression equations, being younger and male significantly predict higher symptomatology rates for the total, single and married samples.

The first similar finding between the correlation and regression analysis is that the Individual scale is the least predictive of symptomatology. The reason this scale was the least significant is because the sample was very homogeneous in terms of amount of individual risk. Almost all subjects were found to have a low risk score on the individual scale, meaning that most subjects

were Caucasian (90.5%), Canadian (91.7%) and English speaking (90%). Thus, most subjects had low individual risk making the individual scale unrelated to symptomatology.

A second similarity found between the two methods of analyses was that the social support scale is significantly related to all symptom dimensions, including the GSI for single subjects, but social support was only significantly related to depression for the married subjects in the regression analysis. This finding indicates that single subjects who lack social support are significantly more likely to exhibit symptomatology than are married subjects who lack social support. This implies that being married buffers against the cost effect of lack of social support. Furthermore, evidence is provided that marriage is in itself a source of social support. Many researchers have also concluded that marriage itself is a source of social support (Eaton, 1978; and Pearlin & Johnson, 1977). The basic argument behind the idea that marriage is itself a support factor is that many have found a significant and negative relationship between having a confidant and an intimate relationship and symptomatology (Brown, Bhrolchain & Harris, 1975; Campbell, Cope & Teasdale, 1983; Costello, 1982; Husani, Neff, Newbrough & Moore, 1982; Surtees, 1984). It intuitively makes sense that married individuals are more likely to possess an intimate, confiding relationship than someone who is single. It should be mentioned that 37.0% of the married group were actually not living with a spouse (i.e. divorced, separated or widowed). Mean GSI scores were

not found to significantly differ between those who are presently married and those who no longer live with their spouse ($t = 1.578$). Of those who were divorced, separated or widowed 44.12% had dependent children, and it was found that the number of children is negatively related to symptomatology. Thus, almost half of those who were widowed, divorced or separated still had the support of children present in the home. Since an analysis of the married individuals alone would have inflated the significance of these findings, the present analysis is a more demanding test of the difference between these two groups.

A third similar finding between the correlational analyses and the multiple regression analyses was that the economic scale was significantly related to symptomatology among the married but not among the singles. This suggests that married individuals are more likely to manifest symptomatology if exposed to economic stress than single individuals. Perhaps one reason why this is so may be that married individuals are more likely to have children to support, mortgages to contend with and more expenses to pay than those who are single.

From exploring H3, it is apparent that findings for the single group differ from those of the married group. To further explore possible differences between the single and the married group t-tests were carried out to determine if significant mean differences existed between sex, age, the four EDSCQ scales and BSI symptomatology. The single group was found to be significantly

younger in age, to have a significantly higher mean stress score on the economic scale, demographic scale and total stress score and significantly higher mean interpersonal sensitivity, depression and hostility scores. It makes sense that single individuals would have a significantly higher mean economic score when it is considered that annual income is often lower as there is no spouse available to contribute, and singles are perhaps more likely to have unstable employment than a married individual. It also makes sense that the single group would have significantly higher mean demographic scores, as single people are perhaps less stable and more likely to make numerous moves, more likely to live in an apartment than a house and less likely to use community facilities due to the fact that most singles do not have children to take to such things. Furthermore, significantly more single individuals were younger than the married and it has been found that the young are more likely to experience various economic stresses such as unemployment and low income and various demographic stresses such as numerous household moves.

To determine if the significantly higher symptomatology rates and higher EDSCQ stress scores of singles was due to age rather than marital status, these two variables were entered into a regression analysis. It was found that for all symptoms except interpersonal sensitivity and anxiety, both age and marital status were significant predictors of symptomatology. It can be concluded that the differences found between the married and the single group

can be attributed to both variables, not just age alone.

It can be concluded that both correlational and regression analysis reveal that the economic, demographic and social support scales are all significantly related to BSI symptomatology in the predicted direction. The pattern of results, however, is dependent upon marital status, as the single group were highly effected by poor social support, while the married group experienced more symptomatology if under economic stress than the single group. This suggests that despite the fact that all EDSCQ subscales are highly intercorrelated with each other, they have different predictive power and are not redundant in assessing environmental stress.

Analysis at the individual EDSCQ item level revealed that although not every item was significantly related to BSI symptomatology, a large number of items did predict symptomatology significantly and in the expected direction in most cases. EDSCQ item correlations with the BSI total and subscales confirms that the married individuals are least at risk for symptomatology. Also on the individual scale, the items dealing with ethnicity and education were also significant and in the predicted direction. One item dealing with native language was found to be significant but in the opposite direction than what would be expected. This suggests that possessing a different native language other than English is somehow protective. A substantial number of social support, economic and demographic items were significantly related to BSI symptomatology in the predicted direction. Again some items were significant in

the direction opposite to what would be expected. For example, having a mother who was married was significantly and positively related to hostility. This finding is difficult to explain; perhaps this finding was rather coincidental as only significance for one symptom dimension was discovered. Another contradictory finding was that number of children and number of those who are financially dependent on subject was significantly and negatively related to symptomatology. This suggests that the presence of children is beneficial rather than detrimental. One contradictory finding on the economic scale was that spouse's income level was positively related to paranoid ideation. This finding may be coincidental as it was found for only one symptom dimension. Both mother's and father's employment status was found to be significantly and positively related to symptomatology, meaning that those with unemployed parents had lower symptom rates. Likewise, the lower the parents' income, the lower the symptom rates and the lower mother's occupational level was the lower was the hostility subscale. Perhaps these findings are also coincidental as these were only trends and significance was not found for all symptom dimensions. One contradictory finding on the demographic scale was that the longer the length of time living in the same city, the significantly higher was the somatization score. This may be a coincidental finding or it may be that those with physical complaints do not desire to move to a different city.

A replication of this study is recommended to confirm the

individual predictive power of many items and to further explore the contradictory items. It must also be remembered that even if a single item alone is not predictive, it may still make an important contribution to the total score in terms of multiple prediction. Further items analysis must be carried out, but these results provide initial validation for the research basis and direction of item construction on the EDSCQ.

Social Support and Symptomatology

In the process of evaluating the validity of the EDSCQ as a predictive instrument, it was found that the social support scale was significantly and positively related to symptomatology when the total and the single sample are considered. To further explore the relationship between social support and symptomatology, social support was entered alone into regression equations. Social support was found to enter significantly into the regression equation for obsessive-compulsiveness, interpersonal sensitivity, depression, phobic anxiety, paranoid ideation and GSI when the total sample is considered. When the singles alone are considered, social support entered significantly into all equations, meaning that support predicted all BSI symptom dimensions. On the other hand, when only married individuals are considered, social support does not enter into any of the equations, meaning that for the married inpatients social support did not significantly predict symptomatology. Just as was found in the correlational analyses, social support is a very significant factor for single individuals, but not for married

individuals.

When the individual items on the social support scale were studied, it was found that items dealing with close relationships were significantly related to symptomatology in the predicted direction while the two diffuse support factors were not significant. The finding that close relationships are significantly more related to symptomatology than diffuse support has been found by many researchers (Berkman & Syme, 1979; Brugha, Nalsh, Delaney, O'Hanlon, Dondero, Daly, Hickey & Bourke, 1982; Henderson, Byrne, Duncan-Jones, Adcock, Scott & Steele, 1978; Weissman, Paykel, Siegel & Klerman, 1971). Results from this study should be observed with caution as only two items represented diffuse social support. However, greater significance of close supportive ties suggests the need for social support questionnaires to have numerous items dealing with close relationships as they are more predictive of symptomatology than diffuse ties.

When the economic psychology, buffering and direct effect hypotheses are explored, results are dependent on the type of sample considered. Evidence for the economic psychology and stress hypothesis is provided when the total sample and the married sample are considered. On the other hand, when the single sample is considered evidence for the buffering hypothesis is provided. This means that under periods of stress, good social support will mitigate the negative effects of stress and reduce symptomatology for single individuals. In the literature buffering effects have

also been found to occur among only certain individuals, such as those who are female (Husani, Neff, Newbrough & Moore, 1982), single (Eaton, 1978), extraverted (Duckitt, 1984) and those of the lower class (Brown, Bhrolchain & Harris, 1975).

In the final hypothesis, it was found that the distribution of inpatient referrals differed significantly from chance. Referral was associated with high EDSCQ total stress levels in 67.6% of the sample, while high BSI symptomatology was associated with only 32.35% of the sample. This suggests that the EDSCQ total stress score played a stronger role in explaining inpatient referral than symptomatology. Furthermore, a strong argument for the usefulness and predictive power in the referral process of the EDSCQ is provided. It may also bring the validity of the BSI into question, but since this instrument's validity for total symptomatology has been well established (Derogatis, 1975), it seems more likely that at least for this population of inpatients, environmental cost played a more significant role in referral and symptomatology.

CHAPTER SIX

CONCLUSION AND FUTURE IMPLICATIONS

The results of this thesis provide strong confirmation that the EDSCQ is a useful and reliable instrument in predicting self report symptomatology scores among an inpatient population. At all three levels of analyses (item level, subscale level and total stress score level), the EDSCQ was found to significantly predict symptomatology in the expected direction. This suggests that the environmental risk factors making up the EDSCQ are indeed a measure of stress and behavioral cost.

When the relationship between social support and symptomatology was specifically studied, results are largely dependent upon marital status. Social support was highly predictive of symptomatology for the single group, but not for the married group. Furthermore, it was found that the buffering effect of social support only existed for the single group. This suggests that marriage is a benefit as the presence of a spouse is usually a source of social support.

The finding that social support is significantly related to symptomatology is not surprising when it is considered that social bonds have played an important part in primate evolution. Hamburg (1968) has described the social bond as a powerful adaptive mechanism, facilitating such biologically important activities as the protection and upbringing of offspring. Further confirmation that man's evolution has been dependent on social bonds comes from

Malinowski's (1929) observation that the formation of families is a universal process. Man's need for social bonds has led to Bowlby's (1958, 1969, 1972) theory that adults of all cultures have affectional ties and experience distress when they are broken. Similarly, in Maslow's (1954) hierarchy of human needs is the need for affectional ties with at least one other person. It is perhaps the case that individuals lacking social support seek out support from therapists. Jerome Frank (1973) has noted that a common ingredient of successful psychotherapy, independent of culture, is the client's belief that the therapist genuinely cares. Frank believes that the formation of a personal relationship between therapist and client is crucial if the therapist is going to bring about change in a client.

Knowledge that social support is significantly related to symptomatology has important implications for mental health policy and services. Greenblatt, Bercerra & Serafetinides (1982) suggest that every individualized treatment plan for a given patient should include assessment of the patient's social network. The assessment should determine whether the human network is likely to support or retard the patient's social and emotional growth. When network deficiencies are found, professionals should attempt to repair the defects by working with the family and the larger community. Patients should be educated through social skills training programs to mobilize their own support systems in times of stress, and mental health workers should educate the public about how to use natural

and community support systems to solve personal and social problems. Improving social support systems is particularly crucial when it is realized that social support is much more amenable to change than other factors such as environmental stress and personality.

Despite the important role social support obviously plays in human functioning, it is only recently that research in this area has been undertaken (Henderson, 1980). Perhaps one reason why research has been slow to develop in this area is because of methodological difficulties. The greatest difficulty that presently exists is that of defining and measuring social support. There is no universal definition of social support and consequently no agreed upon method of measuring social support. In this thesis, social support was measured in quantitative terms only. In the future it may be worthwhile to add qualitative measures as well, given the fact that studies using qualitative measures tend to find a more significant relationship between social support and symptomatology (Cohen, McGowan, Fooskas & Rose, 1984; Husani, Neff, Newbrough & Moore, 1982) and are also more likely to find evidence for a buffering effect of social support (Cohen, McGowan, Fooskas & Rose, 1984). One qualitative measure that may be particularly pertinent to add is that of satisfaction with spousal support. Findings of this thesis suggest that marriage provides one with social support, but it would be interesting to find out if those who are married but dissatisfied with their relationship with spouse experience benefits or costs.

Another recommendation is that this study should be replicated with another inpatient sample, as well as other population samples in order to substantiate these present findings further, particularly since although many of the results are significant statistically with a large sample such as this, it is important to confirm that the findings are reliable and the relationships strong. It is also recommended that in the future a longitudinal design should be employed. The cross-sectional design of this study makes it impossible to imply causality. Thus, unfortunately it is not known whether lack of social support or loss of employment causes psychological symptomatology or whether the symptomatology causes loss of social support or unemployment, or whether in fact a third variable such as personality may "cause" both conditions. Another reason for caution when examining these results is the fact that self report measures were used. Disclosure may have been influenced by mood states and the inpatients may have reported more negatively. Longitudinal designs which measure these and other variables before and after symptom onset may be beneficial in dealing with this problem.

In this thesis, evidence for an economic psychology, cost-benefit model has been provided. Environmental stress as measured by the EDSCQ has been found to be related to the behavioral cost of self report symptomatology. Furthermore, evidence is provided that the EDSCQ is a useful and valid instrument in the assessment and referral process of inpatient symptomatology.

REFERENCES

- Adam, K., Bouckrams, A., & Streiner, D. (1982). Parental loss and stability in attempted suicide. Archives of General Psychiatry, 39, 1081-085.
- Adebimpe, V., Chu, C., Klein, H., & Lange, M. (1982). Racial and geographic differences in the psychopathology of schizophrenia. American Journal of Psychiatry, 139, 888-891.
- Aneshensel, C., Frerichs, R., & Clark, V. (1981). Family roles and sex differences in depression. Journal of Health and Social Behavior, 22, 379-393.
- Andrew, J. (1976). Delinquency, sex and family variables. Social Biology, 23, 168-171.
- Andrews, G., Tennant, C., Hewson, D., & Vaillant, G. (1978). Life event stress, social support, coping style and risk of psychological impairment. The Journal of Nervous and Mental Disease, 166, 307-316.
- Banks, M., & Jackson, P. (1982). Unemployment and risk of minor psychiatric disorder in young people: Cross-sectional and longitudinal evidence. Psychological Medicine, 12, 788-789.
- Barnes, G., & Prosen, H. (1984). Depression in Canadian general practice attenders. Canadian Journal of Psychiatry, 29, 2-10.
- Bebbington, P., Hurry, T., & Tennant, C. (1981). Psychiatric disorders in selected immigrant groups in Camberwall. Social Psychiatry, 16, 43-51.

- Bell, R., LeRoy, J., & Stephenson, J. (1982). Evaluating the mediating effects of social support upon life events and depressive symptoms. Journal of Community Psychology, 10, 325-340.
- Berkman, L., & Syme, L. (1979). Social networks, host resistance and mortality: A nine year follow-up study of Alameda county residents. American Journal of Epidemiology, 109, 186-204.
- Billings, A., Cronkite, R., & Moos, R. (1983).
Social-environmental
factors in unipolar depression: Comparisons of depressed patients
and non depressed controls. Journal of Abnormal Psychology, 92, 119-113.
- Billings, A., & Moos, R. (1982). Social support and functioning among community and clinical groups: A panel model. Journal of Behavioral Medicine, 5, 295-311.
- Birley, J., & Brown, G.W. (1970). Crisis and life changes preceding the onset of relapse of acute schizophrenia: Clinical aspects. British Journal of Psychiatry, 116, 327.
- Birtchnell, J. (1970a). Early parent death and mental illness. British Journal of Psychiatry, 116, 281-288.
- Birtchnell, J. (1970b). Depression in relation to early and recent parent death. British Journal of Psychiatry, 116, 299-306.
- Bland, R. (1982). Predicting the outcome of schizophrenia. Canadian Journal of Psychiatry, 27, 52-62.
- Bland, R., & Orn, H. (1981). Schizophrenia: Sociocultural Factors. Canadian Journal of Psychiatry, 26, 52-62.

- Bowlby, J. (1958). The nature of the child's tie to his mother. International Journal of Psychoanalysis, 39, 350-373.
- Bowlby, J. (1969, 1972). Attachment and Loss, (2 volumes). London: Hogarth.
- Brenner, M.H. (1973). Mental Illness and the Economy. Cambridge, MA: Harvard University Press.
- Brenner, M.H. (1977). Personal stability and economic security. Social Policy, 8, 2-4.
- Brown, G., Bhrolchain, M., & Harris, T. (1975). Social class and psychiatric disturbance among women in an urban population. Sociology, 9, 225-254.
- Brown, G., & Birley, J. (1969). Social Precipitants of Severe Psychiatric disorders In: psychiatric epidemiology. E.H. Hare & J.K. Wing, London: Oxford Press.
- Brugha, C., Nalsh, N., Delaney, W., O'Hanlon, S., Dondero, E., Daly, L., Hickey, N., & Bourke, G. (1982). Social networks, attachments and support in minor affective disorders: A replication. British Journal of Psychiatry, 141, 249-255.
- Brugha, T. (1984). Parental losses and deficiencies in social networks. Social Psychiatry, 19, 69-74.
- Campbell, E., Cope, S., & Teasdale, J. (1983). Social factors and affective disorders: An investigation of Brown and Harris' model. British Journal of Psychiatry, 143, 568-583.
- Caplan, G. (1974). Support Systems And Community Mental Health. New York: Behavioral Publications.

- Catalano, R., & Dooley, D. (1977). Economic predictors of depressed mood and stressful life events in a metropolitan community. Journal of Health and Social Behavior, 18, 292-307.
- Catalano, R., & Dooley, D. (1979). The economy as stressor: A sectorial analysis. Review of Social Economy, 37, 175-187.
- Catalano, R., & Dooley, D. (1980). Economic change in primary prevention. In R.H. Price, R.F. Ketterer, B.C. Bade, & J. Monohan (Eds.). Prevention In Mental Health. Beverly Hills: Sage.
- Catalano, R., & Dooley, D. (1981). The behavioral cost of economic instability. Policy Studies, 10, 338-349.
- Catalano, R., Dooley, D., & Jackson, R. (1981). Economic predictors of admissions to mental health facilities in a non metropolitan community. Journal of Health and Social Behavior, 22, 337-356.
- Cobb, S. (1976). Social support as a moderator of life stress. Psychosomatic Medicine, 38, 300-314.
- Cochrane, R., & Stopes-Roe, M. (1980). Factors affecting the distribution of psychological symptoms in urban areas of England. Acta Psychiatrica Scandinavica, 61, 445-460.
- Cohen, L., McGowan, J., Fooskas, S., & Rose, S. (1984). Positive life events and social support and the relationship between life stress and psychological disorder. American Journal of Community Psychology, 12, 567-587.
- Cooke, D., & Hole, D. (1983). The aetiological importance of stressful life events. British Journal of Psychiatry, 143, 397-400.

- Costello, C. (1982). Social factors associated with depression: A retrospective community study. Psychological Medicine, 112, 329-339.
- Craig, T., & VanNatta, P. (1979). Influence of demographic characteristics on two measures of depressive symptoms. Archives of General Psychiatry, 36, 149-254.
- Cutrona, C. (1984). Social support and stress in the transition to parenthood. Journal of Abnormal Psychology, 93, 378-390.
- D'arcy, C. (1982). Prevalence and correlates of nonpsychotic psychiatric symptoms in the general population. Canadian Journal of Psychiatry, 27, 316-324.
- Dean, A., & Ensel, W. (1982). Modelling social support, life events, competence and depression in the context of age and sex. Journal of Community Psychology, 10, 392-408.
- Dean, A., & Lin, N. (1977). The stress buffering role of social support. The Journal of Nervous and Mental Disease, 165(6), 403-417.
- Derogatis, L.R. (1975). Social class, psychological disorder and the nature of the psychopathologic indicator. Journal of Consulting and Clinical Psychology, 43, 183-191.
- Dohrenwend, B.P., & Dohrenwend, B.S. (1965). The problem of validity in field studies of psychological disorder. Journal of Abnormal Psychology, 70, 52-69.
- Dohrenwend, B.P., & Dohrenwend, B.S. (1969). Social Status And Psychological Disorder: A Causal Inquiry. New York: Wiley-Interscience.

- Dohrenwend, B.S., & Dohrenwend, B.P. (1974). Stressful life events: Their nature and effects. New York: John Wiley & Sons.
- Dorpat, T., Jackson, J., & Ripley, H. (1965). Broken homes and attempted and completed suicide. Archives of General Psychiatry, 12, 213-216.
- Duckitt, J. (1984). Social support, personality and the prediction of psychological distress: An interactionist approach. Journal of Clinical Psychology, 40, 1199-1204.
- Eaton, W. (1974). Residence, social class and schizophrenia. Journal of Health and Social Behavior, 15, 289-299.
- Eaton, W. (1978). Life events, social support and psychiatric symptoms: A re-analysis of the New Haven data. Journal of Health and Social Behavior, 19, 230-234.
- Eisemann, M. (1984). Contact difficulties and experience of loneliness in depressed patients and non psychotic controls. Aca Psychiatrica Scandinavica, 70, 160-165.
- Famuyiwa, O., & Olatokunbo, M. (1984). Social networks of Nigerian psychiatric patients. The International Journal of Social Psychiatry, 30, 231-238.
- Frank, J.D. (1973). Persuasion And Healing. Baltimore, MD: The John Hopkins University Press.
- Froland, C., Brodsky, G., Olson, M., & Stewart, L. (1979). Social support and social adjustment: Implications for mental health professionals. Community Mental Health Journal, 15, 82-93.

- Ganellen, R., & Blaney, P. (1984). Hardiness and social support as moderators of the effects of life stress. Journal of Personality and Social Psychology, 47, 156-163.
- Goering, P., Wasylenki, D., Lancee, W., & Freeman, S. (1983). Social support and post hospital outcome for depressed women. Canadian Journal of Psychiatry, 28, 612-617.
- Gore, S. (1978). The effect of social support in moderating the health consequences of unemployment. Journal of Health And Social Behavior, 19, 157-165.
- Greenblatt, M., Becerra, R., & Serafetinides, E. (1982). Social networks and mental health: An overview. The American Journal of Psychiatry, 139, 977-984.
- Hamburg, D.A. (1968). Emotions in the perspective of human evolution. In Washburn, S.L. and Jay, P.C. (Eds.). Perspectives on Human Evolution. New York: Holt, Rinehart and Winston.
- Harman, H.H. (1967). Modern Factor Analysis (Rev. Ed.). Chicago: University Press.
- Henderson, S. (1977). The social network, support and neurosis. British Journal of Psychiatry, 131, 185-191.
- Henderson, S. (1980). A development in social psychiatry. The systematic study of social bonds. The Journal of Nervous and Mental Disease, 168, 63-69.
- Henderson, S., Byrne, P., Duncan-Jones, P., Adcock, S., Scott, R., & Steele, G.P. (1978). Social bonds in the epidemiology of neurosis: A preliminary communication. British Journal of Psychiatry, 132, 463-466.

- Henderson, S., Duncan-Jones, P., McAuley, H., & Ritchie, K. (1978). The patient's primary group. British Journal of Psychiatry, 132, 74-86.
- Henderson, S., Duncan-Jones, P., Bryne, P., Adcock, S., & Scott, R. (1979). Neurosis and social bonds in an urban population. Australian and New Zealand Journal of Psychiatry, 13, 121-125.
- Henderson, S., & Moran, P.A.P. (1983). Social relations during the onset and remission of neurotic symptoms: A prospective community study. British Journal of Psychiatry, 143, 467-472.
- Hirsch, B.J. (1980). National support systems and coping with major life changes. American Journal of Community Psychology, 8, 159-172.
- Hobfoll, S., & Walfisch, S. (1984). Coping with a threat to life: A longitudinal study of self concept, social support and psychological distress. American Journal of Community Psychology, 12, 87-99.
- Holahan, C., & Moos, R. (1981). Social support and psychological distress: A longitudinal analysis. Journal of Abnormal Psychology, 90, 365-370.
- Hollingshead, A., & Redlich, F. (1953). Social stratification and psychiatric disorders. American Social Review, 18, 163-169.
- Hollingshead, A., & Redlich, F. (1953). Schizophrenia and social structure. American Journal of Psychiatry, 110, 695-701.
- Holmes, T.H., & Masuda, M. (1974). Life change and illness susceptibility. In B.S. Dohrenwend & B.P. Dohrenwend (Eds.). Stressful Life Events: Their Nature and Effects. New York: John Wiley & Sons.

- Holmes, T.H., & Rahe, R.H. (1967). The social readjustment rating scale. Journal of Psychosomatic Research, 11, 213.
- Husani, B., Neff, J., Newbrough, B., & Moore, M. (1982). The stress-buffering role of social support and personal competence among the rural married. Journal of Community Psychology, 10, 409-426.
- Kaplan, H., Robbins, C., & Martin, S. (1983). Antecedents of psychological distress in young adults: Self rejection, deprivation of social support and life events. Journal of Health And Social Behavior, 24, 130-244.
- Krause, N. (1984). Employment outside home and women's psychological well being. Social Psychiatry, 19(1), 41-48.
- LaRocco, J., & Jones, A. (1978). Co-worker and leader support as moderators of stress-strain relationships in work situations. Journal of Applied Psychology, 63, 629-634.
- Leaf, P., Weissman, M., Myers, J., Tischler, G., & Holzer, C. (1984). Social factors related to psychiatric disorder. The Yale epidemiologic catchment area study. Social Psychiatry, 19, 53-61.
- Leighton, D.C., Harding, J.S., Macklin, D.B., Macmillan, A.M., & Leighton, A.H. (1963). The Character of Danger: Psychiatric Symptoms In Selected Communities. New York: Basic Books.
- Liem, R., & Liem, J. (1978). Social class and mental illness reconsidered: The role of economic stress and social support. Journal of Health And Social Behavior, 19, 139-156.
- Lin, N., & Dean, A. (1984). Social support and depression: A panel study. Social Psychiatry, 19, 83-91.

- Lin, N., & Ensel, W. (1984). Depression-mobility and its social etiology: The role of life events and social support. Journal of Health And Social Behavior, 25(2), 176-188.
- Lin, N., Simeone, R., Ensel, W., and Kuo, W. (1979). Social support, stressful life events and illness: A model and an empirical test. Journal of Health And Social Behavior, 20, 108-119.
- Lindbald-Goldberg, M., & Dukes, J.L. (1985). Social support in black low income single parent families. Normative and dysfunctional patterns. American Journal of Orthopsychiatry, 55, 42-60.
- Lowenthal-Fiske, M. (1964). Social isolation and mental illness in old age. American Sociological Review, 29, 54-70.
- Lowenthal-Fiske, M., & Haven, C. (1968). Interaction and adaptation: Intimacy as a critical variable. American Sociological Review, 33, 20-30.
- MacFadyen, H.W. (1984). The Economic, Demographic and Social Characteristics Questionnaire: A preliminary measure of the degree of environmental stress on children. Alberta School Psychologist, 42, 17-36.
- MacFadyen, H.W., & MacFadyen, A.J. (1984). The Economic, Demographic and Social Characteristics Questionnaire: Adult Form. Unpublished manuscript, University of Calgary.
- MacFadyen, A.J., & MacFadyen, H.W. (1986a). (Eds.), Economic psychology : Intersections in theory and practice. Amsterdam, North Holland Press.

- MacFadyen, H.W., & MacFadyen, A.J. (1986b). The Economic, Demographic and Social Characteristics Questionnaire as a measure of environmental risk on children and families. In White, J. & Freeman, D.S. (Eds.), Stress and the family, In press.
- Malinowski, B. (1929). The Sexual Life of Savages In North Western Melanesia. New York: Harcourt, Brace and Co.
- Maslow, A.H. (1954). Motivation and Personality. New York: Harper.
- McIvor, G., Riklan, M., & Reznikoff, M. (1984). Depression in multiple sclerosis as a function of length and severity of illness, age, remissions and perceived social support. Journal of Clinical Psychology, 40(4), 1028-7033.
- Medalie, J., & Goldbourt, V. (1976). Angina Pectoris among 10,000 men. The American Journal of Medicine, 60, 910-921.
- Meill, R., Johnson, D., & St. Peter, L. (1976). Marital role, education and mental disorders among women: Test of an interaction hypothesis. Journal of Health And Social Behavior, 17, 295-301.
- Miller, I., & Davidson, S. (1976). Life events, symptoms and social support. Journal of Psychosomatic Research, 20, 515-522.
- Miller, R., & Lefcourt, H. (1983). Social intimacy: An important moderator of stressful life events. American Journal of Community Psychology, 11, 127-139.
- Monroe, S. (1983). Social support and disorder: Toward an untangling of cause and effect. American Journal of Community Psychology, 11, 81-96.

- Morris, J., Kovacs, M., Beck, A., & Wolfe, A. (1974). Notes toward an epidemiology of suicide. Comprehensive Psychiatry, 15, 537-547.
- Moss, P., & Plewis, I. (1980). Mental distress in mothers of pre-school children in inner London. Psychological Medicine, 7, 641-652.
- Mueller, D. (1980). Social networks: A promising direction for research on the relationship of the social environment to psychiatric disorder. Social Science And Medicine, 14 A, 147-161.
- Munro, A. (1966). Parental deprivation in depressive patients. British Journal of Psychiatry, 112, 443-457.
- Munro, A. (1969). Parent-Child separation: Is it really a cause of psychiatric illness in adult life? Archives of General Psychiatry, 20, 598-603.
- Munro, A., & Griffiths, A.B. (1969). Some psychiatric non-sequelae of childhood bereavement. British Journal of Psychology, 115, 305-311.
- Murphy, E. (1983). The prognosis of depression in old age. British Journal of Psychiatry, 142, 111-119.
- Myers, J.K., Lindenthal, J.J., & Pepper, M.P. (1971). Life events and psychiatric impairment. Journal of Nervous and Mental Disease, 152, 149.
- Norbeck, J., & Peterson-Tilden, V. (1983). Life stress, social support and emotional disequilibrium in complications of pregnancy: A prospective, multivariate study. Journal of Health And Social Behavior, 24, 30-46.

- Nuckolls, K., Cassel, J., & Kaplan, B. (1972). Psychological assets, life crisis and the prognosis of pregnancy. American Journal of Epidemiology, 95, 431-441.
- O'Hara, M., Rehm, L., & Campbell, S. (1983). Postpartum depression: A role of social network and life stress variables. Journal of Nervous and Mental Disorder, 171, 336-341.
- Ouellette-Kobasa, S., & Puccetti, M. (1983). Personality and social resources in stress resistance. Journal of Personality and Social Psychology, 45, 839-850.
- Pattison, M., DeFrancisco, C., Wood, P., Frazier, H., & Crowder, J. (1975). A psychosocial kinship model for family therapy. American Journal of Psychiatry, 132, 1246-1251.
- Paykel, E., Myers, J., Lindenthal, J., & Tanner, J. (1974). Suicidal feelings in the general population: A prevalence study. British Journal of Psychiatry, 124, 460-469.
- Pearlin, L., & Johnson, J. (1977). Marital status: Strains and depression. American Sociological Review, 42, 704-715.
- Pennebaker, J., & O'Heeron, R. (1984). Confiding in others and illness rate among spouses of suicide and accidental death victims. Journal of Abnormal Psychology, 93, 473-476.
- Rabkin, J.G., & Struening, E. (1976). Life events, stress and illness. Science, 194, 1013-1020.
- Rahe, R.H., McKean, J.D. Jr., & Arthur, R.J. (1967). A longitudinal study of life change and illness patterns. Journal of Psychosomatic Research, 10, 355-366.

- Reed, D., McGee, D., Yano, K., & Feinleib, M. (1983). Social networks and coronary heart disease among Japanese men in Hawaii. American Journal of Epidemiology, 117, 384-396.
- Roberts, C., Roberts, R., & Stevenson, J. (1982). Women, work, social support and psychiatric morbidity. Social Psychiatry, 17, 167-173.
- Rook, K. (1984). The negative side of social interaction: Impact on psychological well being. Journal of Personality and Social Psychology, 46, 1097-1108.
- Roy, A. (1978). Vulnerability factors and depression in women. British Journal of Psychiatry, 133, 106-110.
- Roy, A. (1981). Risk factors and depression in Canadian women. Journal of Affective Disorders, 3(1), 65-70.
- Roy, A. (1981). Risk factors for depression: Social class differences. Canadian Journal of Behavioral Sciences, 13, 374-367.
- Roy, A., & Kennedy, S. (1984). Risk factors for depression in Canadians. Canadian Journal of Psychiatry, 29, 11-13.
- Sandler, I. (1980). Social support, resources, stress and maladjustments of poor children. American Journal of Community Psychology, 8, 41-52.
- Sandler, I., & Barrera, M. (1984). Toward a multimethod approach to assessing the effects of social support. American Journal of Community Psychology, 12, 37-51.

- Sarason, I., Levine, H., Basham, R., & Sarason, B. (1983).
Assessing social support: The social support questionnaire.
Journal of Personality and Social Psychology, 44, 127-139.
- Scott, A., Kelleher, M.J., Smith, A., & Murray, R.M. (1982).
Regional differences in obsessionality and obsessional neurosis.
Psychological Medicine, 12, 131-134.
- Snowdown, J. (1979). Family size and birth order in obsessional
neurosis. Acta Psychiatrica Scandinavica, 60, 121-128.
- Sokolovsky, J., Cohen, C., Berger, D., & Geiger, J. (1978).
Personal networks of ex-mental patients in a Manhattan SRO hotel.
Human Organization, 37, 5-15.
- Solomon, Z., & Bromet, E. (1982). The role of social factors in
affective disorder: An assessment of the vulnerability model of
Brown and his colleagues. Psychological Medicine, 12, 123-131.
- Stokes, J. (1983). Predicting satisfaction with social support
from social network structure. American Journal of Community
Psychology, 11, 141-151.
- Surtees, P.G. (1980). Social support, residual adversity and
depressive outcome. Social Psychiatry, 15, 71-80.
- Surtees, P.G. (1984). Kirth, kin and psychiatric health: A
Scottish survey. Social Psychiatry, 19, 63-67.
- Syrotuik, J., & D'arcy, C. (1984). Social support and mental
health: Direct, protective and compensatory effects. Social
Science And Medicine, 18, 229-236.
- Tcheng-Laroche, F., & Prince, R.H. (1979). Middle income, divorced
female heads of families. Canadian Journal of Psychiatry, 24,
135-142.

- Tennant, C., & Bebbington, P. (1978). The social causation of depression: A critique of the work of Brown and his colleagues. Psychological Medicine, 8, 565-575.
- Thoits, P. (1982). Conceptual, methodological and theoretical problems in studying social support as a buffer against life stress. Journal of Health And Social Behavior, 23, 145-159.
- Tolsdorf, C. (1976). Social networks, support and coping: An exploratory process. Dissertation Abstracts International, 36(9-B) 7413.
- Toolan, J.M. (1962). Suicide and suicidal attempts in children and adolescents. American Journal of Psychiatry, 118, 719-724.
- Turner, S. (1981). Social support as a contingency in psychological well being. Journal of Health And Social Behavior, 22, 357-367.
- Turner, J., & Nah, S. (1983). Class and psychological vulnerability among women: The significance of social support and personal control. Journal of Health And Social Behavior, 24, 2-15.
- VanFossen, B. (1981). Sex differences in the mental health effects of spouse support and equity. Journal of Health And Social Behavior, 22, 130-143.
- Walton, H.J. (1958). Suicidal behavior in depressive illness. Journal of Mental Science, 104, 884-891.
- Warheit, G. (1979). Life events, coping, stress and depressive symptomatology. American Journal of Psychiatry, 136, 502-507.

- Warheit, G., Holzer, C., Bell, R., & Arey, S. (1976). Sex, marital status and mental health: A reappraisal. Social Forces, 55, 459-570.
- Warheit, G., Shimizu, D., Vega, W., & Meinhardt, K. (1982). Interpersonal coping networks and mental health problems among four race ethnic groups. Journal of Community Psychology, 10, 312-324.
- Weissman, M.M., & Klerman, G. (1977). Sex differences and the epidemiology of depression. Archives of General Psychiatry, 34, 98-111.
- Weissman, M., Paykel, E., Siegel, R., & Klerman, G. (1971). The social role performance of depressed women: Comparisons with a normal group. American Journal of Orthopsychiatry, 41, 390-405.
- Wilcox, B. (1981). Social support, life stress and psychological adjustment: A test of the buffering hypothesis. American Journal of Community Psychology, 9, 371-386.
- Williams, A., Ware, J., & Donald, C. (1981). A model of mental health, life events and social supports applicable to general populations. Journal of Health And Social Behavior, 22, 324-336.
- Winefield, J. (1979). Social support and the social environment of depressed and normal women. Australian and New Zealand Journal of Psychiatry, 13, 335-339.

APPENDIX I
ECONOMIC, SOCIAL SUPPORT AND DEMOGRAPHIC
CHARACTERISTICS OF THE SAMPLE

	<u>Father's Marital Status</u>	<u>Mother's Marital Status</u>
Married	45.8%	48.8%
Widowed (over 2 years)	4.1%	9.4%
Divorced (over 2 years)	8.2%	9.4%
Separated (over 2 years)	5.8%	4.1%
Single	1.1%	1.7%
Widowed (with last 2 years)	2.3%	.5%
Separated (within last 2 years)	2.3%	2.9%
Common-Law living	2.9% 29.4%	2.3% Not 20.5%

	<u>Father's Education</u>	<u>Mother's Education</u>
University/College	13.5%	17.0%
Technical/Business School	11.1%	12.3%
Apprenticed Trade	15.2%	6.4%
Secondary School	23.3%	23.5%
Elementary School	30.0%	23.5%
Less than Grade 6	6.4%	.5%

Type of Parents

2 parents/natural	68.2%
2 parents/stepfather	1.1%
2 parents/stepmother	8.2%
2 parents/common-law father	.5%
2 parents/common-law mother	4.7%
single parent/mother	.5%
single parent/father	.5%
2 adoptive parents	5.8%
single adoptive parent (mother)	.5%
single adoptive parent (father)	4.7%
2 foster parents	.5%
one foster parent	2.3%
no parents	.5%

Number of Dependent Children

None	68.2%
One	12.9%
Two	7.6%
Three	6.4%
Four or more	4.7%

Number of Siblings

Four or more	42.9%
Three	16.4%
Two	12.9%
One	20.0%
None	7.6%

Number of Siblings Living Near

Four or more	15.2%
Three	8.2%
Two	15.8%
One	28.8%
None	31.7%

Number of Close Relatives

Four or more	54.1%
Three	12.9%
Two	12.3%
One	14.7%
None	5.8%

Number of Close Relatives Living Near

Four or more	28.2%
Three	7.6%
Two	12.3%
One	26.4%
None	25.2%

Number of Social Contacts with Relatives per week

Four or more	17.0%
Three	5.8%
Two	12.3%
One	22.3%
None	42.3%

Number of Close Friends

Four or more	38.8%
Three	15.2%
Two	18.8%
One	14.1%
None	12.9%

Number of Close Friends Living Near

Four or more	28.8%
Three	12.3%
Two	21.7%
One	18.2%
None	18.2%

Number of Social Contacts with Close Friends per week

Four or more	23.5%
Three	15.8%
Two	18.8%
One	18.8%
None	25.8%

Number of Social Visits Made to Subject per week

Seven or more	5.2%
Six	2.9%
Five	5.2%
Four	5.2%
Three	8.8%
Two	16.4%
One	18.8%
None	37.0%

Number of Social Visits Made by Subject per week

Seven or more	7.0%
Six	4.1%
Five	8.8%
Four	1.0%
Three	13.5%
Two	1.1%
One	21.1%
None	34.1%

Number of Clubs/Organization Memberships

Four or more	2.9%
Three	6.4%
Two	12.3%
One	21.1%
None	57.0%

Number of Offices Held in Clubs/Organizations

Four or more	.5%
Three	1.1%
Two	2.3%
One	6.4%
None	89.4%

If Urgent Help Was Needed, Who Would be Contacted?

Relative living nearby	47.0%
Relative within the province	4.1%
Relative outside the province	8.8%
Close Friend	17.6%
Friend	9.4%
Neighbor	2.9%
Acquaintance	1.7%
Other person or agency	8.2%

Economic FactorsOccupational Level

Professional	17.0%
Manager	7.6%
Clerical/Sales	21.1%
Craftsman	9.4%
Operative or trade worker	10.0%

Service worker	14.7%
Labourer/unskilled	20.0%
<u>Employment Status</u>	

Unemployed by choice	28.2%
Full-time employment	20.0%
Part-time employment by choice	4.1%
Retired	5.8%
Part-time but desires full-time work	6.4%
Unemployed/wants employment	35.2%

Annual Income

50,000 or more	4.1%
40,000 - 49,999	3.8%
30,000 - 39,999	5.8%
20,000 - 29,999	12.3%
10,000 - 19,999	14.7%
under 9,999	59.4%

Primary Source of Income

Investment	2.3%
Employment Income	37.6%
Pension	10.0%
Workers' Compensation	.5%
Alimony	.5%
Unemployment	11.7%
Welfare	37.0%

Economic Mobility

Promotion	15.2%
Same job level	31.1%
Demoted	2.3%
Quit job	27.0%
Never employed	4.1%
Fired/laid off	20.0%

Demographic Factors

Area/Region

Rural	8.8%
Small town	4.7%
Urban	86.4%

Type of Accommodation

Single family dwelling	37.6%
Duplex	6.4%
Apartment	42.9%
Mobile home	3.5%
Room & Board	1.7%
Single room	2.3%
No fixed address	5.2%

Description of Community Facilities

Excellent	31.7%
Good	32.3%
Adequate	23.5%
Poor	8.8%
None	3.5%

Use of Community Facilities

High	8.8%
Moderate	25.2%
Little	39.4%
None	26.4%

Length of Time at Present Address

Five years or more	25.8%
Three to four years	10.5%
One to two years	19.4%
Six to eleven months	11.7%
Five months or less	32.3%

Length of Time in City/Region

Five years or more	72.9%
Three to four years	7.6%
One to two years	8.8%
Six to eleven months	4.1%
Five months or less	6.4%

Length of Time in Province

Five years or more	81.1%
Three to four years	8.2%
One to two years	5.2%
Six to eleven months	1.7%
Five months or less	3.5%

Number of Household Moves in Last Five Years

None	2.3%
One	12.3%
Two	14.7%
Three	15.8%
Four	6.4%
Five or more	27.0%

Rate of Satisfaction with Neighborhood

Very happy	18.2%
Happy	17.6%
Indifferent	35.8%
Unhappy	19.4%
Very unhappy	8.8%

Treatment and Diagnostic Characteristics of the Inpatient Sample

(Information obtained from Holy Cross staff)

Admission Status

First admission	72.3%
Second admission	24.1%
Third or more admission	1.7%
Unknown	1.7%

Incentive to seek Treatment

High	6.4%
Moderate	55.8% ²
Low	30.0%
None	2.3%
Unknown	5.2%

Behavioral Classification

Mild	8.2%
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Moderate	62.9%
Severe	24.1%
Unknown	4.7%

Assignment of Client

None	.5%
Outpatient	.0%
Day care	.5%
Short-term	90.5%
Long-term	2.9%
Unknown	5.2%

Type of Treatment

None	.5%
Psychological	25.2%
Physical	.0%
Both physical and psychological	62.9%
Unknown	11.1%

Duration of Disorder

One month or less	6.4%
2-5 months	15.8%
6-11 months	17.0%
12-17 months	17.6%
18-23 months	4.7%
2-3 years	8.8%
4 years or more	24.1%
Unknown	5.2%

Severity of Disorder

Mild	7.6%
Moderate	52.3%
Severe	23.5%
Critical	1.1%
Unknown	15.2%

DSM III Classification

Organic	2.3%
Adjustment disorder	10.5%
Disorder of Impulse	3.5%
Factitious disorder	.5%
Anxiety disorder	5.2%
Somatoform disorder	.0%
Dissociative disorder	.5%
Psychosexual disorder	.5%
Substance use disorder	10.0%
Affective disorder	42.3%
Schizophrenic disorder	7.6%
Paranoid disorder	2.3%
Personality disorder	4.7%
Attention deficit	.5%
Conduct disorder	.5%
Eating disorder	1.7%
Other	1.1%
Unknown	5.8%