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The effect of social support and stress on the health of community-living elderly.

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THE EFFECT OF SOCIAL SUPPORT AND STRESS ON THE HEALTH OF COMMUNITY-LIVING ELDERLY

A Dissertation Presented

By

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ABSTRACT

THE EFFECT OF SOCIAL SUPPORT AND STRESS ON THE HEALTH OF COMMUNITY-LIVING ELDERLY

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A number of factors have been posited as influences upon the health of individuals. One factor, social support, has been theorized to buffer the adverse effects of stress upon health. The relationship between social support and health was examined utilizing two samples of elderly. The first sample comprised of seventy (70) community active individuals who attended senior citizen centers on a regular basis. The second sample comprised of forty-seven (47) homebound individuals who left their homes no more than once weekly. Subjects completed questionnaires pertaining to physical and psychological health, stress, number and frequency of social contacts, perceived social support, and demographic information.

Results indicated that a significant negative relationship existed between illness and social support. However, perceived social support,

rather than the actual frequency of social contacts, accounted for much of this relationship. Perceived support from friends and neighbors was significantly associated with good health among community active individuals; perceived general support from a variety of sources was significantly associated with good health among homebound individuals. In general, psychological health measures were more often significantly correlated with social support than were physical health measures. Future research on the relationship between stress and health must consider the contribution of perceived social support and further examine the mechanisms underlying the relationships among these factors.

CHAPTER 1
REVIEW OF LITERATURE AND RESEARCH

Introduction

A number of factors have been posited as influences upon the health of individuals. One such factor, social support, has received considerable attention in the literature as researchers have theorized that social support acts to buffer the adverse effects of stress upon health. In fact, social support may influence individual health through a number of possible mechanisms, including providing for the instrumental needs of individuals or enhancing compliance with medical regimens. While the adverse consequences of limited sources of social support may be experienced by all age groups, perhaps nowhere is its impact more strongly felt than among the elderly. This group typcially experiences a gradual (and sometimes sudden) decline in both social support and health status over time. Therefore, if social support can, indeed, influence health and well-being, it may be that this population has the most to gain from research findings in this area.

While animal laboratory studies examined the effects of social support on the development of disease in the 1940s through 1960s, research on the effects of social support in human populations did not appear until the middle 1960s, with the majority of literature published in the last decade. Investigators have examined the effects of social support on both physical health and psychological well-being across most age groups in numerous settings (e.g. industry, institutions, hospital, elderly

housing). Discussion of the theoretical and conceptual basis for the importance of social support has also recently appeared in the literature. This chapter will provide a review of the research in this area and present some of the conceptual, definitional, and theoretical issues involved. There will be an examination of the potential confounding effects of demographic variables, the importance of subjective measures of support, and the possible adverse effects of social support. Finally, the rationale for conducting the present study and a list of research hypotheses will be presented.

Prior Research on Social Support and Health

Early laboratory work with animals on the effects of social support has tended to reinforce its importance on the health of individuals. For example, Liddel (1950) found that young goats in an isolated experimental chamber developed signs of experimental neurosis when exposed to a monotonous conditioned stimulus. These effects were not observed when the mother goat was in the chamber with her offsping. Conger, Sawrey, & Turrel (1958) reported that following shock avoidance training, isolated rats developed higher rates of peptic ulcers when exposed to unanticipated shock than those shocked in the company of other rats. Henry, Meahan, & Stephens (1967) found increased incidence of hypertension in mice when they were aggregated in small boxes linked to a common feeding area. The effect was lessened if litter-mates replaced the unfamiliar subjects. Other researchers have found that under conditions of laboratory-induced stress, the presence of littermates, other familiar animals, the mother, or

human affection reduced or eliminated the development of mammary tumors in mice (Andervont, 1944), gastric ulcers in rats (Ader, Beels, & Tatum, 1960), hypertension in mice (Henry & Cassell, 1969), and arteriosclerotic heart disease in rabbits (Nerem, Levesque, & Cornhill, 1980).

There also exists a considerable literature relating the positive effects of social support upon health among humans, from pregnancy through life transitions and old age. For example, Nuckolls, Cassel, and Kaplan, (1972) have shown that women with low social support and a large number of life changes or stresses had significantly more complications of pregnancy. Others have found negative correlations between social support and treatment dropout (Backeland & Lundwell, 1975), depression in women facing severe life events (Brown, Bhrolchain, & Harris, 1975), and increased rates of tuberculosis (Holmes, 1956). Lack of social support was also found to be related to increased suicide rates in single and divorced men following the death of their mothers (Burch, 1972) and increased incidence of psychiatric symptoms in Asian Americans (Lin, Ensel, Simeone, & Kuo, 1979). Finally, a strong correlation between both cultural and social mobility and coronary heart disease was demonstrated by Syme, Hyman, & Enterline (1971) while increases in mortality rates were found among those who lacked social and community ties such as marriage, social contact, and church membership (Berkman & Syme, 1979).

Lack of social support has been shown to be associated with poor health in elderly subjects as well. For instance, Lowenthal & Haven (1968) found that the presence of just one confidant separated elderly subjects who could or could not cope in the community. They also identified a

strong correlation between lack of social interaction and depression. Carp (1966) found that those members of an elderly housing project who were rated as unpopular (and, therefore, might be expected to have fewer or less satisfactory social supports) had a significantly greater number of nervous symptoms, such as sleeplessness, headaches, and indigestion. Yet, Lawton & Cohen (1974) found that while there was an increase in involvement with social activities and housing satisfaction among newcomers to an elderly housing project, the group evidenced no difference in morale at a one year follow-up in comparison with control subjects who had not moved to the project. Adequate social support among the elderly has also been associated with psychological well-being, although evidence regarding the contribution of social support to well-being in this population has been inconsistent (Ward, Sherman, & LaGory, 1984). For example, studies have indicated little association between family availability, interactions, and subjective well-being (Larson, 1978). Conversely, interactions with friends appear to be more consistently related to psychological well-being (Wood & Robertson, 1978).

Overall, social support as a factor seems to explain between 8% and 13% of the variance in health measures (Lin et al., 1979; Liang, Dvorkin, Kahana, & Mazian, 1980; Schooler, Pastorello, Comen, & Clark, 1981; Ward et al., 1984). Taken together with demographic variables and stressful life events, Lin et al. (1979) has reported 21% explained variance in the measurement of psychiatric symptoms. Similarly, Ward et al. (1984) have combined physical health, education, occupational status, and social support to explain 26% of the variance in a measure of subjective

well-being. It would seem that the resources provided by various forms of social support have an important effect on an individual's health and psychological well-being. To better understand this relationship, five areas will be addressed: 1) the definition of social support, 2) the components which encompass the concept of social support, 3) the measurement of social support, 4) the measurement of health, and 5) theories of social support and health.

Definitions of Social Support

There has been considerable controversy over the development of a workable definiton of social support. Numerous definitions have been proposed in the literature. One of the first definitions was proposed by Cobb in 1976 as "Information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations" (p. 300). More recently, Thoits (1982) defined social support as, "..the degree to which a person's basic social needs are gratified through interactions with others" (p. 147). Similarly, Wallston, Alagna, DeVellis, & DeVellis (1983) described social support as, "...comfort, assistance, and/or information one receives through formal or informal contacts with individuals or groups" (p. 369). One problem is that these general definitions cover such a wide range of situations and events as to make any definition of little utility or value. In fact, Wallston et al. point out that social suppport may be considered a unitary construct only if these widely varying events have a common psychosocial impact. Yet, to the extent that such events cover numerous and diverse phenomena, social

support should be considered a complex group of constructs which have only some elements in common. It is likely that the latter is the case. It is for this reason that researchers have chosen to break down social support into components which might better lend themselves to measurement and understanding.

Components of Social Support

In general, social support components fall along two primary dimensions, instrumental or expressive support. Instrumental support refers to the provision of material aid, assistance, or information while expressive support refers to more emotional aspects of support, such as serving as a confidant. While most researchers delineate social support into a variety of factors, each typically can be placed along one of these two dimensions. For example, Lopata (1975) identifies three social support factors: emotional (expressive support involving empathy, love, and caring), informational (instrumental support involving nontangible aid or help), and material types of social support (also a form of instrumental support consisting of tangible aid or help). Kahn (1979) has simply re-labeled two of Lopata's factors ("affect" for emotional support and "instrumental" for material support) and included the term "affirmation" to describe information that is relevant to self-evaluation. This factor likely falls into Lopata's category of expressive support. Kahn fails, however, to include a factor synonomous with what Lopata calls information, choosing instead to include this under his instrumental category. House (1981) identifies 4 factors which appear to combine

those of Kahn and Lopata: emotional (involving empathy, love, caring), appraisal (information relevant to self-evaluation), informational (nontangible aid to coping), and instrumental (tangible aid or help). Finally, Wills (1984) proposes six factors to describe the various forms and functions of social support: 1) Esteem support (emotional support or a confidant relationship), 2) Status support (marital status, membership in organizations, belongingness), 3) Informational support (process through which others provide information, advice, and guidance), 4) Instrumental support (tangible or material aid), 5) Social companionship (involvement in social activities), and 6) Motivational support (encouraging the individual to persist in problem solving efforts).

Other researchers have chosen entirely different schemas to define the various types of social support. Antonucci (1983) identifies 3 factors which may have more research utility than those offered by the previous researchers. The first factor is individual perceptions, which involves a subjective assessment of social support and may be related to what House labels as "appraisal". The second factor, type, defines social support in terms of the kinds of support offered, similar to the terms emotional, informational, and instrumental. Finally, Antonucci introduces outcome as a major factor of social support. The conceptualization offered by Antonucci must be considered a significant contribution, for as will discussed in a later section, there is some evidence that perceptions of available social support may be far more important a factor than actual level of social support (e.g. Ward et al., 1984). Additionally, other researchers have demonstrated that in some cases social support may be detrimental (e.g. Baltes, 1984; Garrity, 1973), suggesting that outcome

must always be evaluated and not simply assumed to be positive or productive. Consequently, one should assess perceived availability of social support, quantity and quality of interactions, as well as the outcome.

Measurement of Social Support

While the instrumental/expressive dimensions appear to be an adequate means of categorizing the various factors researchers have developed to define social support, attempts at measuring social support usually fall within either a quantitative or qualitative dimension. Quantitative measures typically refer to the frequency of social contacts or interactions, while qualitative measures refer to the perception or judgement of the accessibility or adequacy of social support. Measurement of social support has varied from fairly basic and limited conceptualizations (e.g. membership in church or other organizations - Berkman & Syme, 1979) to the mapping of complex social networks (Levitt, Antonucci, Clark, Rotton, & Finley, in press). Yet, the tendency has been to measure rather limited constructs in a unitary rather than a multidimensional fashion. In an effort to address these issues, a number of researchers have proposed more extensive approaches to the measurement of social support. Turner (1983), for example, identifies three social support factors that should be considered. The first is labeled social integration approach, involving frequency-based information on an individual's connections with others (e.g. frequency of contacts, group membership). The second factor is termed social network analysis,

involving the description of an individual's network based upon its size, strength of ties, density, homogeneity of membership, and dispersion of membership. Finally, Turner uses a social-psychological or perceptual approach which focuses upon perceived emotional support, need satisfaction, etc.

Antonucci (1983) also has introduced a tri-dimensional measurement approach to social support. Like Turner, she utilizes subjective data about the quality of relationships (perceptual approach) as well as what she terms categorical membership or quantitative measures of social contacts. To gain an understanding of an individual's support network, Antonucci asks respondents to identify who performs certain activities or functions for them and vice-versa (e.g. Who would take care of the individual if he or she were sick? Who would watch the individual's house if he or she were on a trip?). Both Turner and Antonucci have opted for a measurement system which utilizes both quantitative and qualitative, as well as descriptive data in attempting to understand an individual's level of social support.

Thoits (1982) proposes that measures of social support be closely tied to a theoretical and conceptual base. For example, she suggests operationalizing Kaplan, Cassel, & Gore's (1977) definition of social support (which defines support as the degree to which an individual's needs for affection, approval, belonging, and security are met by others) into a number of questions, e.g. "How satisfied are you with the degree of affection you receive from your spouse/your friends/your relatives?". Other definitions such as that offered by Cobb (1976) ("The belief that one is cared for and loved, esteemed and valued, and belongs to a network of

communication and mutual obligation" p. 300) or the components offered by House (1981) (emotional concern, instrumental aid, information, and appraisal) could also be easily operationalized and measured. However, as Thoits emphasizes, "...most investigators have not attempted to formulate a precise conceptual definition of social support, and few have attempted to develop valid or reliable indicators of the concept" (p. 146).

The consequence of this failure has been inadequate measurement of social support. For example, researchers in this area typically take items from their data base (e.g. marital status, presence/absence of a confidant, belonging to church) and simply label them as measures of social support. Others have developed various scales purported to measure social support without consideration of conceptual and definitional issues (Gore, 1978; Lin, Dean, & Ensel, 1981). Thoits notes that the independent variable is often defined in terms of the outcome state, such as Nuckolls, Cassel, & Kaplan's (1972) definition of psychosocial assets as, "any psychological or social factors which contribute to a woman's ability to adapt to her first pregnancy" (p. 433). In addition, many of the support scales developed by researchers include items that are not directly related to interpersonal contacts (e.g. financial difficulties, lack of privacy, low self-esteem) as well as items related more directly to social relationships (e.g. number of persons one can talk to and trust). Thoits contends that many of these scales measure life difficulties rather than social support and that such imprecise conceptualizations have, in some cases, resulted in questionable and possibly invalid operationalizations. Yet before undertaking an examination of the conceptual relationship

between social support and health, an understanding of the various measures of health utilized in the literature will be important.

Measurement of Health

Studies on social support and health (across most populations) have tended to focus upon either physical health (perceived and objective) or psychological health and well-being (perceived and objective). Physical health measures have typically been more straightforward. Subjective measures of health have involved requesting that respondents rate their general health along a three or four point continuum from excellent to poor (e.g. Berkman & Syme, 1979). Objective measures of health have often involved counts of chronic health problems from a list of a dozen or so categories (e.g. Antonucci and House, 1983). Shanas (U.S. Department of Health and Human Services, 1982) and Antonucci and House (1983) have used functional health (e.g. ability to walk stairs, keep house) as an additional measure of overall health. Conversely, the measurement of psychological health or well-being has been an issue of considerable controversy of late and will discussed at greater length.

A recent article by Horley (1984) has identified two major problems with the use of subjective well-being indicators: 1) there is a need for better conceptual clarity and consistency, and 2) there is a problem in the level or scale of well-being assessment (i.e. day to day assessment versus overall life and life domain levels). The former has all but been ignored in the literature. In fact, it seems that many scales combine overall-life and

present life-domain questions (e.g. "Overall, my life has been as good as I expected." and "There are times when I feel like there's no one to talk to."). There may be a problem, however, with assuming that overall life outlook has as large a role to play as more immediate measures of well-being. The mixing of these two types along with the ignoring of actual day-to-day assessment of satisfaction may help to account for the relatively low percentage of variance of well-being explained by questions regarding the available level of social support.

Historically, well-being has been divided into three domains, life, satisfaction, happiness, and morale. Yet, each has been defined differently by various researchers and the terms have not always been treated separately. In fact, they are often interchanged (Horley, 1984). Yet, validity research has indicated that while life satisfaction, happiness, and morale are very much related, they are not identical. Definitional issues regarding life-satisfaction demonstrates the problems in this area. Neugarten, Havighurst, and Tobin (1961), for example, identified five components of life-satisfaction: zest, resolution and fortitude, congruence between desired and achieved goals, positive self-concept, and mood-tone. Other researchers such as Adams (1969) have not found research support for the five-part dimensional structure. George (1981) has proposed a shortening the of the definition of life-satisfaction to, "progress toward desired goals" (p. 351), but Horley (1984) suggests that such a definition may be somewhat flawed in that it limits life-satisfaction to a cognitive evaluation alone. As Horley (1984) concludes, "there is currently no single, accepted (or acceptable)

understanding of life satisfaction" (p. 126).

In terms of measurement, most researchers have used self-report scales comprising up to two dozen items about perceived support (e.g. Wood, Wylie, & Sheafor, 1969), while some have included "quasi-objective" measures by having professionals complete a questionnaire following a number of interviews with a subject (e.g. Neugarten, Havighurst, & Tobin, 1961). Other researchers have tended to use scales that measure more specific psychological functioning or mood, such as depression or anxiety (e.g. Derogatis, Rickels, & Rock, 1976). One problem in the use of such scales is that most have been developed and validated with younger populations and it is not known whether the results can be extrapolated to elderly individuals (Himmelfarb & Murrell, 1983).

As can be seen from the above discussion, defining health is often an extremely subjective and value-laden task. The possible measures of health available to the researcher are numerous. Objective measures may include life-span, disease, disability, health behavior, as well as compliance with medical regimen while subjective measures may focus upon discomfort with an illness, interpersonal relations, or life satisfaction. The measures chosen for use may reflect the norms and standards established by previous investigators as well as the personal values of the individual researcher. Research in the area of social support provides a classic example of these definitional problems. As few standards have been established, many researchers attempt to redefine health to meet their particular needs and consequently utilize unique measurement tools. Conducting research with the elderly population only

adds to these difficulties. For this population, especially, health is often viewed in relative terms. In many cases it is the subjective experience of physical illness or disability that impacts the most upon subsequent physical and psychological functioning. And while the normal physical and psychological functioning of an elderly individual may be quite different from that of an adolescent or young adult, separate norms for the elderly population are the exception. Given the subjective nature of the concept of health, it is likely that definition and measurement issues will continue to be problematic.

Theories of Social Support & Health

While the literature provides little explanation as to why social support should be related to health, a few writers have attempted to shed some light on this area. Wills (1984) presents an excellent summary of theories relevant for considering the supportive aspects of interpersonal relations. Five theories are identified, including social exchange theory, exchange versus communal relationships, social comparison theory, self-esteem theories, and personal control theories. Let us consider each one briefly.

Social exhange theory considers interpersonal relationships in terms of their capacity to provide rewards which are of value to the individual. These might include interpersonal rewards such as expression of liking or care, status enhancement, emotional gratification, information as well as more tangible goods such as money and services. Wills identifies one

theoretical complication with social exchange theory in that the theory would predict that individuals who receive aid will experience a state of indebtedness which may be aversive, leading to a decrease in future help-seeking. Exchange versus communal relationships discriminates between exchange relationships (e.g. economic transactions) and communal relationships (e.g. marriage, friendship). Therefore, interpersonal relationships are viewed as more communal, in which there is a desire to respond to another's needs. Social comparison theory suggests that individuals validate their views of personal competence and social reality through a comparison of their behavior and opinions with others. Generally this involves an upward comparison (with those more competent and better off), which according to Wills, does not apply as readily to persons who are stressed. Self-esteem theory suggests the importance of self-esteem maintenance as a social motive, especially among distressed individuals. One possible mechanism involves a downward comparison with individuals who are worse off. Finally, personal control theories are based upon the perception of control over events and the resulting positive effect on psychological health. This theory suggests that the presence of a strong social network and support system will lead an individual to perceive the availability of aid in the event of a stressful event or crisis.

Allen (1975) has reviewed the literature on social support and nonconformity, examining the relationship between social support and an individuals' dissent from group opinion. He found that a large number of variables determined the degree of dissent when individuals received social support from a partner. Allen suggests that social situations and

settings are quite diverse and that an array of social/interpersonal and cognitive forces can affect individual behavior. Therefore, it would be expected that considerable variation would similarly be observed in the relationsip between social support and health.

Langlie (1977) has written on the relationship of social group characteristics and the prevention of poor health. Two hypotheses are proposed, 1) Norms regarding health promotion vary across social groups and, therfore, effect the way in which each group exerts pressure to conform to those norms, and 2) The provision of information on health maintenance and illness prevention is related to the interactional patterns of each social group. Lin et al. (1979) suggest that if this is the case, social support may act as an antecedent to reduce the onset of illness as well as a buffer to reduce the effects of an illness. Thus, social suppport also serves a coping function against a potential stress-illness relationship. Given that interpersonal relationships are assumed to serve a supportive function, what is the actual relationship between social support and health?

The literature suggests that social support may have both main and interactive effects upon health. Perhaps the most popularly espoused theory is the "buffer hypothesis", in which social support is thought to moderate the effect of life change events or stressors. Major proponents of this theory such as Antonovsky (1980) and Cobb (1976) suggest that we should not expect dramatic main effects from social support. Instead, social support should act to moderate the effects of major transitions in life and of unexpected crises. Therefore, individuals with strong social

supports should be better able to cope with stressful life events. In the absence of such events, the amount of social support should have little or no significant influence upon one's state of health or well-being (Gore, 1978; Nuckolls et al., 1972). This theory is based in part upon a considerable body of literature linking stressful life events and psychosocial stressors with poor physical and/or psychological health. Given the relationship between stressful life events and health, the "buffer hypothesis" can be viewed as a linear model in which social support serves to moderate the effect of stress on health.

This hypothesis is based upon two basic propositions (Dean & Lin, 1977): 1) Stressful life events are positively related to illness, and 2) Social support is negatively related to illness. Therefore, it would predict that the total variance of illness is better explained by both social support and stressful life events than by stress alone. Lin et al. (1979) suggest a model in which the relationship between social support and stressful life events is fairly complex. One possible relationship involves social support as a structural factor in the alleviation or reduction of stress. Therefore, the effects of social support would precede the stressful experience and serve to mitigate or reduce its effects. A second possible mechanism is more reactive (buffering) in nature in which social support is contingent upon the occurrence of stressful life events. For individuals with strong support systems such support often has positive effects, while for individuals with weak support systems, the occurrence of stressful life events could result in a weakening of an otherwise poor support system.

Lin et al. (1979) tested their proposed model and obtained the

following results: 1) A relationship between stressful life events and illness (psychiatric symptoms) was confirmed, consistent with previous studies with different populations (a correlation coefficient of about .20), 2) Social support was found to contribute negatively to illness and, in fact, did so more significantly than stressful life events. Social support explained more than twice the variance of stressful life events and demographic factors combined, 3) No relationship was found between stress and social support, and therefore, there was little support for a mechanism in which social support precedes stress, and 4) Finally, there was no strong evidence of a reactive or buffering relationship between social support and stressful life events. Therefore, Lin et al.'s final model indicated joint effects of social support and stressful life events on illness, demographic variables of occupational prestige and marital status having no effect, and little evidence supportive of social support as a mediator between stressful life events and illnes.

Despite additional evidence in support of the buffering hypothesis (Cassel, 1976; Cobb, 1976; Dean & Lin, 1977), a number of theoretical problems and confounding factors make the findings of these studies somewhat tentative. According to Thoits (1982), one must first examine the interaction between changes in life events and changes in social support. Life events are assumed to result in significant changes in an individual's behavior and are typically measured by counting the number of such events experienced by an individual over the past 6-12 months (e.g. Holmes & Rahe, 1967; Masuda & Holmes, 1967). However, many of the life events scales used in this research contain items which will result in

either direct or indirect changes in social support. For example, death of a spouse or divorce will result in a direct change in social support while illness or demotion at work may have more indirect effects of an individual's support system. Since many studies measure social support only during or after the occurrence of a life event (e.g. Dean, Lin, & Ensel, 1980; Lin, Dean, & Ensel, 1979), it is difficult to evaluate the effect of a stressor on the availability of social support. Therefore, life events may be stressful both because they require some adjustment on the part of the individual and because they deprive the individual of important support resources. The effect of life events upon the availability of social support may have a far greater impact upon health and well-being than does any moderating effect of social support upon the effects of stressful life events.

According to Thoits (1982), one possible solution involves obtaining support levels before the occurence of a life event. To test the buffering hypothesis, the level of social support would be held constant during the analysis. Utilizing data from Myers, Lindenthal, & Pepper (1971), Thoits analyzed the buffering effects of marriage on psychological distress following a number of life events. Using only data on the marital status of subjects following the occurence of life events, Thoits found that undesireable life events had a significant positive effect on psychological distress measures for both married and unmarried, an effect which was three times larger for unmarried individuals (a difference significant at the .001 level) and supportive of the buffering hypothesis. Conversely, if analyzing only those individuals whose marital status was unchanged

before and after the life events (comprising 94% of the sample), unmarried individuals had only twice the effect as married individuals, a difference that was not significant. Further analysis also indicated that initial marital status and subsequent number of experienced life events were unrelated, removing this as a possible confound.

A second theory regarding the relationship of social support and health suggests that social support has a main effect on health status. For example, a number of studies have demonstrated a relationship between social support a number of studies have demonstrated a relationship between social support and psychological well-being in the absence of major life events (e.g. Berkman and Syme, 1979; Miller & Ingham, 1976, Roy, 1978). Additionally, some researchers have examined the relationship among social support, life events, and psychological health and found evidence of a main effect between social support and well-being but no buffering effect on life events (Andrews, Tennant, Hewson, & Vaillant, 1978; Lin, Dean, & Ensel, 1981).

Given the range of findings in the literature, it is likely that there exist both significant main and interactional (buffering) effects between social support and health, depending upon which mechanisms of social support are utilized and measured. Wills (1984) predicts just such an outcome utilizing his component analysis of social support previously presented. For example, he suggests that esteem support (i.e. a confidant or close relationship) will serve a buffering function for individuals under stress (in that self-esteem maintans a primary function for distressed individuals) as well as a main effect function in that, "persons with more esteem-supporting relationships will have a higher level of self-esteem

irrespective of the level of stressful occurrences" (p. 12). Conversely, Wills predicts that informational support and motivational support, which both become important when stressors exceed the person's available coping mechanisms or ability to problem solve, will operate as a pure buffering process. Status support and social relationships are viewed as primarily providing a main effect because each's supportive nature derives simply from the existence of various relationships rather than any qualitative measure of their level of support. Finally, instrumental support would be predicted to have only a small main effect if measured in terms of the provision of simple assistance with daily activities. However, if measurement of the perception of available and reliable support or the provision of instrumental assistance relevant to a specific stressor is included, this factor would likely provide a buffering effect. As a result, the following model may best illustrate the probable relationship between social support, stress, and health (see Figure 1). Such a model shows both direct and buffering effects of social support as well as both direct and moderating effects of stress (where stressful life events impinge directly upon the level of available support). Additionally, demographic variables are shown to effect health directly as well as moderate the effects of both social support and stress. A more thorough discussion of the confounding effects of demographic variables will be presented next.

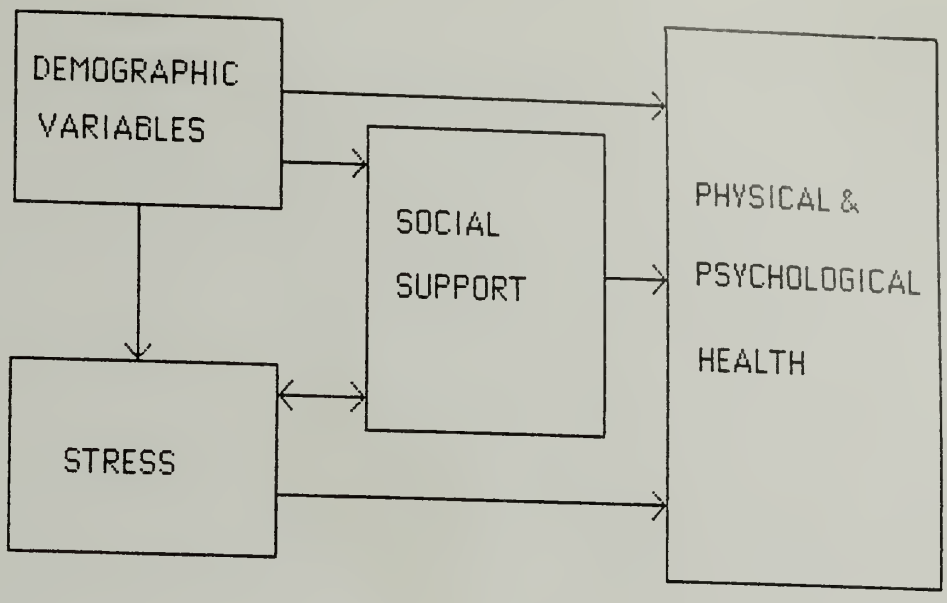

Figure 1: Relationship among social support, stress, demographics, and health

Confounding Effects of Demographic Variables

A number of variables such as sex, age, socio-economic status, and race may act to modulate the relationship of social support and health among the elderly. Marital status, as well, is treated by some researchers as a demographic variable that may moderate the association between social support and health. Others, conversely, consider marital status an important measure of social support. In fact, demographic variables often have a more significant relationship with health measures than do many measures of social support (e.g. Funch & Mettlin, 1982). Therefore, the relationship between the most commonly researched demographic variables and health will be discussed at some length.

Sex Differences

Sex differences have been particularly striking in the elderly population. For example, several studies have indicated that older women have more friends outside of the family than do older men (e.g. Bengston & Ragan, 1977; Troll, Miller, & Atchly, 1978) and that elderly men have fewer social support figures in general (Levitt, et al., in press). Lowenthal and Haven (1968), in their study of 280 elderly subjects, found that women were more likely to have a confidant than men. Interestingly, for married women, husbands were least frequently mentioned as confidants while for men, wives were often most important. The evidence indicates that while wives are the major confidants of older men, women typically turn to other women, siblings, or children (Troll, Miller, & Atchley, 1978). In fact, social ties among elderly women are strongest between mother and daughter (with whom widows tend to live) or sister and sister, with the latter often eclipsing the marital relationship in terms of closeness later in life (Troll, 1971). Cumming and Schneider (1961) report that for older men as well, higher morale is noted when siblings live nearby. Yet, Cicirelli (1977) suggests that there is conflicting evidence regarding the amount and importance of sibling contacts with age for both elderly men and women.

It appears that women, in general, have larger, more multifaceted social networks that remain available to them in old age. For example, women of all ages also attend church more often than men and report that religion is of more importance to them (Britton & Britton, 1972; Bengston & Ragan, 1977). Men tend to turn to their wives in old age while women tend to look outward to friends and relatives (Antonucci, 1983). A number

of researchers account for this difference by suggesting that women have better interpersonal skills than men. With old age, these skills become significantly more important and useful as women make use of their interpersonal skills to expand and strengthen their social support networks (Troll, Miller, & Atchley, 1979).

In the area of health status, mean life expectancy for women in America remains at least seven years more than that for men (78.2 years versus 70.8 years according to the U.S. Bureau of the Census, 1983). American women also continue to visit physicians more frequently than men (5.2 versus 4.0 visits per year, U.S. Bureau of the Census, 1983). While men are more likely to become seriously ill and die, women report higher incidences of a variety of chronic conditions such as coronary heart disease, hypertension, arthritis, rheumatism, diabetes, and disease of the urinary tract (U.S. Bureau of the Census, 1983). Interestingly, the Bureau of the Census reports that only a slightly higher percentage of men (14.6% for men versus 14.2% for women) have activity limitations due to a chronic condition. Finally, in terms of mental health, men have always evidenced higher suicide rates than women, and the risk of suicide increases considerably with advancing age (U.S. Public Health Serice, 1974). While women in younger age groups are more likely to suffer from affective disorders, sex differences may no longer hold among the elderly. However, elderly men do report a higher incidence of personality disorders while elderly women report a higher incidence of neuroses (Neugebauer, 1980).

Clearly, as one examines the elderly population, differential mortality rates result in samples with increasingly higher percentages of

women. While elderly men as a group do not necessarily suffer from a greater number of chronic conditions or have significantly more activity limitations than women, the evidence does suggest that elderly men are less psychologically healthy and report less life satisfaction with increasing age.

Marital Status

There is considerable evidence that marriage is positively correlated with improved health status and morale. For example, Blau (1973) reports that marriage protects against low morale among elderly subjects. Glenn & Weaver (1981) found that married subjects have greater overall life satisfaction than unmarried subjects Yet, Gove, Hughes, and Style (1983), using a more fine grained analysis, demonstrated that the quality of the marital relationship accounted for most of the variance in this effect. Researchers have also found that married people have larger networks than people who are single, divorced, or widowed (Babchuck, 1978-79). Interestingly, those elderly who have never been married, while usually reporting less life satisfaction/happiness than those who are married, do report slightly higher life satisfaction/happiness than elderly who are widowed or divorced.

There may be some important sex differences in the relationship between marriage and social support. For example, wives have been identified as the major confidants of older men and, thus, their primary source of social support. Conversely, women tend to turn to other sources of social support as they age. This may actually result in a decrease in social support for older married women who, as the primary provider of

support to their husbands, are subsequently deprived of outside sources of support (Troll, Miller & Atchley, 1978). Further evidence is provided by Cumming and Schneider (1961) who found morale for older women to be highest among widows and lowest among married women.

Mortality rates as well seem to be affected by marital status. For example, Berkman and Syme (1979) found a positive correlation between marriage and decreased mortality rates among adults between the ages of 30 and 69. Others such as Kraus and Lilienfeld (1959) observed decreased mortality rates from all causes among married subjects versus single, divorced, or widowed. Additionally, they found widowers to have three to five times the death rate of married men of all ages. Pfeiffer (1973) found that married elderly had the lowest incidence of psychopathology, with greater prevalence among the widowed and the highest incidence of psychopathology among the separated and divorced. In sum, marriage appears to have both positive effects upon both life satisfaction and mortality rates. Yet, while among elderly men marriage is clearly the primary source of support, elderly married women may find marriage to actually be a hindrance to the development of social support systems.

Age Differences

The layman's assumption has been that people become gradually more socially isolated as they age. However, the research evidence fails to support this notion and, in fact, most elderly have fairly adequate social support networks (Harris, 1975). While Campbell (1980) found no difference in network size among a national sample of adults 20 years of age and older, he did note that older subjects had fewer confidants. In

terms of network makeup, Fischer (1982) found that adults under 40 years of age had more non-kin in their networks. Similarly, Babchuck (1978-79), in a study of 800 non-institutionalized adults ranging in age from 45 to 74 years old, found no difference in the number of primary and confidant relatives across age groups. However, he did note a difference in the number of primary and confidant friends in favor of the younger respondents. Interestingly, Varoff, Douvan, and Kulka (1981) examined a national sample of subjects 21 years of age and older and found that younger respondents expressed more of a desire to have additional friends and support than older subjects. Additionally, older respondents reported better feelings of network adequacy. Finally, Kahn and Antonucci (1983) report the results of a study involving 719 non-institutionalized adults comprising three age groups, 50-64, 65-74, and 75-95. They found no difference in network size across the groups as well as no difference in amount of social support received. However, younger respondents provided significantly more support to others yet also desired more support than was available. In summary, age differences are not as profound as at first thought. In fact, older respondents in many studies indicate more satisfcation with their social support systems than do younger subjects, despite little or no difference in the size or make-up of the network.

A strong positive relationship between age and physical illness is both self-evident and confirmed by recent statistics indicating that elderly Americans are twice as likely to face activity limitations due to chronic medical conditions as Americans between the ages of 45 and 64 years of age, and seven times as likely to be physically limited as those under 35 years of age (U.S. Bureau of the Census, 1983). Clearly, the

incidence of chronic conditions such as coronary heart disease, hypertension, bronchitis, arthritis, rheumatism, and diabetes are significantly higher among those over 65 years of age (U.S. Bureau of the Census, 1983). In fact, aging itself has been referred to as a gradual decline of physiological functioning which results in losses in performance (Renner & Birren, 1979). These changes may make the elderly more susceptible to disease and stressful stimuli, resulting in higher incidences of physical illness.

It is not yet clear that certain psychological disorders are more prevalent among the elderly. Epstein (1976) and Kay and Bergman (1980) cite a number of studies which indicate that depressive neurosis as well as unspecified chronic depression are more prevalent among the elderly. Other studies of community living elderly have also documented relatively high rates of psychological disorders among this population. Examples include Garside, Kay, and Roth (1963) who found 26.5% of a random sample of elderly registered voters to exhibit affective and neurotic disorders, Bailer (1968), who found a 30% rate of depression and neurotic disorders in an elderly population, and Bergman (1971), who reported that of a random sample of 300 elderly, 51% were suffering from mild to moderate neurotic symptoms (24% with late onset), 21% with chronic depression, and 6% with personality disorders. Yet, hospital registers and field studies have shown a decrease in the incidence of neurosis with age (Kay & Bergman, 1980). Other reports suggest that there are no increases in neurosis (Pasamanick, 1962) or functional psychosis (Simon, Lowenthal, & Epstein, 1970) with age. Unfortunately, inconsistencies in the research findings may be due to differences in the definition of a given disorder as

well as variations in assessment tools. Also, behaviors that are often attributed to aging (e.g. somatic complaints, apathy, withdrawal, functional slowness) may in fact be an atypical pattern of "masked" depression and many symptoms of depression (e.g. sleep distrubance, loss of appetite) may also be the result of physical disorders which commonly affect this population (Levy, Derogatis, & Gatz,1980). Yet, in general, the mental health of the elderly population may not be significantly different than the under 65 population. In fact, Harris (1975) found that while 45% of the elderly in America indicate that life could be happier, 49% of those under 65 years of age report feeling the same. Additionally, a recent study by the National Insititute of Mental Health (1983) found that the highest incidence of psychiatric disorders to be among those adults 25-45 years of age.

Socio-Economic Status

Decreased socio-economic status, education, and income have been shown to be related to smaller social networks consisting of mainly family members while higher socio-economic levels, education, and income often result in more diverse social networks of both famiy members and friends (Antonucci, 1983). More specifically, Fischer (1982) found that for all age groups, people with higher educational levels reported more diverse and broad support networks. Additionally, income was found to be positively correlated with the number of non-kin network members. Babchuck (1978-79) and Lopata (1979) reported educational level to be positively correlated with the size of one's social network and number of friends among elderly subjects. Similarly, Harris (1979) found

lowered income and educational level to be related to increased feelings of loneliness in a national sample of elderly. Interestingly, the relationship of sex and marital status with social support may be moderated by the effects of socio-economic status. For example, Lopato (1979) found that widows with higher levels of education were more socially integrated. Similarly, Ferraro and Barresi (1982) reported no difference between widowed men and women in their level of isolation.

Evidence indicating differences in rates of physical and psychological illness across socio-economic groups is also available. For example, Hollingshead and Redlich (1958) reported social class to be positively correlated with the incidence of mental illness. Similarly, Christenson and Hinkle (1961) found a strong relationship between limited educational level and increased reports of physical illness. The United States Census Bureau (1983) has documented that a significantly higher percentage of people in lower income brackets have physical activity limitations and that lower income is also associated with higher incidence of diabetes, coronary heart disease, and hypertension. As with level of social support, socio-economic status may serve to moderate the effects of other demographic variables such as age, sex, marital stauts, as well as ethnic origin.

Racial/Ethnic Differences

There is also evidence to indicate that there are major ethnic differences in available social support. A number of researchers suggest that many ethnic groups treat their elderly in a more positive manner than the majority of Americans. Canter (1979), for example, found that elderly

Hispanics interacted with their children more than elderly Blacks or Whites. Weeks and Cuellar (1981) reported that immigrants of ten different ethnic groups in the San Diego area had closer family ties than American-born generations. Linn, Hunter, and Perry (1979) surveyed 285 Cuban, Black, and White subjects in Florida and found that Blacks had the most amount of social involvement and activity while the Cubans had the least. Yet, after reviewing the literature on ethnicity and social support, Antonucci (1983) concluded that while there were differences among ethnic groups, variables such as age, income, and education may have influenced the nature of the support provided.

There is also evidence suggesting differences in morbidity and mortality rates across ethnic groups in America. For example, the United States Bureau of the Census (1983) reports the life expectancy in America for Whites to be 75.1 years versus 70.9 years for Blacks. Interestingly, the Bureau indicates relatively little difference in rates of physician visits by race (4.6 per person per year for both White and Black respondents) or in limitation of physical activity due to chronic illness (14.5% of the White population versus 14.7% of the Black population). Significant racial differences were noted, however, in the incidence of hypertension (13.4 per 100 persons for Whites versus 23.7 per 100 persons for Blacks).

Objective Versus Subjective Measures of Social Support

While two dimensions of social support, quantitative (objective) and qualitative (subjective) measures, have been identified, it has been more

typical for researchers to concentrate upon the former (Ward et al., 1984). Yet some researchers have suggested that qualitative measures of social support may be more strongly related to psychological and physical health than quantitative measures (House, 1981; Turner, 1984; Wills, 1982). Quantitative measures have typically involved the use of frequency of social contacts as an important data base (Troll, 1980). Qualitative measures often involve the use of subjective ratings of social support on the part of the subject. The roots of such subjective ratings may be traced to some of the earlier definitions of social support. Cobb (1976), for example, based his concept of social support upon the extent one believes that he or she is cared for, loved, esteemed, valued, and belongs to a network of communcation and mutual obligation. The role of perceived reality was discussed even earlier by Ausubal (1958) who suggested that, "This does not imply that the perceived world is the real world, but that perceptual reality is psychological reality and the actual (mediating) variable that influences behavior and development" (p. 277). Cognitive appraisal of support, therefore, is likely to be effective only to the extent that it is perceived (House, 1981). Thus, both the context of social support (quantitative measures and descriptive information of the support system) and the degree to which the individual experiences the environment as supportive must be considered in order to obtain a comprehensive measure of social support.

Consequently, some writers in the area have called for both measures of social context (or objective knowledge of the social environment) as well as perceived support (Henderson, Byrne, & Duncon-Jones, 1981; Turner, 1983). A number of researchers who have used multiple measures

of social support have typically included measures of perceived support. For example, Lin, Dean, & Ensel (1981) identified a social support factor in which subjects rated how much they had been bothered by lack of close companionship, inadequate number of close friends, and the lack of anyone to whom one might show love and affection. Husaini, Neff, Newbrough, & Moore (1982) assessed perceived satisfaction and happiness with spouse and marriage as well as how well the spouse was perceived as understanding one's problems. Aneshensel and Frerichs (1982) made use of a Sense of Support Scale in their evaluation of the relationship among stress, support, and depression, while Henderson, Duncon-Jones, Adcock, Scott, and Steele (1978) developed the Interview Schedule for Social Interaction (ISSI) which measured both actual conditions of the social environment as well as the adequacy of the environment as perceived by the subject.

If, as is suggested, the individual's subjective evaluation of social support is paramount, then even relatively low levels of social contact and assistance may not necessarily be correlated with low perception of support. Sherman (1975) found just such results in a study comparing elderly in retired housing with those in the community. While those subjects in retired housing had fewer interactions with their families and younger people, those in the community had fewer interactions with neighbors and older people. Despite these differences, perceived sufficiency of involvement with family, neighbors, older, and younger people was the same. Sherman's study emphasizes the importance of examining perceived support from a variety of sources, for deficits in one area may be more than made up for by strong support in another.

Other researchers who have taken multiple measures of social support have found perceptions of support to be significantly related to health measures, even more so than quantitative measures. Blazer (1982), for example, found levels of perceived social support to be more strongly related (inversely) to mortality rates than was frequency of contacts and availability of attachments. Heltsley and Powers (1975) demonstrated that perceived adequacy of social interactions was significantly correlated with marital status, age, income, housing quality, perceived health, and a rated health score in a group of rural elderly. Remarkably, perception of frequency of contacts and actual number of contacts were not significantly correlated. Ward et al. (1984) utilized a sample of 1,185 elderly and noted subjective assessments of social ties and supports to be more strongly associated with well-being than objective assessment. Conversely, Schooler et al. (1981) and Moriwaki (1973) found subjective measures of support to have little association with morale or well-being. In fact, in both studies, objective measures proved more important. Finally, Liang et al. (1980) reported that subjective measures of social integration mediated the effects of objective information on morale and that objective measures had no direct effect upon morale. While the relative importance of subjective and objective measures of social support remains in dispute, it does appear that the perception of isolation among elderly may be as good or better a predictor of psychological and physical health as objective data involving frequency of contacts or marital status.

Adverse Effects of Social Support

Not all researchers conducting work in this area agree upon the importance of social support on health among the elderly. For instance, Lowenthal and Boler (1965) indicated that voluntary reduction in social activity (versus reduction due to widowhood, forced retirement, or physical problems) did not necessarily affect morale or mental health status in negative ways. In their study, those subjects who had suffered a loss, retirement, or physical problems had much lower morale regardless of whether or not there was a subsequent change in social interactions. Therefore, negative life events rather than changes in social interaction patterns were viewed as being responsible for decreased morale and poorer mental health status. Other researchers have found that those who always lived alone fared better than those who had close relationships that were eventually lost (Clark & Anderson, 1967) and that life-long isolates fared better than those who attempted but failed to establish social relations (Lowenthal, 1964).

Not only has social support been found to have little or no impact upon physical and mental health status among some elderly, but a number of researchers have observed detrimental effects of social support in other populations. For example, Hyman (1972) examined a sample of patients with a variety of medical conditions and found that perceived preferential treatment from the family was correlated with the level of subsequent disability at work, at home, and among friends. Similarly, Garrity (1973) and Lewis (1966) reported that the more a patient's family worried or was overprotective, the less likely was he or she to return to work. Baltes

(1984) also found that nursing home residents were less apt to engage in independent self-care if loved ones or staff punished attempts at independence.

DiMatteo and Hays (1981) discuss some possible reasons that social support may be counterproductive following a serious illness. First, they hypothesize that serious illness can severely disrupt family functioning, especially if the patient requires and receives considerable support. Secondly, social support may tend to undermine the patient's self-esteem as he or she must now be viewed as an "impaired person". As a result, the patient may feel distressed at being a "burden" and infringing upon their loved ones' time. Also, patients may resent or be ashamed of their new status and seek to hide their condition by becoming socially detached or reluctance to discuss their feelings and concerns with others. Ironically, in an attempt to limit the amount of attention received from their social support group (in order to preserve self-esteem and not be a burden), patients may actually further detach themselves from the very sources of support they want to keep. Finally, compliance with medical regimens is often dependent upon social support in that families who question or have concerns about the patient's treatment are less apt to encourage him or her to follow a physician's recommendations.

The contradictory and sometimes paradoxical effects of social support only tend to reinforce the importance of obtaining cognitive and perceptual information on the availability and effect of social networks. Clearly, objective data regarding the amount of available social support is not enough. Context, intent of support provided, as well as the patient's desire for and understanding of the reason for the offered support all must

be taken into consideration.

Summary

While the relationship between social support and health has received considerable empirical support, research in this area has been characterized by definitional and conceptual problems. To date, there exists little agreement upon a concise, yet all-encompassing definition of social support. Health, too, is not only an extremely subjective concept, but most attempts to define it run the risk of being quite value-laden. This lack of consistency among both social support and health measures has made it difficult to organize and compare findings across studies or to understand conflicting results.

A number of theories have been proposed to explain the positive effects of social support upon health. Some view social support as a buffer against the adverse effects of stress while others suggest a more direct relationship between social support and health. Other possible mechanisms have been proposed, including the presence of social support preventing the onset of health problems (through reinforcing health behavior), increasing compliance with medical regimens, or improving self-esteem. Whatever the mechanism, the relationship between social support and health is further complicated by demographic variables such as sex, age, and socio-economic status. It is not uncommon for more variation in individual health to be explained by these confounding variables than by social support itself.

In terms of methodology the relatively large number of retrospective

studies in the literature has also made it difficult to infer a causal role of social support. In those few studies which are prospective in nature, assistance from others is often confounded with the ability of the subject to elicit and make use of social support. Additionally, numerous researchers have tended to treat social support as a unitary rather than a multidimensional construct. Yet, even when multidimensional approaches to the measurement of social support are utilized, few studies have operationally distinguished among the various types of social support.

Despite the many conceptual and methodological problems, what is it about social support that is so beneficial to the health of individuals? Certainly, the adverse effects of social support, which have been well documented, suggest that interactions alone are not the essential ingredient. It may well be that subjective measures of social support, or the extent to which one perceives that support is available and perceives that interactions are supportive, are the critical variables.

Statement of Problem

This study seeks to investigate the relationship between level of social support (actual and perceived) and health status (physical and psychological) in two elderly samples - community active elderly who participate in a senior citizen center and/or meal site at least one time per week, and homebound elderly who are unable to leave their homes more than one time per week. The study attempts to address previous limitations in the literature by including both objective and subjective measures of social support, a combination of both physical and

psychological health factors, as well as a more thorough examination of minor health problems and psychological health status. The two specific groups of elderly who were examined have received differential levels of attention in the literature. Those elderly who frequent senior citizen centers have been the subject of a considerable number of research projects in the 1950's and 1960's, focusing mostly upon utilization and program of develpment (Ralston, 1984). However, only recently has there been renewed interest in this population, evidenced by an increasing number of studies on senior citizen centers appearing in geriatric journals. Conversely, the homebound elderly have received scant attention in the literature, due in large part to the inherent difficulty of accessing this population and as a function of the level of their disability (Streib, 1983). Clearly, a major and important difference between the two groups is their access to social support, the former actively seeking a support network outside of the home and the latter having to depend upon network members coming into their homes.

In the present study, elderly refers to individuals 60 years of age or older. Health is defined in a number of ways, including the relative score on a list of 11 chronic conditions, the ability to carry-out daily activities (e.g. dressing, using stairs), the relative presence of minor health conditions (e.g. headaches, loss of appetite), a rating of overall perceived health on a four point scale, and the scores on four indices of a psychopathology scale. Social support is also multiply defined and determined, including marital status, number and frequency of social contacts, and the perceived availability and quality of support from family, friends, and neighbors. Finally, stress is defined as the relative

score on a list of 35 possible concerns or worries in the spheres of health, finances, and social interactions.

Populations to be Studied

Description of the senior center population in the literature is somewhat conflicting. Harris (1975) indicates that senior citizen centers are available to 50% of the public (age 55 and over) and that 13% of those over 55 years of age have attended in the past year. Forty-five percent of this group (or 5-6% of all senior citizens) are probably more regular attendees, having visited their local senior citizen center within the past two weeks of the Harris poll. Senior citizen centers are generally attended by lower income elderly (18% of those with under $7,000 annual income versus 10% of those earning between $7,000 and $15,000 a year and 8% of those earning over $15,000 per year) and by women more than men (15% of the female population versus 11% of the male population over 55). Interestingly, while a greater percentage of the Black elderly population than the White elderly population attend senior citizen centers (Harris, 1975), many continue to feel that the Black population is underepresented (Ralston, 1984). Other researchers have indicated that users of senior citizen centers are socially and physically better off than non-users (Pollack, 1970; Trela & Simmons, 1971; Tuckerman, 1967) and report higher morale and feelings of well-being (NCOA, 1975). Hanssen, Meima, Buckspan, Henderson, Helbig, and Zarit (1978) report that users and non-users of senior citizen centers show little difference in demographic variables and in frequency of social contacts. However, participants of

senior centers and nutrition sites reported feeling less depressed than non-participants. Conversely, Demko (1979) reports that senior center attendees have less contact with family and friends than non-attenders. In general, Hanssen et al (1978) found that senior centers, "...appeared to attract the less depressed, more active, and more physically intact older person" (p. 197).

Conversely, the homebound population has clearly been an understudied group. Many researchers have tended to focus upon healthy, active, accessible elderly, especially when studying areas of life satisfaction and morale (Streib, 1983). The homebound population has been referred to by a number of terms in the literature, including the old-old (Neugarten, 1974), the housebound, as well as the frail elderly (Shanas, 1962). Shanas provided one of the earliest descriptions of this population in 1962 as part of a national sampled study of the elderly, a study that was reconducted by Shanas in 1975 (U.S. Department of Health and Human Services, 1982). In those reports Shanas described two populations, bedfast and housebound, which comprise nearly twice the number of elderly who are institutionalized. Shanas defined this population as having limitations of sufficient severity to confine them to home. In 1962, 8% of the noninstitutionalized elderly population were homebound; in 1975 the number had risen to 10%. Of those homebound in 1975 (comprising 2 million individuals), 30% were confined to bed while the remaining 70% were only able to move about their homes. There were 7% more homebound women than men. In general, members comprising this population are likely to be more than 75 years old, female, and without a partner (Streib, 1983).

Attempts at studying the homebound population have been meager. In fact, Shanas (1962) reports considerable differences in loss rates for those subjects over the age of 75 due to many being "too sick to be interviewed". Streib (1983) points out that most studies involving an interview format assume people to be rational, functioning, and able to provide reliable answers. This is less likely to be the case with homebound subjects (who are often older and less healthy) and requires considerable clinical skills on the part of the interviewer to complete a full set of questionnaires. Other researchers such as Yordi, Chu, Ross, and Wang (1982) have raised ethical and methodological concerns over the use of control groups with this population. O'Brien and Wagner (1980) were able to study 361 frail elderly living in Portland, Oregon. Their findings indicated there to be a high association between increased social interactions and greater reliance on informal aid. In general, there was less reliance on formal agencies than on informal sources of support. Dibner, Lowy, and Morris (1982) reported on a project to provide emergency alarm systems to the frail elderly. Of 2,000 potential participants interviewed in an urban public housing project, 355 were identified as needing services. Three classifications were used to discriminate among individuals in the identified group: 1) severely functionally impaired and socially isolated, 2) severely functionally impaired and not socially isolated, and 3) not functionally impaired but medically vulnerable and socially isolated. Clearly, research on this population is in its early beginnings and while there is some sense of the number of individuals comprising the homebound elderly, there is little information available describing the characteristics and needs of this

group.

Research Hypotheses

The following hypotheses were formulated for testing:

Hypothesis 1: Given the relatively poor health status and more limited access to sources of social support, the homebound group will have more health complaints and a lower level of actual and perceived social support.

Hypothesis 2: Measures of objective and subjective social support will be significantly correlated as will be measures of chronic health, minor health complaints, and psychological health for both samples.

Hypothesis 3: There will be a significant negative relationship between health status and social support for both groups in that high levels of social support will be associated with fewer reported health problems and better health.

Hypothesis 4: Controlling for sex and age, there will be a greater association between health state and social support than between health state and group membership.

Hypothesis 5: Perception of social support will be more strongly related to health status than objective measures of social support.

Hypothesis 6: Perceived support from the family will be more important than that of friends or neighbors for the homebound group, while perceived social support from friends and neighbors will be more important for the community active group.

Hypothesis 7: Minor health complaints and psychological health

measures will have a greater amount of their variance explained by social support measures than other physical health measures for both groups.

Hypothesis 8: The relationship between social support and health will be stronger for the homebound group than for the community active group.

Hypothesis 9: There will be a positive correlation between stress measures and health measures for both groups (i.e. high stress will be related to poor health). There will be an negative correlation between stress measures and social support measures for both groups (i.e. high stress will be related to lower social support).

Hypothesis 10: Controlling for sex, age, and stress, there will be a significant negative relationship between social support and health for both groups (i.e. low social support will be related to poor health).

CHAPTER II

METHOD

Subjects

Subjects were communty-dwelling elderly (total N of 117) who were at least 60 years of age. They were divided into two subgroups, homebound (N=47) and community active (N=70). Homebound elderly were individuals who left their homes no more than one time per week for purposes other than visits to physicians or health care professionals. Community active elderly were individuals who attended local senior citizen centers or meal sites at least once per week. Subjects from this subgroup frequently left their homes for non-medical activities.

About 80 homebound elderly were recruited from community sponsored meals-on-wheels programs and programs that provide home-care to elderly citizens in suburban areas of western Massachusetts and Providence, Rhode Island. Each agency contacted all of their clients who met the homebound criterion and had the cognitive capacity to answer the questionnaires. Those who agreed to participate signed a release form and were subsequently contacted by project staff. Fifty-four homebound individuals agreed to be interviewed. Of this group, only 47 were able to complete the entire set of questionnaires. Almost all of these individuals indicated that their homebound status would not be changing in the future.

Approximately 140 community active subjects were recruited from eleven senior citizen centers and meal sites in surburban areas of western Masachusetts and Michigan. Advance notices were typically sent

to each site announcing the day that project staff would be visiting. Upon arrival, an announcement was made before the entire group explaining the project and asking for volunteers. Seventy community active individuals were able to complete the entire set of questionnaires and meet the criterion of weekly attendance at the senior center.

Measures

The following scales were used in the collection of data:

1. Background Information (see Appendix A-1): This scale included measures of the number and frequency of social contacts, membership in clubs and organizations, overall subjective assessment of health, extent of involvement in organized activities for seniors, as well as the degree of religious involvement and its perceived importance. Demographic information and personal data (e.g. age, sex, and marital status) were also elicited by this scale.

2. Social Support Inventory (see Appendix A-2): This scale was designed to measure subjects' perceptions of the extent to which they have access to social support from family, friends, and neighbors. The scale was an expanded version of an earlier tool developed by Fleming, Baum, Gisriel, and Gatchel (1982).

3. The Worry Scale (see Appendix A-3): This was a pilot scale (Wisocki, & Handen, 1983; Wisocki, Morse, & Handen, 1984) designed to assess the extent to which subjects are concerned about impending financial, health, and social issues.

4. Multiple Affect Adjective Check List (see Appendix A-4): This was

a 132 item adjective check list which was developed by Zuckerman (1960). Three sub-scales have been validated, including depression, hostility (Zuckerman, Lubin, Vogel, & Valerius, 1964), and anxiety (Zuckerman, 1960).

5. Health Questionnaire (see Appendix A-5): This scale was utilized to obtain a measure of both minor health complaints and chronic illness. In addition, information on functional health problems (e.g. ability to do light housework, walk stairs), change in health status during the past year, number of weeks spent in bed due to illness within the past year, reason for and satisfaction with last visit to physician, and whether the subject had a medical check-up in the past year was obtained.

6. SCL-90 (see Appendix A-6): The SCL-90 (Derogatis, Rickles, & Rock, 1976), a 90-item self-report symptom inventory, was used to measure nine primary symptom dimensions plus three global indices of pathology. The primary symptom constructs are somatization, obsessive-compulsive signs, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The global indices of pathology are the global severity index (which combines information on a number of symptoms with intensity of distress), the postive symptom distress index (which is a pure intensity measure), and the positive symptom total (which simply indicates the number of symptoms). High convergent validity for the SCL-90 was demonstrated through a comparison of the nine primary symptom constructs with the MMPI scales (Derogatis, Rickles, & Rock, 1976).

Procedure

The six scales required between 1-2 hours to complete. Community active subjects took about one hour to complete the questionnaires and usually did so in the presence of project staff who were available to answer questions and to explain unclear sections. About 20% of the community active subjects completed the questionnaires on their own, at home, following explanation by a project staff member. A couple of subjects who had visual or physical impairments received assistance in reading and/or filling out the forms. Conversely, homebound subjects were interviewed for their responses in all cases since the vast majority of homebound subjects had impairments that prohibited independent completion of the questionnaires. These interviews usually required about two hours.

Analysis of Results

The main variables examined within this study are listed by category below.

Social Support Variables

1. Number of Social Contacts and Frequency of Social Contacts (see Appendix A-1): Subjects were asked to list all persons with whom they visit (or who visit them) and the frequency of visits per month. The number of social contacts was obtained by summing the number of persons identified. The frequency of social contacts was obtained by summing the

frequency of visits per month for all persons identified. It should be noted that these two variables had a different meaning for the two groups and, therefore, were not equivalent. For the homebound group, number and frequency of contacts encompassed the entire range of face to face social contacts made by each subject, given that all interactions involved having someone visit the home. Conversely, for the community active group, number and frequency of contacts encompassed only a portion of each subject's total monthly social contacts. For example, contacts at the senior citizen center as well as incidental contacts in the community were not included. This was done both to control for the size of each senior center (some had only a dozen members on a given day while others had hundreds) and to avoid the problem of defining a social contact within that environment as well as in the community. Therefore, these two variables did not adequately describe the extent of social contacts for the community active group and cannot be considered as equivalent measures for both groups.

2. Marital Status (see Appendix A-1): Subjects were asked to indicate their marital status: single, divorced, widowed, or married. Responses were assigned a value ranging from 1 (single) to 4 (married). However, for purposes of the analysis, single, divorced, and widowed were recoded as unmarried ('0') ; married was recoded to '1'.

3. Subjective Measure of Social Support (see Appendix A-3): This was obtained through use of the Social Support Inventory, a scale consisting of 26 statements related to social support. Subjects were asked to rate the extent to which they agreed or disagreed with each statement on a seven point Likert scale (ranging from 1 - agree strongly, to 7 - disagree

strongly).

The scale was subsequently divided into four factors which measured perceived general support as well as support from friends, neighbors, and family. General support involved questions 1, 2, & 3 (e.g. "I don't know anyone to confide in"); support from friends involved questions 4, 20, 21, & 22 (e.g. "I have friends who will support me no matter what I do"); support from neighbors involved questions 23, 24, 25, & 26 (e.g. "My neighbors make me feel that I am cared about"); and support from family involved questions 16, 17, & 19 (e.g. "My family provides me with satisfaction and a sense of strength"). About 30 subjects failed to answer at least one item on family support. It was assumed that these items were most likely skipped because no famly support was available. These missing data were handled in a conservative manner by assigning a '4' (neither agree or disagree) to these items. A total mean perception of social support was obtained by adding the individual scores for the above 13 items and dividing by the number of items. Means were also obtained in a similar manner for general support as well as support from friends, neighbors, and family. An alpha coefficient of .81 was obtained for the 13 items combined while a combined alpha coefficient of .59 was obtained for the remaining 12 items which were not utilized.

Health Variables

1. Perceived Illness (see Appendix A-1): Subjects were asked to rate their present overall health as excellent, good, fair, or poor. Responses were assigned a value ranging from 1 (excellent) to 4 (poor).

2. Chronic Illness (see Appendix A-5): Subjects were asked to

indicate if they have had continuing problems with any of 12 categories of chronic illness. Those which were so identified were assigned a value of 2; those which were not problematic were assigned a value of 1. Given many subjects' inability to discriminate between hypertension (included in item 2) and high blood pressure (included in item 3), these items were combined for the purposes of analysis (i.e. Items 2 and 3 were eliminated and replaced by a new item 13. If either item 2 or 3 had been identified as a chronic health problem, item 13 was assigned a value of 2; otherwise it was assigned a value of 1). A mean chronic health score was obtained by adding the values for all items answered and dividing by that number.

3. Minor Health Complaints (see Appendix A-5): Subjects were asked to rate the frequency of 22 minor health problems (item 18 was eliminated due to a lack of clarity regarding how it should be answered) using a 4 point scale (ranging from 1 - nearly all the time, to 4 - never). However, for the purposes of the analysis, this scale was recoded such that a response of "never" received a value of '1', a response of "not very much" received a value of '2', a response of "pretty often" received a value of '3', and a response of "nearly all the time" received a value of '4'. A mean minor health score was obtained by adding the values for all items answered and dividing by that number.

4. Functional Health Problems (see Appendix A-5): Subjects were asked to rate their ability to engage in ten household and community activities utilizing a two point scale (1 - no trouble engaging in the activity; 2 - some trouble engaging in the activity). Seven of the ten items (ability to do heavy housework, light housework, use public transportation, walk up or down stairs, wash and bathe, dress, and cut

toenails) were combined to form the scale. A mean functional health score was obtained by adding the values for all items answered and dividing by that number.

5. Psychological Health (see Appendix A-6): Subjects were asked to rate the occurrence of 90 symptoms during the previous two weeks using a five point scale (ranging from 1 - never, to 5 - extremely). Four measures of psychological health were used in the analysis - depression, anxiety, interpersonal sensitivity, and a total of the nine primary indices. A mean score for each factor was obtained by adding the values for all items answered and dividing by that number.

6. Stress (see Appendix A-3): Subjects were asked to rate the extent to which they were worried about 35 items pertaining to impending financial, health, and social issues utilizing a five point scale. Responses were assigned a numeric value ranging from 1 - never, to 5 - much of the time. Three mean subscores were obtained by summing the values for items answered in each area (Financial concerns: items 1-5; Health concerns: items 6-22; Social concerns: items 23-35) and dividing by that number. Finally, a total score was similarly obtained by summing the individual scores for all items answered and dividing by that number.

7. Mood (see Appendix A-4): Subjects were asked to identify which adjectives from a list of 132 described the way they felt most of the time. Affirmative responses were assigned one point while those adjectives not identified were assigned a value of zero. Three factors which were identified and validated by Zuckerman (1960) and Zuckerman, Lubin, Vogel & Valerius (1964) were utilized in the analysis. The factor for depression included 20 items rated as positive indicators of

depression and 20 items rated as negative indicators of depression. The latter items were recoded so that a value of '1' was assigned if the item was not identified and a value of '0' assigned if the item was identified. Therefore, a total of 40 points was possible, with higher scores indicative of greater depression. The factor for anxiety included 11 items rated as positive indicators of anxiety and 10 items rated as negative indicators of anxiety. The latter items were recoded so that a value of '1' was assigned if the item was not identified and a value of '0' assigned if the item was identified. Therefore, a total of 21 points was possible, with higher scores indicative of greater anxiety. Finally, the factor for hostility included 16 items rated as positive indicators of hostility and 12 items rated as negative indicators of hostility. Again, the latter items were recoded so that a value of'1' was assigned if the item was not identified and a value of '0' assigned if the item was identified. A total of 28 points was possible, with higher scores indicative of greater hostility. Results of the analysis using mood as a dependent variable appear in Appendix B.

Demographic Variables

Two demographic variables were used in the analyses (see Appendix A-1). Subjects were asked to indicate both their age and their sex. Females were assigned a value of '0' while males were assigned a value of '1'.

Analysis Strategy

The results of this study are reported in the following fashion:

1. Comparison of group demographic, dependent, and independent variables involves a series of multiple regression analysies with an F-test of significance. A subsequent series of multiple regression analyses are conducted, controlling for the effects of demographic variables (sex and age).

2. Examination of the relationship among social support measures, among health measures, and between social support and health measures is conducted utilizing bivarate correlation analyses and a subsequent partial correlation, controlling for the effects of sex and age.

3. A series of multiple regression analyses are used to determine the amount of variance explained by group membership. A second series of multiple regression analyses are then conducted to examine the relative contribution of subjective measures of social support following the inclusion of demographic and objective social support measures in the regression equation.

4. Finally, a series of bivariate correlation analyses are used to examine the relationship between stress and social support and between stress and health. A subsequent series of multiple regression analyses are conducted to examine the relative contribution of subjective measures of social support following the inclusion of demographic, stress, and objective social support measures in the regression equation.

CHAPTER III
RESULTS

Sample Characteristics

The two samples utilized in this study were obtained from the following areas:

Community Active: Garden City, MI (N=14), Longmeadow/Agawam, MA (N=8), Greenfield, MA (N=9), and eight towns in Hampshire County, MA (N=39).

Homebound: Greater Providence, RI (N=25), Greenfield, MA (N=8), Agawam, MA (N=1), and six towns in Hampshire County, MA (N=11).

Tables C1 through C5 in Appendix C compare the demographic statistics of the populations with the samples collected from each of these areas. The following is a brief summary of those statistics.

Age

The community active sample mean ages were similar to the mean ages of the general elderly population mean ages in each geographical area (mean age ranging from 68.1 to 74.0 years old)[1]. In Garden City and Longmeadow/Agawam the sample means were about equal to those of the elderly populations in those towns. The Hampshire County sample was about four years above the elderly population mean of that area while the Greenfield sample mean age was four years below the population mean in that town. Not surprisingly, the mean age of the homebound sample was considerably higher than the elderly population mean age (mean age for the

homebound sample ranging from 74.8 to 78.6 years old). Both the Greenfield and Rhode Island homebound samples were seven years above the elderly population means of those areas while the Hampshire County homebound sample was five years above the mean age of the elderly in that area. The mean age of the homebound subjects not included in the sample was 81.7 years while the mean age of the community active subjects not included in the sample was 69.8 years.

Sex

The percentage of women found in the two samples was considerably larger than that of the general elderly population. The percent of women in both the community active and homebound samples ranged from 75% to 90% versus an average of about 60% women among the elderly populations of each of the areas. The percentage of women in the group of subjects not included in this study was 67% for the homebound subjects and 65% for the community active subjects.

Marital Status

The percent of married individuals in the elderly population was about 50% in the areas encompassed by this study. The community active sample evidenced considerable variation in the percent of married persons (by area), with only 11% married in the Greenfield sample, 23% married in the Hampshire County sample, 57% in the Garden City sample, and a high of 75% in the Longmeadow/Agawam sample. Conversely, the homebound sample included relatively few married individuals, ranging from only 11% to 18% married in the samples taken from Greenfield, Hampshire County,

and Rhode Island. Among those subjects not included in this study, 17% of the homebound group were married while 47% of the community active group were married.

Income

Individuals in both samples reported generally poor financial status. The entire homebound sample reported making under ten thousand dollars yearly (compared to 75% of the elderly population in Rhode Island, 27% of the elderly population in Hampshire County, and 35% of the elderly population in Greenfield whose annual income was under ten thousand dollars). The entire community active sample from Greenfield and Hampshire County also reported making less than ten thousand dollars yearly, although many respondents from Hampshire County chose not to answer any questions on financial status. Conversely, Longmeadow/Agawam participants indicated that only 50% of their sample made under ten thousand dollars a year (compared to 21% of the elderly population of the two towns). Garden City residents were not asked about financial status. Among those subjects not included in this study, 100% of the homebound group made less than ten thousand dollars annually. Fifty-four percent of the excluded community active group failed to provide information on financial status while 45% of the remaining community active subjects reported incomes of under ten thousand dollars annually.

Race

The elderly population of the areas encompassing this study consisted

of 98% to 99% caucasion individuals and the samples from these areas generally reflected this (although racial data were not available for the Garden City sample). One exception was the Rhode Island sample which was about 78% caucasion, 15% black, and 7% other minorities. Among the group of subjects excluded from this study, both the homebound and community active subjects were 100% caucasion.

Living Arrangement

In the wealthier communities of Garden City and Longmeadow/Agawam, only 25% to 36% of the community active sample consisted of individuals who lived alone. This was similar to the living pattern of the elderly population in the areas encompassed by this study, where about 20% to 25% of the elderly live alone. Conversely, community active samples from Greenfield and Hampshire County ranged from 69% to 78% living alone. The homebound sample also had an extremely large portion of its individuals living alone, ranging from 82% to 88% for those from Greenfield, Hampshire County, and Rhode Island. Of those subjects excluded from this study, 67% of the homebound subjects lived alone while 41% of community active subjects lived by themselves.

Summary

In summary, both the community active and homebound sample were somewhat unrepresentative of the general elderly population of their areas. The community active sample was similar in age to the general elderly population, while the homebound group was considerably older (No data was available to compare the homebound sample with the homebound

population of each of the areas). Both samples consisted of considerably fewer men than was expected and considerably fewer married individuals. The samples matched the general population by consisting of mostly caucasion individuals, but as a whole, the samples reported a much lower income level than the general elderly population of the areas encompassed by this study. Finally, considerably more individuals in the two samples lived alone than is typically found among the elderly population. Appendix C contains a specific breakdown by area, demographic variable, and sample.

Hypotheses

Hypothesis 1

"Given the relatively poor health status and more limited access to sources of social support, the homebound group will have more health complaints and a lower level of actual and perceived social support."

Table 1 reports the means and standard deviations by group for demographic information, social support measures, and health measures. The two groups differed significantly on many of the variables. For example, the two groups differed significantly in age, with the homebound group being considerably older. The homebound group, as expected, was also significantly less physically and psychologically healthy. This was the case for all four physical health measures and three out of the four psychological health measures (interpersonal sensitivity being the single exception). Additionally, the homebound group had significantly fewer married subjects and significantly poorer perceptions of available social

Table 1: Comparison between community active and homebound

	Community Active		Homebound			
Demographic Measures:						
Sex	Female 53	Male 17	Female 41	Male 6	F-Test F(1,108)=1.81,	Signif. NS
Age	Mean 71.57	SD 6.54	Mean 77.40	SD 7.75	F(1,108)=14.7,	p<.001
Social Support Measures:						
Marital Status	Married 25	Unmarr. 45	Married 6	Unmarr. 41	F(1,108)=6.12,	p<.05
	Mean	SD	Mean	SD		
Perception of Social Support	5.19	1.08	4.60	1.35	F(1,108)=5.22,	p<.05
Number of Contacts	6.09	4.10	8.04	7.42	F(1,108)=2.57	NS
Frequency of Contacts	51.74	48.53	60.07	60.81	F(1,108)=0.51	NS
Health Measures:						
Perceived Illness	2.83	.92	1.79	.95	F(1,108)=32.7,	p<.001
Chronic Illness	1.24	.18	1.41	.15	F(1,108)=21.9,	p<.001
Minor Complaints	1.70	.42	2.09	.57	F(1,108)=13.6,	p<.001
Functional Problems	1.77	.24	1.24	.27	F(1,108)=98.3,	p<.001
Depression	4.57	.49	4.12	.69	F(1,108)=13.2,	p<.001
Anxiety	4.64	.55	4.34	.65	F(1,108)=5.69,	p<.05
Interpersonal	4.59	.56	4.59	.48	F(1,108)=0.00,	NS
SCL-90	4.58	.43	4.32	.46	F(1,108)=7.44,	p<.01

support. However, there were no differences in the number or frequency of monthly contacts between the two groups, although as has been previously discussed, these two variables have a different meaning for members of the two groups.

Given that the two groups differed significantly by age, a second set of analyses was conducted in which the effects of this variable were controlled via a partial correlation. However, no significant changes in the results were noted. Therefore, even when age differences between the two groups were taken into account, the homebound sample was significantly more unhealthy and had significantly poorer perceptions of available social support.

Conclusion: Hypothesis 1 is found to be true with the exception of objective measures of social support (number and frequency of contacts) and interpersonal sensitivity.

Hypothesis 2

Measures of objective and subjective social support will be significantly correlated as will be measures of chronic illness, minor health complaints, and psychological health for both samples.[2]

Tables 2-5 summarize the intercorrelations among health variables and among social support variables for both groups. Table 2 summarizes the intercorrelations for the social support variables among the community active group[3]. As was expected, number and frequency of contacts were significantly correlated with each other ($r=.66$, $p<.001$). Also, perception of social support was correlated with both number of contacts ($r=.44$, $p<.001$) and frequency of contacts ($r=.47$, $p<.001$). Marital

status was not significantly correlated with number of contacts or perception of social support but was significantly correlated with frequency of contacts ($r=-.24$, $p<.05$). Unmarried individuals tended to have more frequent social contacts.

Table 2: Intercorrelations among social support measures: Community Active

	1	2	3	4
1. Number of Contacts (N=70)		.66[c]	.03	.44[c]
2. Frequency of Contacts (N=70)			-.24[a]	.47[c]
3. Marital Status (N=70)*				-.03
4. Perception of Social Support (N=70)				

[a]p<0.05; [b]p<0.01; [c]p<0.001
*single=0, married=1

Table 3 summarizes the intercorrelations among the health measures for the community active group. The psychological health variables were significantly correlated with one another, with correlation coefficients ranging from .84 ($p<.001$) to .94 ($p<.001$). However, physical health variables, while significantly correlated with one another, had somewhat lower correlation coefficients. Perceived illness was significantly positively correlated with chronic illness ($r=.34$, $p<.01$) and minor health complaints ($r=.37$, $p<.01$). However, perceived illness was not significantly correlated with functional health problems. Chronic illness was significantly positively correlated with minor health complaints ($r=.52$, $p<.001$) and functional health problems ($r=.40$, $p<.001$). Minor health

complaints and functional health problems were significantly positively correlated as well (r=.29, p<.01).

Table 3: Intercorrelations among health measures: Community Active

	1	2	3	4	5	6	7	8
1. Perceived Illness (N=70)		.34[b]	.37[c]	.18	.30[b]	.16	.27[a]	.29[b]
2. Chronic Illness (N=70)			.52[c]	.40[c]	.58[c]	.60[c]	.53	.64[c]
3. Minor Complaints (N=70)				.29[b]	.70[c]	.68[c]	.67[c]	.79[c]
4. Functional Problems (N=70)					.21[a]	.25[a]	.17	.26[a]
5. Depression (N=66)						.84[c]	.83[c]	.94[c]
6. Anxiety (N=66)							.90[c]	.94[c]
7. Interpersonal (N=66)								.91[c]
8. SCL-90 (N=66)								

[a]p<0.05: [b]p<0.01: [c]p<0.001

The relationship between physical and psychological health factors was somewhat variable. Minor health complaints were significantly positively correlated with all psychological health measures (with correlation coefficients ranging from .67 to .79, p<.001), which was to be expected given that many of the items overlap. Chronic illness was also significantly positively correlated with the four psychological factors (with correlation coefficients ranging from .53 to .64, p<.001). While perceived illness was not significantly correlated with anxiety, it was significantly positively correlated with depression, interpersonal sensitivity, and total SCL-90 score (with correlation coefficients ranging

from .27 to .30, p<.05). Finally, functional health problems was not significantly correlated with interpersonal sensitivity, but was significantly postively correlated with the remaining psychological health variables (with correlation coefficients ranging from .21 to .26, p<.05).

Table 4 reports the intercorrelations among the social support measures for the homebound group. As was expected, number and frequency of contacts was highly correlated (r=.72, p<.001). Perceptions of social support was significantly positively correlated with number of contacts (r=.30, p<.05) and frequency of contacts (r=.32, p<.05), but marital status was not significantly correlated with any of the other social support measures.

Table 4: Intercorrelations Among Social Support Measures: Homebound

	1	2	3	4
1. Number of Contacts (N=46)		.72[c]	.30[a]	.30[a]
2. Frequency of Contacts (N=46)			-.12	.32[a]
3. Marital Status (N=47)*				-.21
4. Perception of Social Support (N=47)				

[a]p<.05: [b]p<.01:[c]p<.001
*single=0, married=1

Table 5 summarizes the intercorrelations among the health measures for the homebound group. Intercorrelations among measures of psychological health were significant (ranging from r=.38, p<.05 to r=.89, p<.001), but the correlation coefficients were not as large as those of the community active group. Perceived illness was significantly positively

correlated with both chronic illness ($r=.53$, $p<.001$) and minor health complaints ($r=.48$, $p<.001$), and chronic illness and minor health complaints were also significantly positively correlated ($r=.70$, $p<.001$). The size of these correlation coefficients was considerably larger than that of the community active group. Correlations between functional health problems and other physical health measures were significant and similar in size to those of the community active group. A significant positive association between functional health problems and chronic illness ($r=.37$, $p<.01$) was also observed. Finally, there was no significant relationship between functional health problems and perceived illness nor between functional health problems and minor health complaints

Intercorrelations between physical and psychological measures for the homebound group, as for the community active group, were quite variable. The groups exhibited similar significant positive correlations between measures of psychological health and chronic illness/minor health complaints (ranging from an r of .40 to an r of .89). Again, minor health complaints was significantly correlated with measures of depression, anxiety, and the total SCL-90 score (ranging from an r of .77 to an r of .89), due to the high degree of overlap across items. For the homebound group, perceived illness was significantly correlated with interpersonal sensitivity and total SCL-90 score, but was not significantly associated with depression. However, unlike the community active group, there was a significant correlation between perceived illness and anxiety. Finally, functional health problems was significantly correlated with depression and total SCL-90 score, but was not significantly associated with anxiety or interpersonal sensitivity.

Table 5: Intercorrelations Among Health Measures: Homebound

	1	2	3	4	5	6	7	8
1. Perceived Illness (N=47)		.53[c]	.48[c]	.22	.21	.38[b]	.28[a]	.43[b]
2. Chronic Illness (N=47)			.70[c]	.37[b]	.56[c]	.60[c]	.40[b]	.76[c]
3. Minor Complaints (N=47)				.24	.77[c]	.81[c]	.43[b]	.89[c]
4. Functional Problems (N=47)					.30[a]	.05	.25	.28[a]
5. Depression (N=45)						.68[c]	.57[c]	.89[c]
6. Anxiety (N=45)							.38[b]	.83[c]
7.Interpersonal (N=45)								.58[c]
8. SCL-90 (N=45)								

[a]$p<.05$: [b]$p<.01$: [c]$p<.001$

In summary, intercorrelations among social support measures were similar for both groups. Both number and frequency of contacts were significantly correlated with perceptions of social support. Marital status, in general, was not significantly correlated with the other social support measures. Intercorrelations among psychological health measures were significant for both groups, with particularly large correlation coefficients for the community active. There was considerable variability among the intercorrelations of physical health measures for both groups, with correlation coefficients generally smaller than the intercorrelations among psychological health measures. Neither perceived illness nor functional health problems were consistently and significantly correlated with psychological health measures for both groups. Conversely, both chronic illness and minor health complaints

were significantly correlated with psychological health measures for the two groups. Yet, the significant relationship between minor health complaints and psychological health measures was due in large part to the overlap of items.

Conclusion: Hypothesis 2 is accepted for both groups with the following exceptions:

Community Active - no significant association between marital status and number of contacts or marital status and perception of social support; no significant association between perceived illness and functional health problems or perceived illness and anxiety; no significant association between functional health problems and interpersonal sensitivity.

Homebound - no significant association between marital status and frequency of contacts or marital status and perception of social support; no significant association between perceived illness and functional health problems or perceived illness and depression; no significant association between functional health problems and minor health complaints, functional health problems and anxiety, or functional health problems and interpersonal sensitivity.

Hypothesis 3

There will be a significant negative relationship between health status and social support for both groups in that high levels of social support will be associated with fewer reported health problems or better health.

Community Active Group: Table 6 presents the correlations among

social support and health measures for the community active group. Objective measures of social support (number of contacts, frequency of contacts, and marital status) evidenced only a few of significant relationships with health measures. These included a significant negative correlation between number of contacts and chronic illness ($r=.22$, $p<.05$) as well as significant negative correlations between marital status and perceived illness ($r=-.31$, $p<.01$) and marital status and functional health problems ($r=.-26$, $P<.05$). Therefore, individuals who had more chronic illnesses tended to see fewer people and married individuals had fewer perceived and functional health problems.

Table 6: Correlations Between Social Support and Health Measures: Community Active

Health Measures	Social Support Measures			
	Perception of Support	Number of Contacts	Frequency of Contacts	Marital Status*
Perceived Illness (N=70)	-.14	-.15	-.06	-.31[b]
Chronic Illness (N=70)	-.36[c]	-.22[a]	-.10	-.19
Minor Complaints (N=70)	-.17	.01	.06	-.05
Functional Problems (N=70)	-.18	-.19	.02	-.26[a]
Depression (N=66)	-.30[b]	-.02	-.04	-.12
Anxiety (N=66)	-.37[c]	-.08	-.09	-.04
Interpersonal (N=66)	-.38[c]	-.08	-.10	-.14
SCL-90 (N=66)	-.31[b]	-.04	-.07	-.08

*single=0; married=1
[a]p<.05: [b]p<.01: [c]p<.001

Perceived social support proved to be highly negatively correlated with the four psychological health measures, suggesting that high perceived support is associated with good psychological health. Given the rather high intercorrelations among the four psychological health measures for the community active group, it was not surprising that the correlation coefficients were quite similar (ranging from an r of -.30 to an r of -.38). Chronic illness proved to be the only physical health measure to be significantly correlated with perceived social support ($r=-.36$, $p<.001$), suggesting that individuals who are more chronically ill have lower perceived support. The majority of remaining correlations were all in the expected direction.

Table 7 summarizes the correlations between demographic measures (age and sex) and health measures for the community active group. The only significant findings were that the women in the sample had significantly more chronic illnesses than the men and that older individuals, especially men, had significantly more functional health problems. No significant age or sex differences were noted with psychological measures of health or minor health complaints.

Table 8 presents the correlations among demographic variables and social support measures for the community active group. As would be expected, age was negatively correlated with marital status, indicating that older individuals in the sample were less likely to be married. Age was not significantly correlated with any other social support variables. Sex, however, was significantly correlated with three of the four support variables. Women in the sample reported significantly higher perceptions

of social support than men; women reported significantly more frequent social contacts than men; men were more likely to be married.

Table 7: Correlations between demographic and health measures: Community Active

	Demographic Measures	
	Age	Sex*
Perceived Illness (N=69)	.07	-.15
Chronic Illness (N=70)	-.05	-.27[a]
Minor Complaints (N=70)	-.10	-.04
Functional Problems (N=70)	.37[c]	-.20[a]
Depression (N=69)	-.11	-.06
Anxiety (N=69)	-.17	-.04
Interpersonal (N=69)	-.13	-.04
SCL-90 (N=69)	-.16	-.08

*female=0, male=1
[a]p<.05: [b]p<.01: [c]p<.001

Table 8: Correlations between demographic and social support measures: Community Active

	Demographic Measures	
Social Support Measures	Age	Sex*
Perception of Social Support (N=70)	.15	-.21[a]
Number of Contacts (N=70)	-.04	-.05
Frequency of Contacts (N=70)	.12	-.21[a]
Marital Status (N=70)*	-.31[b]	.34[b]

*female=0, male=1; single=0, married=1
[a]p<.05: [b]p<.01:[c]p<.001

Given the number of significant correlations found between the demographic variables and health measures and the demographic variables and social support variables, additional correlational analyses were conducted in which the effects of age and sex were partialed out both singly and together. No significant changes in the subsequent correlation coefficients were noted.

Homebound: Table 9 presents the correlations among social support and health measures for the homebound group. None of the four physical health measures were significantly correlated with any of the social support measures. Among the measures of psychological health, depression was significantly negatively correlated with three of the four social support measures (perception of support, number of contacts, and frequency of contacts) and interpersonal sensitivity was significantly negatively correlated with two of the four measures (perception of support and frequency of contacts). The total SCL-90 score was significantly negatively correlated with perception of social support ($r=-.29$, $p<.05$); anxiety failed to show a significant correlation with any of the social support measures. While marital status was not significantly correlated with any of the health measures, the correlations between marital status and functional health problems ($r=.24$) and marital status and anxiety ($r=.25$) were at near significant levels. Interestingly, marriage for the homebound sample may tend to be associated with a significant increase in the rate of functional health problems and reported anxiety.

Table 9: Correlations between social support and health measures: Homebound

	Social Support Measures			
Health Measures	Perception of Support	Number of Contacts	Frequency of Contacts	Marital Status*
Perceived Illness (N=47)	.10	.18	.05	.12
Chronic Illness (N=47)	-.03	-.00	-.06	-.01
Minor Complaints (N=47)	-.01	-.01	-.04	.11
Functional Problems (N=47)	-.11	-.04	.21	.24
Depression (N=45)	-.37[b]	-.26[a]	-.26[a]	.21
Anxiety (N=45)	-.05	-.09	-.16	.25
Interpersonal (N=45)	-.40[b]	-.23	-.29[a]	.19
SCL-90 (N=45)	-.29[a]	-.18	-.23	.20

*single=0, married=1
[a]p<.05; [b]p<.01; [c]p<.001

Table 10 presents the correlations among demographic variables and health measures for the homebound group. Sex was not found to be significantly correlated with any of the eight health variables. However, age proved to be significantly negatively correlated with depression ($r=-.26$, $p<.05$), interpersonal sensitivity ($r=-.29$, $p<.05$), and total SCL-90 ($r=-.30$, $p<.05$). Additionally, as would be expected, older individuals in the sample were significantly more chronically ill.

Table 11 presents the correlations among demographic variables and social support measures for the homebound. Interestingly, older individuals in this group tended to have a higher perception of social support and, as with the community active group, the men in the sample

were more likely to be married. No other correlations were found to be significant.

As with the community active group, additional analyses were conducted in which the effects of age and sex were both singly and individually partialed out. No major changes were noted in the resulting correlation coefficients in comparison to those presented on Table 9.

Table 10: Correlations between demographic and health measures: Homebound

Health Measures	Demographic Measures	
	Age	Sex*
Perceived Health (N=47)	-.14	.12
Chronic Health (N=47)	-.30[a]	-.14
Minor Health (N=47)	-.21	-.23
Functional Health (N=47)	-.20	.07
Depression (N=45)	-.26[a]	-.16
Anxiety (N=45)	-.04	-.24
Interpersonal (N=45)	-.29[a]	-.22
SCL-90 (N=45)	-.30[a]	-.23

*female=0, male=1
[a]$p<.05$: [b]$p<.01$: [c]$p<.001$

Table 11: Correlations between demographic and social support measures: Homebound

Social Support Measures	Demographic Measures	
	Age	Sex*
Perception of Social Support (N=47)	.30[a]	-.07
Number of Contacts (N=47)	.22	-.11
Frequency of Contacts (N=47)	.21	.01
Marital Status (N=47)**	-.15	.43[c]

*female=0, male=1
**unmarried=0, married=1
[a]p<.05; [b]p<.01; [c]p<.001

In summary, a significant negative relationship between high levels of social support and poor physical and psychological health was not consistently found for either group. For the community active group, only perception of social support was significantly negatively correlated with many of the health measures; marital status was significantly negatively correlated with perceived illness and functional health problems only. Number and frequency of contacts showed essentially no significant relationship with health measures. For the homebound group, perception of support again was significantly negatively correlated with the highest number of health measures, but this was limited to psychological health variables alone. Physical health measures for the homebound group showed no significant relationship with any of the social support measures; neither was marital status significantly associated to with any of the health measures. Both number and frequency of contacts were

significantly negatively correlated with depression with frequency of contacts also significantly negatively correlated with interpersonal sensitivity for the homebound group.

Finally, a test of significance of the differences between the correlations obtained for the community active and homebound groups was conducted. Table 12 presents the results of that analysis. In statistically comparing the correlations between social support and health measures for the two samples, only two significant differences between correlations were obained (although there were a number of correlations which were close to significance). In the seven comparisons in which differences resulted in a P value of less than .10, the community active sample correlations were significantly larger and in the expected direction. Significant differences were obtained in comparing the correlations between perception of social support and chronic illness, perception of social support and anxiety, number of contacts and perceived illness, marital status and perceived illness, marital status and functional health problems, marital status and depression, and marital status and interpersonal sensitivity.

Conclusion: There was a generally consistent and significant negative relationship between perception of social support and psychological health measures for both groups. Correlations between objective measures of social support and health were not found. The negative association between social support and illness appeared to be significantly stronger for six correlations in the community active group. Therefore, hypothesis 3 is not supported for objective measures of social support and health but is supported for subjective measures of social support and psychological

health. There is some evidence to suggest that this relationship is stronger for the community active group.

Table 12: Tests of significance of the differences between community active and homebound social support/health correlations. *

Health Variables	Social Support Variables			
	Perception of Social Support	Number of Contacts	Frequency of Contacts	Marital Status
Perceived Illness	-.24	-.33[a]	-.11	-.43[b]
Chronic Illness	-.33[a]	-.22	-.04	-.18
Minor Complaints	-.16	.02	.10	-.16
Functional Problems	-.07	-.15	-.19	-.50[b]
Depression	.07	.24	.22	-.33[a]
Anxiety	-.32[a]	.01	.07	-.29
Interpersonal	.02	.15	.19	-.33[a]
SCL-90	-.02	.14	.16	-.28

*Numbers represent differences between the two correlations (Community Active - Homebound). Negative numbers indicate that the Community Active correlation was larger and/or in the expected direction. Positive numbers indicate that the Homebound correlation was larger and/or in the expected direction.

[a] $p<.10$; [b] $p<.05$

Hypothesis 4

Controlling for sex and age, there will be a greater association between health state and social support than between health state and group membership.

Tables 13 and 14 present the results of the regression analyses of social support and group membership on health status. Given the

previously discussed difference in the meaning of number and frequency of contacts for the two groups, it was felt that it would be difficult to justify including these two measures in analyses which combined both groups. Additionally, the lack of significant correlations between objective social support measures and health measures (see hypothesis 3) suggested that objective measures would add little to the predictability of the regression equations. Therefore, the following regression equation was used in each analysis:

$$H = b_0 + b_1 sex + b_2 age + b_3 Group + b_4 Percep + b_5 Mar$$

with H = one of eight health measures, sex = sex, age = age, group = group membership (community active versus homebound), percep = perception of social support, and mar = marital status.

In this and every multiple regression conducted in this paper, a step-wise or forward inclusion was utilized. In a step-wise inclusion, independent variables are entered in the regression equation only if they meet certain statistical criteria. The order of inclusion is determined by the respective contribution of each variable to the explained variance. In the present case, both sex and age were entered together with their order of entry determined by each's respective contribution to the variance explained. Once the two demographic variables were in the equation, another set of variables was subsequently entered in the same fashion. Some multiple regression analyses utilized in this paper involved the entry of up to three or four sets of variables, totaling as many as ten variables.

In all of the multiple regression tables, the numbers represent

standardized regression coefficients (unless otherwise indicated). Within each set of variables entered together in the regression equation, the relative size of the standardized regression coefficients will indicate the order of entry in the equation. While two standardized regression coefficients may be equal in size, it is possible that one may be significant (if only a couple of variables are entered in the equation) while the other is not (as a greater number of variables are included).

Table 13: Multiple regression of social support and group on physical health measures: Total Sample

Control Variables	Perceived Illness (N=116)	Chronic Illness (N=117)	Minor Complaints (N=117)	Functional Problems (N=117)
Demographics				
Sex	.01	-.21[b]	-.13	-.08
Age	-.06	-.14	-.15	.09[c]
Total R^2	.04	.07[a]	.03	.13[c]
Social Support & Group				
Group*	.46[c]	.39[c]	.39[c]	.64[c]
Perception of Social Support	-.03	-.22[a]	-.07	-.14
Marital Status	.17	-.10	.02	-.02
Total R^2	.26[c]	.31[c]	.17[c]	.55[c]
ΔR^2	.22	.24	.14	.42

In all multiple regression analyses, the demographic variables are entered together as step 1, the social support and group variables are entered together as step 2.
Number represent standardized regression coefficients.
*Community active was assigned a value of '0' while homebound was assigned a value of '1'.
[a]$p<.05$: [b]$p<.01$: [c]$p<.001$.

Table 13 summarizes the results of a series of regression analyses for the four physical health measures. In each case, group membership accounted for the largest portion of the explained variance. Additionally, age accounted for a significant amount of the variance explained for functional health problems and chronic illness. Perceptions of social support contributed significantly to the explained variance over and above demographic measures and group membership for chronic illness alone.

Table 14: Multiple regression of social support and group on psychological health measures: Total Sample

Control Variables	Depression (N=111)	Anxiety (N=111)	Interpersonal Sensitivity (N=111)	Total SCL-90 (N=111)
Demographics				
Sex	-.16	-.18	-.14	-.18
Age	-.14	-.06	-.16	-.19
Total R^2	.02	.02	.04	.04
Social Support & Group				
Group*	.32^c	.21	-.07	.26^b
Perception of Social Support	-.34^c	-.23^b	-.38^c	-.30^c
Marital Status	.01	.09	-.06	.02
Total R^2	.28^c	.14^b	.18^c	.23^c
ΔR^2	.26	.12	.14	.19

In all multiple regression analyses, the demographic variables are entered together as step 1, the social support and group variables are entered together as step 2.
Number represent standardized regression coefficients.
*Community active was assigned a value of '0' while homebound was assigned a value of '1'.
$^a p<.05$: $^b p<.01$: $^c p<.001$.

Table 14 summarizes the results of a series of regression analyses for the four psychological health measures. In each case, perception of social support accounted for the most significant portion of the explained variance. Only for measures of depression and total SCL-90 did group membership also add significantly to the explained variance over and above the contributions of demographic measures and social support.

In summary, differences in the homebound and community active groups on physical health measures were such that group membership alone accounted for the greatest portion of the explained variance. However, psychological health measures appeared to be more significantly associated with perceived social support than group membership.

Conclusion: Hypothesis 4 is not supported for physical health measures; hypothesis 4 is supported for psychological health measures.

Hypothesis 5

Perception of social support will be more strongly related to health status than objective measures of social support.

Tables 15-18 present the multiple regression analyses of social support indicators on health measures for both the homebound and community active groups. Data in which the two groups were analyzed separately have been presented. This was done for three reasons. First, group membership was highly significant in the multiple regression analyses conducted for physical health measures (see hypothesis 4). Second, there were significant differences between the two groups across many of the predictor and criterion variables (see hypothesis 1). Finally, the measures of number and frequency of contacts had a different meaning

for each group. Therefore, it was felt that it would be difficult to justify combining the two samples to conduct the analyses.

A series of multiple regression analyses were conducted to explore the relationship between the eight health measures, objective social support, and subjective social support. The following regression equation was used in each analysis:

$$H = b_0 + b_1 Sex + b_2 Age + b_3 Mar + b_4 NC + b_5 FC + b_6 P1 + b_7 P2 + b_8 P3 + b_9 P4$$

with H = one of eight health measures, Sex = sex, Age = age, Mar = marital status, NC = number of contacts, FC = frequency of contacts, P1 = perception of general support, P2 = perception of support from friends, P3 = perception of support from neighbors, and P4 = perception of support from family. Seperate analyses were conducted for each of the health measures for both groups.

A step-wise regression model was utilized in which demographic variables (sex and age) were first placed into the equation, followed by the three objective social support measures (number of contacts, frequency of contacts, and marital status), and finally, the perception of social support variables, broken into its four components (general support, support from friends, support from neighbors, and support from family).

Table 15 presents the results of the multiple regression analyses for the four physical health measures with the community active group.

Perceived Illness: With the inclusion of both demographic variables in the equation, neither accounted for a significant amount of the explained variance. Objective measures of social support were added next

Table 15: Multiple regression of support indicators on physical health measures: Community Active

Control Variables	Perceived Illness (N=69)	Chronic Illness (N=70)	Minor Complaints (N=70)	Functional Problems (N=70)
Demographics				
Sex	-.09	-.38[a]	-.10	-.22
Age	.04	-.07	-.09	.35[b]
Total R^2	.03	.08	.01	.16[b]
Objective				
Number of Contacts	-.06	-.16[a]	-.02	-.24
Frequency of Contacts	-.08	.16	.21	.22
Marital Status	-.31[a]	-.03	.02	-.04
Total R^2	.12	.15	.02	.21[a]
ΔR^2	.09	.07	.01	.05
Subjective				
General	.07	-.34[c]	-.29[a]	-.04
Friends	.05	-.20	.02	-.32[b]
Neighbors	-.26	-.05	-.11	-.02
Family	.00	.04	.04	*
Total R^2	.17	.33[b]	.10	.31[b]
ΔR^2	.05	.18	.08	.10

In all multiple regression analyses, demographic variables are entered together as step 1, frequency of contacts, number of contacts, and marital status entered together as step 2, and perception variables entered together as step 3. Numbers represent standardized regression coefficients.

*Tolerance<.001 (In SPSS, a low tolerance level means that the subprogram would have difficulty inverting a covariance matrix which included this variable. If this variable is used, large rounding errors might occur, leading to faulty estimates and inaccurate classifications.).

[a] $p<.05$: [b] $p<.01$: [c] $p<.001$.

with only marital status adding a significant amount to the explained variance over and above the demographic variables. However, the total R^2 for all five predictor variables combined was not significant. Finally, the four subjective measures were included in the equation, but added nothing of significance to the explained variance.

Chronic Illness: With the inclusion of both demographic variables into the equation, only sex was found to explain a significant amount of the variance. Taken together, the two demographic variables failed to account for a significant amount of the variance explained. Objective measures of social support were added next with only number of contacts adding significantly to the explained variance. Yet, the five variables taken together only produced a nonsignificant total R^2 of .15, with objective measures of social adding only 7% to the variance explained. Finally, the inclusion of subjective measures of social support added a significant 18% to the variance explained, resulting in a total R^2 of .33 ($p<.01$).

Minor Complaints: With the inclusion of sex and age into the regression equation, total R^2 was not significant. The subsequent addition of objective measures of social support added little to the variance explained. Finally, the inclusion of subjective measures of social support resulted in an increase of 8% in the explained variance (with perception of general support contributing significantly), but not enough to yield a significant total R^2. Functional Problems: With the inclusion of both demographic variables into the equation, only age was found to contribute significantly to the explained variance (Total R^2 = .16, $p<.01$). The subsequent addition of objective measures of social support added only 5% to the variance explained, with none of the individual variables being

statistically significant. Finally, the inclusion of subjective measures of social support provided an additional 10% to the explained variance (with perception of support from friends contributing significantly) for a total R^2 of .31 ($p<.01$).

Table 16 presents the results of the multiple regression analysis for the four psychological health measures for the community group.

Depression: With the inclusion of both demographic variables, no significant amount of the variance was explained. The addition of objective measures of social support also added little to the variance explained. However, with the final inclusion of subjective measures of social support, the variance explained was increased by 19% with two variables (perceived general support and perceived support from neighbors) contributing significantly. However, the total R^2 for the eight predictor variables combined in the regression equation remained below significance.

Anxiety: With the inclusion of both demographic measures, only 3% of the variance was explained. The addition of objective measures of social support also contributed little to the variance explained. Finally, the inclusion of subjective measures of social support resulted in an additional 20% to the explained variance with perceived general support contributing significantly. However, the combination of eight predictor variables again failed to reach statistical significance.

Interpersonal Sensitivity: Neither the inclusion of demographic variables or objective measures of social support accounted for a significant amount of the variance explained. The addition of subjective measures of social support again resulted in a considerable increase of

Table 16: Multiple regression of support indicators on psychological health Measures: Community Active

Control Variables	Depression (N=66)	Anxiety (N=66)	Interpersonal Sensitivity (N=66)	SCL-90 (N=66)
Demographics				
Sex	-.19	-.17	-.09	-.19
Age	-.05	-.11	-.13	-.12
Total R^2	.02	.03	.05	.03
Objective				
Number of Contacts	.10	.03	.10	.08
Frequency of Contacts	.03	.09	.00	.03
Marital Status	-.07	.00	-.12	-.04
Total R^2	.04	.05	.07	.16
ΔR^2	.02	.02	.03	.04
Subjective				
General	-.33[a]	-.34[b]	-.33[b]	.18
Friends	.08	-.02	.05	.02
Neighbors	-.34[b]	-.25	-.32[a]	-.24
Family	.10	.04	.02	.03
Total R^2	.23	.22	.25	.20
ΔR^2	.19	.17	.18	.04

In all multiple regression analyses, demographic variables are entered together as step 1, frequency of contacts, number of contacts, and marital status entered together as step 2, and perception variables entered together as step 3. Numbers represent standardized regression coefficients.
[a] $p<.05$: [b] $p<.01$: [c] $p<.001$.

18% to the explained variance with two variables (perceived general support and perceived support from neighbors) contributing significantly. The combination of eight variables in the regression equation, however, did not reach statistical significance.

SCL-90: Again, neither the inclusion of both demographic variables or objective measures of social support provided for a significant amount of the explained variance. The final addition of subjective measures of social support also failed to provide for a significant amount of the variance explained.

Table 17 presents the multiple regression analyses of social support indicators on physical health measures for the homebound group.

Perceived Illness: With the inclusion of both demographic variables (sex and age) in the regression equation, neither contributed significantly to the explained variance. The addition of objective measures of social support as well as subjective measures of social support failed to result in a significant percentage of variance explained.

Chronic Illness: The inclusion of the demographic variables in the regression resulted in age contributing significantly to the explained variance, although the total R^2 for both factors combined was not statistically significant. The subsequent addition of objective measures of social support added only 1% to the variance explained. The final inclusion of subjective measures of social support added 19% to the explained variance with two of the subjective factors (perceived general support and perceived support from neighbors) contributing significantly. Unexpectedly, perceived support from neighbors was in the positive direction, suggesting that increased chronic illness is associated with

Table 17: Multiple regression of support indicators on physical health measures: Homebound

Control Variables	Perceived Illness (N=47)	Chronic Illness (N=47)	Minor Complaints (N=47)	Functional Problems (N=47)
Demographics				
Sex	.15	-.09	-.22	-.09
Age	-.15	-.30[a]	-.24	-.08
Total R^2	.03	.11	.11	.04
Objective				
Number of Contacts	.43	.23	.12	-.24
Frequency of Contacts	-.26	-.20	-.07	.49
Marital Status	.12	.02	.19	.34
Total R^2	.10	.12	.15	.23
ΔR^2	.07	.01	.04	.19
Subjective				
General	-.26	-.43[a]	-.42	-.33[a]
Friends	.16	.07	.08	.22
Neighbors	.20	.30[a]	.12	.10
Family	*	.03	.24	-.22
Total R^2	.20	.31	.30	.36
ΔR^2	.10	.19	.15	.13

In all multiple regression analyses, demographic variables are entered together as step 1, frequency of contacts, number of contacts, and marital status entered together as step 2, and perception variables entered together as step 3. Numbers represent standardized regression coefficients.

*Tolerance <.001.

[a] = P<0.05; [b] = P<0.01; [c] = P<0.001.

greater perceived support from neighbors. The total R^2 (.31) for all nine variables combined was not statistically significant.

Minor Complaints: The inclusion of both demographic variables into the regression equation failed to contribute a significant amount of to the explained variance. The addition of both objective and subjective social support measures also failed to show any significant associations with minor health complaints and resulted in a nonsignificant, but relatively high R^2 of .30 for all nine variables combined.

Functional Problems: The inclusion of both demographic variables into the regression equation failed to account for a significant amount of the explained variance. The addition of the objective social support measures, while adding 19% to the variance explained, still failed to meet statistical significance. With the final inclusion of the subjective measures of social support, one variable proved to contribute a significant amount to explained variance, but along with the other eight variables, failed to meet significance with a total R^2 of .36.

Table 18 presents the multiple regression analyses for social support. indicators on psychological health measures for the homebound group.

Depression: The inclusion of both demographic and objective social support variables into the regression equation failed to account for a significant amount of explained variance with a total R^2 of .21 The subsequent addition of subjective measures of social support into the regression equation added 22% to the variance explained resulting in a significant total R^2 of .43 ($p<.05$).

Table 18: Multiple regression of support indicators on psychological health Measures: Homebound

Control Variables	Depression (N=45)	Anxiety (N=45)	Interpersonal Sensitivity (N=45)	SCL-90 (N=45)
Demographics				
Sex	-.18	-.32	-.28	-.29
Age	-.11	.00	-.15	-.18
Total R^2	.09	.06	.14[a]	.15[a]
Objective				
Number of Contacts	-.01	.10	.08	.11
Frequency of Contacts	-.10	-.20	-.19	-.18
Marital Status	.23	.38[b]	.24	.29[a]
Total R^2	.21	.22[a]	.26[a]	.25[a]
$\Delta R2$	.12	.16	.12	.12
Subjective				
General	-.54[c]	-.40	-.47[c]	-.54[c]
Friends	.12	.07	.04	.08
Neighbors	-.05	.13	*	.13
Family	.05	.18	-.02	*
Total R2	.43[a]	.36	.45[b]	.48[b]
$\Delta R2$	.22	.14	.19	.23

In all multiple regression analyses, demogaphic variables are entered together as step 1, frequency of contacts, number of contacts, and marital status entered together as step 2, and perception variables entered together as step 3. Numbers represent standardized regression coefficients.

* Tolerance < .001.

[a]p<.05: [b]p<.01: [c]p<.001.

Anxiety: The initial inclusion of sex and age into the regression equation did not result in a significant amount of variance explained. However, with the addition of objective measures of social support, only marital status was found to account for a significant percentage of the variance, resulting in a total R^2 of .22 ($p<.05$) for the five variables included. Unexpectedly, marriage was reported to be significantly associated with higher anxiety. The final inclusion ofsubjective measures of social support did not add significantly to the explained variance.

Interpersonal Sensitivity: While the inclusion of sex and age individually into the regression equation did not add significantly to the variance explained, together the two variables resulted in a significant R^2 of .14 ($p<.05$). Similarly, the addition of objective measures of social support did not result in any significant individual contributions to the explained variance, but continued to produce a significant R^2 of .26 ($p<.05$) for the five variables combined. Finally, the inclusion of subjective measures of social support into the regression equation accounted for an additional 19% of the variance explained with perceived general support contributing significantly. The total R^2 for the combined nine variables in the regression equation was .45 ($p<.01$).

SCL-90: As with social isolaton, the effects of both sex and age together accounted for a significant amount of the explained variance ($R^2=.15$, $p<.05$). Of the objective measures of social support entered next, only marital status added significantly to the explained variance. However, this was not in the expected direction, indicating that married individuals reported significantly more psychological problems. Finally, subjective measures of social support were included with perceived

general support again contributing significantly to the explained variance. This resulted in a total R^2 of .48 ($p<.01$) for the nine variables combined.

In summary, subjective measures of social support added significantly to the explained variance (after taking into account the effects of demographic variables and objective measures of social support) for seven of the eight measures of health with the community active population. The increase in percent of variance explained was much greater for the psychological health measures (ranging from 15% to 22%) than for the physical health measures (ranging from 5% to 18%). Despite this, the total R^2 for all nine variables combined was significant for only two of the health measures, both measures of physical health (chronic illness and functional health problems).

For the homebound population, subjective measures of social support added significantly to the variance explained (after taking into account the effects of demographic variables and objective measures of social support) for five of the eight health measures. Again, the increase in percent of variance explained was greater for the psychological health measures (ranging from 14% to 23%) than for the physical health measures (ranging from 10% to 19%). While the total R^2 for all nine variables combined was statistically significant for only three of the psychological health measures, the amount of variance explained was quite impressive for both physical health (with total R^2 ranging from .20 to .36) and psychological health (with total R^2 ranging from .36 to .48).

For the community active group, objective measures of social support added little of significance to the variance explained with only two exceptions (perceived illness and chronic illness). Similarly, the

homebound group evidenced no significant contribution to the explained variance by either number or frequency of contacts. However, marital status was significantly positively associated with anxiety and SCL-90, suggesting that married individuals in the sample reported increased psychological problems.

For the community active group, sex explained a significant amount of the variance for chronic illness (with women in the sample reporting more health problems), while age explained a significant amount of the variance for functional health problems (with older individuals reporting less functional independence). Similarly, sex and age taken separately failed to contribute significantly to the variance explained for the homebound group (with the exception of chronic illness, where older individuals actually tended to report fewer complaints). However, taken together, sex and age accounted for a significant percentage of the variance explained for both interpersonal sensitivity and SCL-90.

In general, it appeared that for both groups, number and frequency of contacts (objective measures of social support) accounted for little of the explained variance over and above the contributions of sex and age. Marriage actually appeared to be somewhat detrimental to homebound individuals (but not community active individuals), through being associated with increased levels of anxiety and overall poor psychological health. Finally, for both groups, subjective measures of social support accounted for a significant amount of the explained variance over and above demographic and objective social support measures for the majority of health measures.

Conclusion: Hypothesis 5 is supported.

Hypothesis 6

Perceived support from the family will be more important than that of friends or neighbors for the homebound group, while perceived social support from friends and neighbors will be more important for the community active group.

Tables 19 and 21 summarize the correlation coefficients for the four perceived social support factors with each of the eight health measures for both groups. In addition, tables 20 and 22 present the intercorrelations among the social support perception factors for both groups.

Table 19: Correlations between perception of social support and health measures: Community Active.

Health Measures	Perceptions of Social Support			
	General	Friends	Neighbors	Family
Perceived Illness (N=69)	-.07	-.06	-.19	-.09
Chronic Illness (N=70)	-.37[c]	-.31[b]	-.22[a]	-.19
Minor Complaints (N=70)	-.21[a]	-.11	-.16	-.02
Functional Problems (N=70)	-.15	-.23[a]	-.06	-.11
Depression (N=66)	-.31[b]	-.19	-.34[b]	-.00
Anxiety (N=66)	-.35[b]	-.27[a]	-.34[b]	-.08
Social Isolation (N=66)	-.37[a]	-.25[a]	-.37[c]	-.09
SCL-90 (N=66)	-.31[b]	-.21[a]	-.30[b]	-.06

[a]p<.05: [b]p<.01: [c]p<.001

Table 20: Intercorrelations among perceptions of social support factors: Community Active (N=70).

	1	2	3	4
1. General		.54[c]	.39[c]	.28[b]
2. Friends			.57[c]	.21[a]
3. Neighbors				.16
4. Family				

[a]p<.05: [b]p<.01: [c]p<.001

There were some clear differences between the groups in terms of the relationship between health variables and each of the perceived social support factors. Table 21 indicates that for the homebound group, general support was significantly correlated with health measures. There was also a significant correlation between interpersonal sensitivity and perceived support from neighbors. In fact, for seven of the eight health measures, high perceived general social support was significantly negatively correlated with poor physical and psychological health. Similarly, on the multiple regression analyses (Tables 17 and 18), perceived general support consistently accounted for a greater percentage of the explained variance than the other three perception measures. Clearly, perceived general support was consistently associated with health measures while perceived support from friends, neighbors, and family had no specific association with health other than what each

contributed to general support. Table 22 indicates that general support was about equally correlated with each of the other perceived support measures. General support also had the highest mean score, based upon a seven point scale.

Table 19 indicates that with the exception of perceived family support, perceptions of social support for the community active group were significantly correlated with many of the health measures, especially psychological health variables and chronic illness. Unlike the homebound group, perceived support of both friends and neighbors (in addition to general support) was considerably more important for community active individuals.

Table 21: Correlations between perception of social support and health measures: Homebound.

Health Measures	Perceptions of Social Support			
	General	Friends	Neighbors	Family
Perceived Illness (47)	-.10	.13	.18	.02
Chronic Illness (47)	-.35[b]	.10	.13	-.07
Minor Complaints (47)	-.32[a]	.08	.05	.12
Functional Problems (47)	-.33[a]	.02	.06	-.19
Depression (45)	-.58[c]	-.15	-.24	-.19
Anxiety (45)	-.33[a]	.00	.01	.15
Interpersonal (45)	-.56[c]	-.18	-.27[a]	-.22
SCL-90 (45)	-.56[c]	-.09	-.13	-.16

[a] $p<.05$: [b] $p<.01$: [c] $p<.001$

Table 22: Means standard deviations, and intercorrelations among perceptions of social support factors: Homebound (N=47).

	1	2	3	4
1. General		.36[b]	.31[a]	.41[b]
2. Friends			.54[c]	.41[b]
3. Neighbors				.44[c]
4. Family				

[a]p<.05: [b]p<.01: [c]p<.001

Intercorrelations among regression analyses (Tables 15 and 16) indicated that general support continued to consistently account for a significant amount of the explained variance with support from friends and neighbors also contributing significantly in some of the analyses. Perceived family support failed to add any significant amount to the the variance explained in this case and also was less strongly correlated with the other perception measures (see Table 22). Finally, family support had the smallest mean in comparison to the other perceived support measures. Consequently, the community active group perceived more social support from friends and neighbors than homebound individuals, with family support perceived as less available (or possibly not needed).

Table 23 presents the results of statistically testing the hypothesis that perceived family support is most strongly associated with good health for the homebound group. The table indicates the differences between the correlations of perceived family support and health with the correlations of perceived general support and health, perceived support

from friends and health, as well as perceived support from neighbors and health. The results indicated no significant differences between the perceived support/health correlations for family, friends, and neighbors. However, significant differences between family support and health correlations and general support and health correlations were observed for five of the eight health measures. In each case the correlation between health and perceived general support was significantly larger and in the expected direction in comparison to the correlation between health and perceived family support.

Table 23: Tests of significance of the difference between perceived support & health correlations: Homebound*

Health Measures	$r_{family/health}$ and:		
	$r_{general/health}$	$r_{friends/health}$	$r_{neighbors/health}$
Perceived Illness (N=47)	.12	-.11	-.16
Chronic Illness (n=47)	.28	-.17	-.20
Minor Complaints (N=47)	.44[a]	.04	.07
Functional Problems (N=47)	.14	-.21	-.24
Depression (N=45)	.39[a]	-.04	.05
Anxiety (N=45)	.48[a]	.15	.14
Interpersonal (N=45)	.34[a]	-.04	.05
SCL-90 (N=45)	.40[a]	-.07	-.03

*All numbers represent differences between correlations. Negative values indicate that the family/health correlation is larger and/or in the expected direction. Positive values indicated that the general/health, friends/health, or neighbors/health correlations are larger and/or in the expected direction.

[a] $p < .05$

Table 24: Tests of significance of the difference between perceived support & health correlations: Community active*

Health Measures	$r_{friends/health}$ and:		$r_{neighbors/health}$ and:	
	$r_{general/health}$	$r_{family/health}$	$r_{general/health}$	$r_{family/health}$
Perceived Illness (N=69)	.01	.03	-.12	-.10
Chronic Illness (N=70)	.06	-.12	.15	-.03
Minor Complaints (N=70)	.10	-.09	.05	-.14
Functional Problems (N=70)	-.08	-.12	.09	.05
Depression (N=66)	.12	-.19	-.03	-.34[b]
Anxiety (N=66)	.08	-.19	.01	-.26
Interpersonal (N=66)	.12	-.16	.00	-.28[a]
SCL-90 (N=66)	.10	-.15	.01	-.24

*All numbers represent differences between correlations. Negative values indicate that the friend/health or neighbor/health correlations are larger and/or in the expected direction. Positive values indicate that the general/health or family/health correlations are larger and/or in the expected direction.
[a] $p<.10$: [b] $p<.05$

Table 24 presents the results of statistically testing the hypothesis that perceived support from friends and neighbors is most strongly associated with good health for the community active group. The table indicates the differences between the following correlations: a) perceived support from friends and health with perceived general support and health, b) perceived support from friends and health with perceived support from family and health, c) perceived support from neighbors and health with perceived general support and health, and d) perceived support from neighbors and health with perceived support from family and health. On

only two statistical comparisons were P values of less than .10 observed. Both were between neighbor/health correlations and family/health correlations with the former being significantly larger and in the expected direction.

Conclusion: 1) The hypothesis that increased levels of family support will be most strongly associated with good health for the homebound group is not supported. 2) The hypothesis that perceived support from friends and neighbors will be most strongly associated with good health for the community active group is supported for about one half of the health measures.

Hypothesis 7

Minor health complaints and psychological health measures will have a greater amount of their variance explained by social support measures than other physical health measures for both groups.

For both groups, it has generally been the case that social support measures have been more significantly correlated with psychological health measures than physical health measures. However, of the physical health measures, only chronic illness has actually demonstrated a relatively strong association with social support measures for both groups. This can be observed on Tables 6 and 9 which present the correlations between social support and health measures for both groups. For the community active group (Table 6), the results were somewhat variable. Perception of social support was significantly correlated with all four psychological health measures and chronic illness. Number of contacts was significantly correlated with only chronic illness; frequency

of contacts failed to be signficantly associated with any of the health variables. Finally, marital status was significantly associated with two of the physical health measures, perceived illness and functional health problems. The results for the homebound were more clearcut (see Table 9). Only psychological health measures were found to correlate significantly with any of the measures of social support, suggesting that for this group, psychological health measures (with the exception of minor health complaints) were more strongly associated with level of social support than other physical health measures.

Conclusion: Hypothesis 7 is supported for the homebound group, with the exception of minor health complaints. For the community active group, the hypothesis is not supported, especially given the relatively large number of significant correlations between measures of social support and physical health variables.

Hypothesis 8

The relationship between social support and health will be stronger for the homebound group than for the community active group.

According to Tables 6 and 9, there was little evidence to indicate any major differences between the two groups regarding the strength of the relationship of social support and health. In fact, it might be argued that the community active actually exhibited the stronger relationship. According to Table 6, the community active group had at least one significant correlation between health measures and social support measures for seven of the eight health variables. These correlations included both physical and psychological health measures with perception

of support and marital status being the most predictive social support variables. Conversely, the homebound group (see Table 9) exhibited significant correlations between measures of social support and only three of the health variables (all three were measures of psychological health). Marital status failed to be signficantly correlated with any of the health measures; perception of support and frequency of contacts proved to be the most predictive social support variables.

Conclusion: There is little evidence to support the hypothesis that the relationship between social support and health is stronger for the homebound group.

Hypothesis 9

There will be a positive correlation between stress measures and health measures for both groups (i.e. high stress will be related to poor health) for both groups. There will be a negative correlation between stress measures and social support measures for both groups (i.e. high stress will be related to lower social support).

Tables 25 through 29 describe the correlations between stress, demographics, health, and social support variables. Table 25 presents the correlations between the Worry Scale and demographic variables. The only significant correlations were found between age and stress measures for the homebound. Interestingly, age was shown to be significantly inversely correlated with the level of stress in three of the four stress variables for this group.

Table 25: Correlation between Worry Scale[1] and Demographics

Worry Scale	Demographic Measures Community Active (N=54) Age	 Sex*	 Homebound (N=44) Age	 Sex*
Worry Scale Total	-.02	-.17	-.27[a]	-.17
Financial Worries	.06	-.17	-.37[b]	-.20
Health Worries	.01	-.18	-.18	-.15
Social Worries	-.09	-.09	-.26[a]	-.12

[1]Low values on the scale indicate fewer worries and lower stress levels.
*female=0, male=1
[a]p<.05: [b]p<.01: [c]p<.001

Table 26: Correlations between Worry Scale and Health Measures: Community Active (N=54)

Health Measures	Worry Scale Measures Financial Worries	 Health Worries	 Social Worries	 Total Worries
Perceived Illness	.08	.24[a]	.23[a]	.24[a]
Chronic Illness	.44[c]	.26[a]	.21	.29[a]
Minor Complaints	.29[a]	.26[a]	.21	.29[a]
Functional Problems	.41[c]	.25[a]	.12	.24[a]
Depression	.27[a]	.49[c]	.46[c]	.50[c]
Anxiety	.25[a]	.51[c]	.54[c]	.54[c]
Interpersonal	.23[a]	.65[c]	.70[c]	.68[c]
SCL-90	.29[a]	.62[c]	.62[c]	.64[c]

[a]p<.05: [b]p<.01: [c]p<.001

Table 26 presents the correlations between the Worry Scale and health measures for the community active group. Signficant results were found with 28 of the 32 correlations (all positive correlations), with the largest correlation coefficients being exhibited between health, social, and total worries and the four psychological health variables (ranging from .46 to .70). Conversely, only one significant (negative) correlation was found between stress measures and social support for the community active group (see Table 27).

Table 27: Correlations between Worry Scale and Social Support Measures: Community Active (N=54)

	Worry Scale Measures			
Social Support Measures	Financial Worries	Health Worries	Social Worries	Total Worries
Number of Contacts	-.02	.02	-.11	-.03
Frequency of Contacts	.04	.02	-.12	-.03
Marital Status	-.18	-.15	-.08	-.13
Perception of Social Support	-.16	-.01	-.16	-.09
Percep. of General Support	-.19	-.12	-.24[a]	-.19
Percep. of Friend Support	-.12	.09	.03	.05
Percep. of Neighbor Support	-.05	.05	-.11	-.03
Percep. of Family Support	-.14	-.10	-.15	-.14

[a]p<.05: [b]p<.01: [c]p<.001

Table 28 presents the correlations between the Worry Scale and health measures for the homebound group. As with the community active group, stress measures were signficantly positively associated with health measures for the majority of correlations (28 out of 32 correlations). However, unlike the community active group, the larger correlation coefficients seemed to be well distributed, with chronic illness and minor health complaints as well as some psychological health measures having r's in the .70 range. The correlations between the Worry Scale and social support for the homebound group (Table 29) did show a number of significant negative correlations. Two clear patterns seemed to emerge; perception of general support was significantly negatively correlated with all four Worry Scale factors and social worries were significantly negatively correlated with number and frequency of contacts (suggesting that actual social contact may tend to decrease social concerns or that individuals who report a high rate of worrying may tend to sustain fewer contacts). Total perceptions of social support and general social support were also significantly negatively correlated with social worries. Finally, both health and social worries were significantly correlated with marital status, indicating that, at least for this sample, married individuals reported more concerns in these two areas.

In summary, stress (as measured by the Worry Scale) was significantly positively correlated with the majority of measures of physical and psychological health. This was the case for both community active and homebound groups. Conversely, stress was not significantly correlated with measures of social support for the community active sample. While this was somewhat true for the homebound group as well,

significant negative correlations were observed between perceived general support and social worries as well as between social worries and number/frequency of contacts. Marriage was found to be significantly positively associated with increased health and social concerns.

Conclusion: The first part of hypothesis 9 is supported; the second part is unsupported for the community active sample, with only weak support for the homebound sample.

Table 28: Correlations between Worry Scale and Health Measures: Homebound

	Worry Scale Measures			
Health Measures	Financial Worries	Health Worries	Social Worries	Total Worries
Perceived Illness (N=44)	.18	.32[a]	.24	.31[a]
Chronic Illness (N=44)	.49[c]	.68[c]	.44[c]	.65[c]
Minor Complaints (N=44)	.46[c]	.77[c]	.60[c]	.75[c]
Functional Problems (N=44)	.24	.43[b]	.28[a]	.40[b]
Depression (N=43)	.44[c]	.71[c]	.54[c]	.78[c]
Anxiety (N=43)	.24	.65[c]	.54[c]	.63[c]
Interpersonal (N=43)	.48[c]	.59[c]	.73[c]	.70[c]
SCL-90 (N=43)	.47[c]	.75[c]	.69[c]	.78[c]

[a] $p<.05$; [b] $p<.01$; [c] $p<.001$

Table 29: Correlations between Worry Scale and Social Support Measures: Homebound

	Worry Scale Measures			
Health Measures	Financial Worries	Health Worries	Social Worries	Total Worries
Number of Contacts (N=43)	.03	-.15	-.27[a]	-.18
Frequency of Contacts (N=43)	.07	-.16	-.28[a]	-.19
Marital Status (N=43)	-.20	.31[a]	.36[b]	-.19
Perception of Social Support (N=44)	-.14	-.12	-.34[a]	-.22
General Support (N=44)	-.38[b]	-.42[b]	-.52[c]	-.51[c]
Friend Support (N=44)	-.02	-.02	-.20	-.08
Neighbor Support (N=44)	.02	-.00	-.24	-.08
Family Support (N=44)	-.14	.04	-.08	-.03

[a] $p<.05$: [b] $p<.01$: [c] $p<.001$

Hypothesis 10

Controlling for sex, age and stress, there will be a significant negative relationship between social support and health for both groups (i.e. low social support will be related to poor health).

A series of mutliple regression analyses were conducted to explore the relationships among the eight health variables, stress, objective social support, and subjective social support. The following regression equation was used in each of the analyses:

$$H=b_0 + b_1 sex + b_2 age + b_3 stress + b_4 mar + b_5 NC + b_6 FC + b_7 P1 + b_8 P2 + b_9 P3 + b_{10} P4$$

with H = one of eight health measures, sex = sex, age = age, stress = stress, mar = marital status, NC = number of contacts, FC = frequency of contacts, P1 = perception of general support, P2 = perception of support from friends, P3 = perception of support from neighbors, and P4 = perception of support from family.

Table 30 presents the multiple regression analyses for stress and social support on physical health for the community active group. With the exception of functional health problems (where older individuals tend to have more functional needs), neither the inclusion of age or sex into the regression equation accounted for a signficant amount of the variance explained. Interestingly, stress added significantly to the variance explained only in the case of minor health complaints, despite stress being significantly correlated with all four physical health measures (see Table 26). The addition of objective social support measures into the regression equation also failed to contribute significantly to the explained variance of any of the criterion variables. Finally, the inclusion of subjective measures of social support resulted in general perceptions contributing significantly to the explained variance of chronic illness and perceived support of friends contributing significantly to the explained variance of functional health problems. For both chronic illness and functional health problems, the total R^2s for all ten variables entered into the regression equations were significant (R^2=.36, $p<.05$ for both health variables).

Table 30: Multiple regression of stress & support measures on physical health: Community Active

Control Variables	Perceived Illness (N=54)	Chronic Illness (N=54)	Minor Complaints (N=54)	Functional Problems (N=54)
Demographics				
Sex	-.05	-.34	-.02	-.17
Age	.05	-.06	-.07	.36[b]
Total R^2	.02	.08	.01	.16[a]
Stress Measurement				
Worry Scale	.21	.19	.46[c]	.25
Total R^2	.07	.14	.23[b]	.21[b]
ΔR^2	.05	.06	.22	.05
Objective				
Number of Contacts	.05	.02	-.03	.02
Frequency of Contacts	-.07	.17	.24	.24
Marital Status	-.30	-.02	.05	-.03
Total R^2	.16	.20	.24[a]	.26[a]
ΔR^2	.09	.06	.02	.05
Subjective				
General	.13	-.29[b]	-.15	.04
Friends	*	-.24	-.09	-.38[a]
Neighbors	-.25	-.04	-.09	*
Family	.02	.03	.08	.08
Total R^2	.20	.36[a]	.29	.36[a]
ΔR^2	.04	.16	.05	.10

In all multiple regression analyses, demographic variables are entered together as step 1, stress as step 2, marital status, frequency and number of contacts entered together as step 3, and perception variables entered together as step 4. Numbers represent standardized regression coefficients.

*Tolerance<.001

[a] $p<.05$: [b] $p<.01$: [c] $p<.001$

Table 31 presents the multiple regression analyses of stress and social support on psychological health measures for the community active group. With the inclusion of both demographic variables into the regression equation, neither accounted for a significant amount of the explained variance. The subsequent addition of stress into the equation resulted in a significant increase in the variance explained for all four psychological health variables (with total R^2s ranging from .26 to .50). The inclusion of objective measures of social support contributed nothing of significance to the explained variance for any of the criterion variables. Finally, the addition of subjective measures of social support in the regression equation resulted in a significant increase of the variance explained for all four criterion variables. Interestingly, perception of support from neighbors accounted for the entire increase in the explained variance in each case.

Table 32 reports the results of multiple regression analyses of stress and social support on physical health for the homebound group. As with the community active group, demographic variables failed to account for a significant amount of the explained variance when entered into the regression equation. However, the subsequent addition of stress into the equation resulted in a significant increase in the variance explained for all four criterion variables. The inclusion of objective measures of social support again failed to add significantly to the explained variance (with the exception of frequency of contacts on functional health problems). Finally, none of the measures of subjective social support contributed significantly to the explained variance for any of the criterion variables

when entered into the equation. The total R^2s for the four criterion variables with the ten predictor variables entered into the regression equation were significant in three of the four cases, explaining from 41% to 62% of the variance.

Table 33 reports the results of the multiple regression analyses of stress and social support on psychological health for the homebound group. Again, the inclusion of demographic variables into the regression equation failed to account for a significant amount of the explained variance for any of the criterion variables. The addition of stress into the equation resulted in a significant increase in the explained variance for all four criterion variables (with total R^2s ranging from .43 to .63). The subsequent inclusion of objective measures of social support into the regression equation failed to contribute significantly to the explained variance for any of the measures of psychological health. Finally, the addition of subjective measures of social support added little to the variance explained with the exception of interpersonal sensitivity where perceived general support contributed significantly. The total R^2s for all four criterion variables with the ten predictor variables entered into the equation were each signficant, explaining from 49% to 68% of the variance.

In summary, demographic variables accounted for little of the explained variance for both groups. The inclusion of the stress measure into the regression equation accounted for a significant amount of the variance explained for both physical and psychological health measures of the homebound group, and all psychological health measures of the community active group. Stress contributed significantly to the explained variance of one physical health measure (minor health complaints) for the

community active group as well. The subsequent introduction of objective measures of social support into the regression equation generally added nothing of significance to the explained variance for either group. Finally, the inclusion of subjective measures of social support added significantly to the explained variance for six of the eight health measures for the community active group (with perceived general support and perceived support from friends and neighbors being significant predictor variables) but for only one health measure for the homebound group.

Conclusion: Hypothesis 10 is generally supported for the community active group but is not supported for the homebound group.

Table 31: Multiple regression of stress & support measures on psychological health: Community Active

Control Variables	Depression (N=54)	Anxiety (N=54)	Interpersonal Sensitivity (N=54)	SCL-90 (N=54)
Demographics				
Sex	-.11	-.08	-.01	-.07
Age	-.02	-.08	-.05	-.09
Total R^2	.02	.03	.02	.03
Stress Measure				
Worry Scale	.46[c]	.51[c]	.66[c]	.62[c]
Total R^2	.26[b]	.32[c]	.50[c]	.44[c]
ΔR^2	.24	.29	.48	.41
Objective				
Number of Contacts	.05	-.02	.03	.02
Frequency of Contacts	.07	.12	.05	.08
Marital Status	-.05	.04	-.08	.00
Total R^2	.27[a]	.33[b]	.50[c]	.44[c]
ΔR^2	.03	.01	.00	.00
Subjective				
General	-.19	-.19	-.13	-.14
Friends	-.02	-.13	-.09	-.12
Neighbors	-.31[b]	-.22[a]	-.28[c]	-.20[a]
Family	.14	.08	.07	.09
Total R^2	.41[b]	.46[b]	.63[c]	.53[c]
ΔR^2	.14	.13	.13	.09

In all multiple regression analysis, demographic variables are entered together as step 1, marital status, frequency and number of contacts are entered together as step 2, and perception variables entered together as step 3. Numbers represent standardized regression coefficients.
[a]$p<.05$: [b]$p<.01$: [c]$p<.001$

Table 32: Multiple regression of stress & support measures on physical health: Homebound

Control Variables	Perceived Illness (N=44)	Chronic Illness (N=44)	Minor Complaints (N=44)	Functional Problems (N=44)
Demographics				
Sex	.23	.06	-.05	-.02
Age	-.09	-.17	-.10	-.02
Total R^2	.03	.11	.11	.04
Stress Measure				
Worry Scale	.34[a]	.66[c]	.75[c]	.30[a]
Total R^2	.13	.44[c]	.58[c]	.18[a]
ΔR^2	.10	.33	.47	.14
Objective				
Number of Contacts	.42	.21	.09	-.25
Frequency of Contacts	-.22	-.13	.00	.52[a]
Marital Status	.01	-.19	-.06	.25
Total R^2	.22	.51[c]	.60[c]	.34[a]
ΔR^2	.09	.18	.02	.16
Subjective				
General	-.09	-.09	-.02	-.17
Friends	.14	.04	.04	.21
Neighbors	.17	.22	.04	.07
Family	-.05	-.08	.12	-.27
Total R^2	.26	.55[b]	.62[c]	.41[a]
ΔR^2	.04	.04	.02	.07

In all multiple regression analysis, demogrpahic variables are entered together as step 1, marital status, frequency and number of contacts are entered together as step 2, and perception variables entered together as step 3. Numbers represent standardized regression coefficients.
[a]$p<.05$: [b]$p<.01$: [c]$p<.001$

Table 33: Multiple regression of stress & support measures on psychological health: Homebound

Control Variables	Depression (N=44)	Anxiety (N=44)	Interpersonal Sensitivity (N=44)	SCL-90 (N=44)
Demographics				
Sex	-.02	-.20	-.16	-.15
Age	.02	.10	-.05	-.06
Total R^2	.09	.06	.14[a]	.15[a]
Stress Measure				
Worry Scale	.67[c]	.49[c]	.52[c]	.60[c]
Total R^2	.62[c]	.43[c]	.52[c]	.63[c]
ΔR^2	.53	.37	.38	.48
Objective				
Number of Contacts	-.03	.09	.06	.09
Frequency of Contacts	-.03	-.15	-.13	-.12
Marital Status	.01	.23	.07	.09
Total R^2	.63[c]	.46[c]	.54[c]	.63[c]
ΔR^2	.01	.03	.02	.00
Subjective				
General	-.19	-.15	-.20[a]	-.22
Friends	.08	.05	.02	.05
Neighbors	-.13	.08	-.07	.06
Family	-.06	.10	-.10	-.10
Total R^2	.68[c]	.49[b]	.60[c]	.68[c]
ΔR^2	.05	.03	.06	.05

In all multiple regression analysis, demogrpahic variables are entered together as step 1, marital status, frequency and number of contacts are entered together as step 2, and perception variables entered together as step 3. Numbers represent standardized regression coefficients.
[a]$p<.05$: [b]$p<.01$: [c]$p<.001$

CHAPTER IV
DISCUSSION

Limitations of Study

There are a number of cautions that must be made in generalizing the results of this study to the elderly population at large. First and most important are problems in comparing the two groups themselves. The homebound and community active groups differed significantly in terms of both age and health. The data collection procedures also differed for the two samples in that the homebound subjects were interviewed one to one while most of the community active subjects completed the questionnaires on their own as part of a supervised group. Additionally, the two samples were not entirely from the same geographic areas and were not necessarily demographically representative of the elderly populatons in those areas. Specific demographic information on the homebound populations in each of the areas encompassed by the study was unavailable (although it is known that this group is typically composed of widowed women who are over the age of 75 - Streib, 1983) and, therefore, an accurate comparison of the sample in this study with the general homebound population was not obtained. Additionally, only homebound individuals who were cognitively able to respond to the questionnaires and willing to let a stranger visit their home for a couple of hours were interviewed. Neither of the groups was randomly sampled, although the homebound individuals included all persons receiving services in four agencies who met the homebound criterion and were willing to be

interviewed. The questionnaires depended upon self-report alone, with no way to verify the accuracy of an individual's responses. Finally, the data obtained from the two samples indicated that both groups were quite healthy. The community active group, especially, had relatively few health complaints or worries. The homebound sample while significantly less healthy than the community active group, also had fewer health complaints than expected. Therefore, a number of the health measures were skewed, particularly for the community active group.

Despite these limitations, the study also possessed a number of strengths. Sampling problems not-with-standing, the subjects involved in this study came from a wide range of areas - urban, suburban, and rural. The data base was also quite extensive, including measurement of both physical and psychological health, objective and subjective social support, as well as a measurement of stress. Finally, and perhaps most important, was that the study provided one of the first detailed examinations of a sample of homebound individuals combining the areas of physical health, psychological health, and social issues.

Summary of Hypotheses

The overriding goal of this study was to examine the relationship of social support and health. Unlike much of the prior research in this area, eight measures of both physical and psychological health were used as well as measures of both objective and subjective social support. It was assumed that a more significant relationship would be found between social support and psychological health than physical health measures. It

was also assumed that perceived availability of support would be of more importance than the actual amount of support received. Both of these assumptions were proven to be true. The following is a summary of the general findings of the study:

1. In comparing the two samples, the homebound group reported significantly more health complaints and a lower level of perceived social support. In addition, the homebound sample was significantly older than the community active sample.

2. Measures of objective and subjective social support were significantly correlated; measures of physical and psychological health were significantly correlated. This was true for both samples.

3. Among the homebound individuals, poor physical health was not significantly associated with low levels of objective or subjective social support. However, the community active sample did show a significant positive relationship between high number of chronic health problems and low perceived social support. Also, the community active group evidenced a significant positive relationship between poor perceived health and marriage as well as poor functional health and marriage. For both samples, poor psychological health was significantly associated with low levels of subjective social support, but not significantly associated with low levels of objective social support.

4. Physical health status was significantly associated with group membership only (with homebound group having a greater number of reported physical health problems), while psychological health status was significantly associated with perceived availability of social support.

5. Perception of social support was significantly associated with

health status for both groups. Number and frequency of contacts failed to be significantly related to health status while marital status was significantly associated with health status in only about 20% of the multiple regression analyses.

6. High perceived general social support was most significantly associated with good health among the homebound sample; high perceived social support from friends and neighbors was most significantly associated with good health among the community active sample.

7. Low social support measures were significantly associated with poor psychological health but not with physical health for the homebound sample. Low social support measures were significantly associated with poor psychological health in addition to a number of physical health measures for the community active group.

8. The relationship between social support and health was not found to be stronger for the homebound group.

9. Stress measures were significantly positively correlated with health measures for both groups. In general, low scores on the Worry scale were not significantly positively associated with high social support measures for either of the groups.

10. For the community active group, perceived social support was significantly positively associated with six of the eight health measures beyond that accounted for by demographics, stress, and objective support. Four of these six health measures were psychological health variables while the remaining two were chronic and functional health. Conversely, for the homebound group, perceived social support accounted for a significant amount of the explained variance (beyond that of demographics,

stress, and objective social support) for only one of the eight health measures.

Comparison of The Two Samples

Despite some critical differences between the two samples studied (e.g. age, health status, perceptions of social support), there were a number of similarities in the relationship between social support and health for the two groups. For example, in both samples, health measures were significantly correlated with one another and social support measures were significantly correlated with one another. Perceived social support proved to be more important than objective social support for both groups and generally accounted for a greater and more significant portion of the explained variance (even after accounting for the contribution of objective measures of social support). Additionally, stress and health measures were significantly correlated for both groups while stress and social support were not. Finally, and perhaps most important, poor psychological health was positively correlated with low perceived availability of support for both groups. In fact, even with large differences between the make-up of the two samples, subjective support measures accounted for more of the variance explained than group membership. Therefore, regardless of whether an elderly individual went out into the community daily or only monthly, it was his or her perception of available social support that was more significantly associated with that individual's psychological health.

The reasons for this relationship are worth exploring. First,

perceived social support may be a consequence of good psychological health. For example, it is possible that those individuals who are psychologically healthy have a more optomistic outlook on life, are more active, have more interactions, and consequently report better perceived social support. Conversely, those who are less psychologically healthy and report more depression, anxiety, etc., may be less active, have fewer interactions, and subsequently report poor perceived social support. Second, perceived social support may be an antecedent to good psychological health in that those individuals with high perceived support may subsequently generate more interactions, be more active, and, consequently, be more psychologically healthy. Similarly, those individuals who are active and have a greater number of social interactions may be more psychologically healthy, and hence report higher perceived social support. Finally, it appears that poor psychological health does not necessarily lead to an increase in social support or that there is some level of secondary gain for being unhealthy in that one subsequently receives additional social support.

The differences between the two samples were also quite telling. For example, the community active group indicated that chronic illness was significantly negatively correlated with low perceived social support. As a result, perceived support accounted for a significant portion of the explained variance beyond the contributions of demographic measures and objective support. Conversely, the homebound group evidenced little in the way of a significant relationship between any of the physical health measures and perceived support. It may be that physical illness has a greater differential effect on perceived social support in otherwise

healthy elderly individuals and less of a differentiating effect on perceived social support in those who are too ill to leave their homes.

There were also considerable differences in the types of perceived support that were felt to be important to members of the two groups. The community active individuals identified perceived support from friends and neighbors (in addition to general support) as accounting for a significant amount of the explained variance of a number of health variables. Conversely, the homebound group failed to identify perceived support from friends, neighbors, or family as significantly associated to health measures. Instead, only perceived general support was consistently identified as important. While there is some face validity to the finding that perceived support from friends and neighbors was more important than family support for those in the community active group, it was surprising to find that for the homebound sample, perceived family support was no more important than perceived support from friends and neighbors. This sample generally failed to report any group as providing a differential amount of support, yet still felt that support in some form was available if required. It is possible that an important measure of support for the homebound individuals was missing, namely support from formal service agencies which provide home-care helpers, social workers, and visiting nurses to many of the homebound subjects. Additionally, incidental support from other adults in each individual's life (e.g. the maintanence person, physician, clergyman) were also not taken into account. These sources of support could only be accounted for under the general support category.

In an attempt to examine those factors that contributed to perceived

general social support, a regression analysis (see Appendix D) was conducted in which general support served as the criterion variable. It was assumed that general perceived social support consisted in large part of perceptons of support from family, friends, and neighbors. Therefore, these three variables initially served as the predictor variables. The results indicated that these variables accounted for 33% of the variance explained for the community active sample (R^2= .33, p<.001) and 22% of the explained variance for the homebond sample (R^2= .22, p<.05). A subsequent addition of the three objective measures of social support into the regression equation (number of contacts, frequency of contacts, and marital status) resulted in the addition of 6% to the variance explained for the community active sample (Total R^2= .39, p<.001) and 4% to the variance explained for homebound sample (Total R^2= .26, p<.05). However, a considerable amount of the variance remained unaccounted for, and it is support provided by both incidental and formal support resources which may account for a significant portion of the unexplained variance, especially for the homebound sample.

While sex differences across a number of variables were noted in the results section, the relatively small number of men in the samples made it difficult to further analyze the effects of sex on the social support/health relationship. Sex differences were more apparent with the community active group, where women had both significantly higher perceptions of social support and significantly more monthly contacts. No significant sex differences among social support measures, however, were noted with the homebound sample. It may be that given equal opportunities to interact with others (i.e. being physically able to leave one's home for social

purposes), women are significantly more socially active. However, when restricted to home, women are no more able to maintain social support systems than men. In the area of health, there were few sex differences noted in either sample. Community active women did tend to report more chronic illnesses and more functional health problems than community active men, but this may simply have been a characteristic of this particular sample. While little can be concluded about sex differences, the results tend to support prior research indicating that women are more socially active than men (Antonucci, 1983). However, further investigation is required to better understand why these differences were not observed with the homebound elderly.

A final observed difference between the homebound and community active samples was in the relationship of stress and social support. Both samples produced significant correlations between measures of stress and health but relatively few significant correlations between measures of stress and social support. The former is not surprising given the close relationship between items on the Worry Scale and many items in the health scales. In fact, it would be expected that those individuals who were ill would be more stressed as a result. Additionally, prolonged stress has been shown to result in increased physical and psychological health problems. However, the lack of a relationship between stress and social support is curious, although it is consistent with the findings of previous researchers (e.g. Lin et al., 1979). Such results lend themselves to a number of possible conclusions. For example, the experience of a high degree of stress does not necessarily lead to an increase in social support. Conversely, low social support does not necessarily result in a state of

high stress (or vice versa).

While stress accounted for a significant amount of the variance explained for the psychological health measures of both groups, only the homebound group reported that stress also accounted for a significant portion of the explained variance for measures of physical health (with the exception of minor health complaints for the community active group). In fact, after taking into account the association between stress and health in the homebound sample, the subsequent inclusion of social support into the regression equation generally failed to add significantly to the explained variance. However, for the community active group, social support continued to contribute significantly to the explained variance of most health measures beyond the variance accounted for by stress. Therefore, it is possible that stress has a more important relationship with the health of homebound individuals. Conversely, in the community active group, where health (and consequently, stress) is less of a concern, social support may be more strongly associated with physical and psychological health.

Objective Versus Subjective Social Support

The results of the present study confirm prior research which indicates that perceived (subjective) social support is of considerably more importance than objective social support (e.g. Hetsley & Powers, 1975; Ward et al.n, 1984). In fact, the present study found little evidence of a significant relationship between objective social support and health. There are a number of possible explanations for this finding. Foremost is

the possibility that objective measures of support fail to take into account more cognitive aspects of social support. For example, an individual could have many visitors but not feel comfortable turning to any of them for support. Additionally, number and frequency of contacts failed to take into account the importance of telephone calls or letters, both means of obtaining support without face to face contact. Therefore, face to face contacts may be an inaccurate measure of social interactions, especially for the homebound elderly. Finally, the most likely explanation for this finding is that perceptions of available social support measure how the individual perceives his or her world, regardless of how accurate one's view might be. Additional research might focus upon utilizing improved measures of objective support as well as further examining what aspects of one's environment account for high perceptions of support.

Theoretical Implications

The findings of the present study can be related directly to the conceptual and theoretical issues discussed in Chapter 1. There it was noted that while measures of social support in the literature had typically been based upon quantitative variables (e.g. number and frequency of contacts, church membership or attendance), many of the proposed definitions of social support had focused upon concepts such as security, affection, intimacy, and belongingness. This lack of connectedness between definition and measurement was duly noted by Thoits (1982). While this paper has not proposed its own definition of social support, it

generally supports those definitions offered by Thoits (1982) ("...the degree to which a person's basic social needs are gratified through interaction with others", p. 147) and by Wallston et al. (1983) ("...comfort, assistance, and/or information one receives through formal or informal contacts with individuals or groups", p. 369). Consequently, social support is conceived as 1) having people to turn to and count upon in time of need, 2) having people to confide in, 3) having unconditional positive regard from friends and/or relatives, and 4) having people available to provide for instrumental needs.

One of the most important aspects of the Thoits (1982) and Wallston et al. (1983) definitions are their focus upon qualitative rather than quantitative aspects of social support. Perceptions of quality may be based upon the availability of support, how such support is utilized, or by the results (both positive and negative) of having received support or assistance. Conversely, quantitative measures in such a conceptual model may have little to do with the level of available social support and the perceived quality of such support. For example, in the present study marriage was not consistently associated with good health (and, in fact, was associated with poor health for a number of variables). This finding can be related back to Gove et al. (1983) who suggested that it was the quality of the marital relationship which was most important (with marriages of "high quality" being significantly associated with better health). Simply the presence of another person did not in and of itself quarantee that one's psychosocial needs would be met. Conversely, perceived quality of social support in the present study was frequently

related to level of health for both community active and homebound groups.

Kaplan et al. (1977) raise a second conceptual issue in their suggestion that the effect of social support as a buffer should only be observed in the presence of a stressor. While an examination of a causal relationship among social support, stress, and health was not possible in this study, the results suggest that a significant social support/health relationship can exist in the absence of a stressor. Other mechanisms besides stress may account for the association between social support and health, including improved health promotion behaviors and compliance with medical regimens. Additionally, social interaction may promote a good self-concept, improved mood, and increased interest in life, thereby decreasing the incidence of psychological distress. Therefore, to treat social support only within the context of stress is extremely limiting.

Consequently, what do the results of this study contribute to the controversey surrounding the buffer hypothesis? First, the distinction between direct effects and buffered effects is possibly a misnomer. Those studies which have purported to find a direct relationship between social support and health (e.g. Andrews et al., 1978; Lin et al., 1981) may have failed to identify a second mechanism (other than stress) which mediates the relationship. For in fact, it is likely that social support buffers the adverse effects of a number of variables, while concurrently enhancing the effectiveness of others. Yet, effectively evaluating any of these possible mechanisms, including stress, would require a longitudinal study along the lines suggested by Thoits (1982). The results of the present study reinforce the notion that social support and health are,

indeed, related, separate from any relationship to stress. The task remains, however, to identify the mechanisms that mediate this relationship as well as the circumstances under which the effects of social support are most apparent.

Clinical Implications

The clinical and treatment implications of the results of this study are important to consider. The results suggest that simply increasing social contacts will not in and of itself be associated with an improvement in psychological well-being, morale, and physical health. Instead, interventions may need to focus upon improving the quality of interpersonal relationships and the availability (or perceived availability) of assistance and support. This might actually be accomplished through a number of structural interventions. For example, services could be provided through regular visits from a social worker in which assistance and support would be offered. Similar results might also be accomplished through elderly housing with a 24 hour on-call staff who could be easily reached in case of emergency. Regular phone calls to homebound individuals might also decrease feelings of isolation and lack of support. Organizing groups of elderly individuals in housing projects to check on neighbors regularly with offers of instrumental support (e.g. buying something if a neighbor is going to the store) might also increase the perception that assistance is available if needed. Additionally, psychologists have examined the effects of building structure upon social

interactions. Lawton (1977) reviews the effects of single-loaded corridors as well as the impact of building height, size, and demographic characteristics on interactions. Planning elderly housing in such a way as to enhance and promote social interactions might also serve as an important intervention.

In the area of clinical interventions, elderly individuals might be assisted to elicit more support from their friends, neighbors, and relatives. Sometimes individuals may be reluctant to ask for help, especially after having been independent much of their adult lives. In such cases, a counselor might teach the individual how to make requests for assistance and support while at the same time feel more comfortable receiving such support. Unfortunately, the use of outpatient and inpatient clinical interventions with the elderly population has been more the exception than the rule. The assumption that little could be done with the elderly has resulted in a relative paucity of literature on clinical interventions with this population. Yet, in the past decade, evidence has indicated that the elderly are able to benefit from therapeutic services. In the area of stress reduction, for example, a number of studies have indicated that elderly clients can be trained in relaxation procedures to treat anxiety. Behaviorally-based procedures have also been used with the elderly to treat phobias, obsessive-compulsive behavior, as well as depression and grief. Given the success of these procedures with this population, it might also be possible that other interventions such as social skills training or assertiveness training could be utilized to assist elderly individuals to improve their social support systems.

The possible interventions to improve social support among the elderly are quite numerous, some being rather simple and basic while others requiring considerable planning and finances. However, simply providing the opportunity for increased social interaction may not be enough, especially if an individual is unable or unwilling to use the available social network. The individual must still possess the skills and/or the desire to develop relationships which provide support.

Social Support: Comparing Elderly and Non-Elderly Populations

Is the relationship between social support and health which was observed in the present study unique to the elderly population? While this study did not address this particular question, the literature does support a similar relationship between social support and health with other groups (e.g. animals, pregnant women, middle-aged individuals). The elderly, however, present a special concern because of their heightened potential for losing sources of support and/or being unable to seek support due to losses in mobility. It is this potential for loss, however, that is likely the important variable. In fact, loss of important sources of social support may place children at risk for psychological difficulties and loss of a spouse has often been associated with increased risk of psychological distress and suicide, regardless of the age of the individual. Therefore, it is unlikely that the elderly respond differently to loss of social support, but simply that they face the potential for such losses to a much greater extent.

Conclusion

Social support, especially perceived availability of social support, clearly was significantly associated with psychological health for both community active and homebound elderly. Less consistent significant associations were observed between social support and physical health measures, although these were more likely to be seen with the community active sample. The results of this study support previous research which indicates that social support has an important role to play in health status. While no causal relationship can be determined, it is likely that a feedback loop exists in which poor social support serves as an antecedent to poor health while poor health simultaneously results in a decrease in social support. Certainly, the onset of illness may initially result in an increase in social support resources. Yet, as an acute illness becomes more chronic and debilitating, it is more likely that prior sources of support gradually decrease.

The exact mechanism of how social support might effect health status is not yet understood. Certainly, the presence of social support can effect compliance with medical regimens, increase morale, help to prevent the development of more serious health problems, as well as possibly moderate the effects of stress.

This study reinforced prior research which suggested perceived social support to be strongly correlated with health measures (e.g. Hetsley, & Powers, 1975; Ward, et al., 1984), and has helped to provide a clearer understanding of the components which comprise this factor. It was in

this area that differences between the homebound and community active elderly were most striking, with the homebound failing to differentiate among specific sources of perceived support. Conversely, the community active group identified support from friends and neighbors to be of considerable importance.

While the homebound sample was considerably older, less healthy, and reported significantly less perceived social support than the community active sample, it was the latter group that actually demonstrated a more consistent and broad relationship between social support and health. It may well be that the social support/health relationship is more apparent for healthier individuals. Those individuals with more debilitating chronic illnesses may exhibit less differential effects in their social support/health relationship. Additionally, it appeared that for physical health measures, group membership accounted for the most significant portion of the explained variance. Yet, for psychological health measures, perceptons of social support proved to be most important. Therefore, despite considerable differences between the groups along demographic, health, and social support measures, the significant effects of perceived social support were still observed. Finally, both groups exhibited a strong and expected relationship between stress and health with no significant relationship between social support and stress. Stress appeared to be more closely related to the health of the homebound sample, who also reported significantly more health problems. Conversely, the community active sample demonstrated a less consistent and weaker relationship between health and stress. Consequently, social support continued to

contribute significantly to the explained variance of health measures beyond the effects accounted for by stress.

Future Directions

The results of this study suggest that future research on the relationship of stress and health must also consider the contribution of social support. Issues around the buffering hypothesis remain to be answered and likely require a longitudinal and well-controlled study similar to that outlined by Thoits (1982). Yet, it is likely that the mechanism which mediates the relationship between social support and health is not limited to the possible buffering effects upon stress. Instead, future research should focus upon delineating the exact nature of these mechanisms, whether they be stress, compliance with medical regimens, or attending to the instrumental needs of the individual. An examination of the conditions which impinge upon these various mechanisms may also be important.

This study also provided one of the first detailed examinations of a homebound elderly sample. Additional research on this population is sorely needed, especially with estimates of about 10% of the elderly population falling into this category (U.S. Department of Commerce, 1982). Foremost, we have failed to identify the membership of this population on a national level and have neither documented nor understood the needs of this group. It is likely that social isolation will be found to be an important characteristic of this group of individuals and that

interventions will need to be developed to address this problem.

Correlational studies in this area of research continue to serve an important role. However, as with most of the research in this area, a number of methodological problems must be addressed. Most important are the general lack of objective measures in assessing illness or social support. Too much reliance has been placed upon self-report measures with little done in the way of assessing their accuracy. Even purported objective measures of social support (e.g. number of contacts) is dependent upon the accurate recall of the respondent. Clearly, this was a limitation with the present study. It may also be appropriate to begin to investigate the effects of clincial interventions in which social support is used as an independent variable. The results of the present study would suggest that such an intervention should focus upon improving the perceived availability and quality of support.

The continuing theoretical and conceptual problems over the definition of social support and stress must also be addressed. At the present time, multiple measures of health and social support are the best way to protect against dealing with too narrow or limited a definition. Yet, an on-going definitional and practical problem common to both social support and stress is that individuals do not always experience supposedly stressful or supportive events in the same manner. Certainly, not all forms of social interventions are perceived as supportive and not all life events are perceived as equally stressful to every individual. Accounting for such individual differences in response to stressful life events or social support is in itself an important area of research.

Finally, the advantages of studying and understanding the relationship between social support and health are also somewhat pragmatic, especially for the elderly population. Controlling the physical consequences of aging or the experience of stressful life events may be an extremely difficult if not impossible task. Conversely, social support is much more easily controlled, through governmental policy, community action, or assistance at the family level. If, indeed, increased social support does have a positive and lasting effect upon the health of individuals, it may be in this area that the most can be gained in the shortest possible amount of time and with the least amount of effort.

FOOTNOTES

1. Determined by multiplying the mean of each age bracket over 60 by the number of individuals in that bracket (e.g. 100 individuals aged 60-62 would be 100 x 61), adding together the values for each bracket, then dividing by the total number of over 60 individuals to obtain a mean age for the over 60 population.

2. In all of the analyses high values on social support measures indicate increased levels of support (for marital status, married individuals were assigned a higher numeric value). Conversely, high values on health measures indicate increased health problems or poorer health.

3. All correlation analyses in this paper are one-tailed.

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APPENDICES

APPENDIX A

QUESTIONNAIRES

Background Information

Code No. _____ Age _____ Sex _____ Date _____

Marital Status: (circle) single divorced widowed married

With whom do you live? _____

_____

Indicate the initials of close friends and relatives below and the number of times you visit them or they visit you per month.

Initials	Frequency per month	Initials	Frequency per month
1.		13.	
2.		14.	
3.		15.	
4.		16.	
5.		17.	
6.		18.	
7.		19.	
8.		20.	
9.		21.	
10.		22.	
11.		23.	
12.		24.	
		25.	

How many clubs or community organizations do you belong to? Please list.

_____ _____

_____ _____

_____ _____

_____ _____

Current State of Health (circle one)

excellent good fair poor

How often do you visit the Senior Center?

_____ 3-5 times a week

_____ 1-2 times a week

_____ 1-2 times a month

_____ Only specific times, about 3-6 times a year

_____ Rarely

How do you participate in organized activities for seniors (check all that apply).

___meals

__recreational activities (e.g, bingo, cards)

__social activities (dances)

__organized trips

__providing assistance to other seniors (e.g, delivering meals)

__Other _____

Do you belong to a church or temple? _____ yes _____ no

How often do you attend services?

_____ I'm a regular every week

_____ Only for special occasions

_____ About once a month

_____ Rarely

To what extent is having a religious belief a comfort to you?

_____ a little _____ a fair amount _____ a lot

To what extent do religious beliefs give meaning to your life?

_____ a little _____ a fair amount _____ a lot

What is your present yearly income?* _____$0 - $10,000 _____$10 - 20,000

_____ $20 - $30,000 _____ $30 - $40,000 _____ $40 - $50,000 _____ More than $50,000

If now retired, what was your yearly income previous to retirement?*

_____$0-$10,000 _____$10-$20,000 _____$20-$30,000 _____$30-$40,000

_____$40-$50,000 _____More than $50,000

How many years have you or your spouse been retired? _____

What is/was your spouse's occupation? _____

What is/was your occupation? _____

What was the highest level of education you obtained?

_____ Grade School (Which grade? _____)

_____ Junior/Senior High School (Which grade? _____)

_____ College (How many years? _____. Degree held _____)

_____ Other _____

*Please include income of both yourself and your spouse.

I. Please rate the degree to which you agree or disagree with the following statements. If you agree strongly, you might pick "1," if you agree, but not strongly, you might pick "2" or "3." If you disagree, you would pick "5," "6," or "7," depending on how strongly you disagree. If you don't really agree or disagree, you would pick "4."

	Agree Strongly						Disagree Strongly
1. I often feel lonely, like I don't have anyone to reach out to	1	2	3	4	5	6	7
2. When I am unhappy or under stress, there are people I can turn to for support.	1	2	3	4	5	6	7
3. I don't know anyone to confide in	1	2	3	4	5	6	7
4. I used to have close friends to talk to about things, but I don't anymore.	1	2	3	4	5	6	7
5. When I am troubled, I keep things to myself.	1	2	3	4	5	6	7
6. I am not a member of any social groups (such as church groups, clubs, teams, etc.)	1	2	3	4	5	6	7
7. I believe in myself and in my ability to handle new situations without any help from others.	1	2	3	4	5	6	7
8. It is important to me that I have emotional support from friends.	1	2	3	4	5	6	7
9. People should feel comfortable turning to a priest (minister, rabbi) for support and comfort.	1	2	3	4	5	6	7
10. I rarely ask for support from others.	1	2	3	4	5	6	7
11. I don't think people really need other people—they can do just as well on their own.	1	2	3	4	5	6	7
12. As a child I received a great deal of support from my parents.	1	2	3	4	5	6	7

	Agree Strongly						Disagree Strongly
13. My brothers and sisters were supportive of me.	1	2	3	4	5	6	7
14. There were always people around when I was growing up who could help me when I needed it.	1	2	3	4	5	6	7
15. I can turn to my parents or siblings when I am troubled.	1	2	3	4	5	6	7
16. When I don't have my family's support, I feel more anxious about what I am doing.	1	2	3	4	5	6	7
17. When I feel comfortable when asking my family for support.	1	2	3	4	5	6	7
18. My spouse does not really provide me with much emotional support.	1	2	3	4	5	6	7
19. My family provides me with satisfaction and a sense of strength.	1	2	3	4	5	6	7
20. Even when I feel bad about myself, my friends can cheer me up and make me feel important.	1	2	3	4	5	6	7
21. I have friends who will support me no matter what I do.	1	2	3	4	5	6	7
22. I often feel that my friends will be nice to me regardless of what I am doing or feeling.	1	2	3	4	5	6	7
23. My neighbors make me feel that I am cared about.	1	2	3	4	5	6	7
24. My interactions with my neighbors make me feel important.	1	2	3	4	5	6	7
25. I can always count on my neighbors to help me when I am distressed.	1	2	3	4	5	6	7
26. I often feel that I don't have as much support from people living near me as I would like.	1	2	3	4	5	6	7

The Worry Scale

INSTRUCTIONS: Below is a list of problems that often concern elderly Americans. Please read each one carefully. After you have done so, please fill in one of the spaces to the right with a check that describes HOW MUCH THAT PROBLEM WORRIES YOU. Make only one check mark for each item.

THINGS THAT WORRY ME...

	Never	Rarely 1-2 times per month	Sometimes 1-2 times per week	Often 1-2 times a day	Much of the time more than 2 times a day
Finances					
1. that I'll lose my home					
2. that I won't be able to pay for the necessities of life (such as food, medicine, clothing)					
3. that I won't be able to support myself independently					
4. that I won't be able to enjoy the "good things" in life (such as travel, recreation, entertainment)					
5. that I won't be able to help my children financially					
Health					
6. that my eyesight or hearing will get worse					
7. that I'll lose control of my bladder or kidneys					
8. that I won't be able to remember important things					
9. that I won't be able to get around by myself					
10. that I won't be able to enjoy my food					
11. that I'll have to be taken care of by my family					
12. that I'll have to be taken care of by strangers					

	Never	Rarely 1-2 times per month	Sometimes 1-2 times per week	Often 1-2 times a day	Much of the time more than 2 times a day
Health					
13. that I won't be able to take care of my spouse					
14. that I'll have to go to a nursing home or hospital					
15. that I won't be able to sleep at night					
16. that I may have a serious illness or accident					
17. that my spouse or a close family member may have a serious illness or accident					
18. that I won't be able to enjoy sex					
19. that my reflexes will slow down					
20. that I won't be able to make decisions					
21. that I won't be able to drive a car					
22. that I'll have to use a mechanical aid (such as a hearing aid, bi-focals, a cane)					
Social Conditions					
23. that I'll look "old"					
24. that people will think me unattractive					
25. that no one will want to be around me					
26. that no one will love me anymore					
27. that I'll be a burden to my loved ones					
28. that I won't be able to visit my family and friends					
29. that I may be attacked by muggers or robbers on the streets					

	Never	Rarely 1-2 times per month	Sometimes 1-2 times per week	Often 1-2 times a day	Much of the time more than 2 times a day
Social Conditions					
30. that my home may be broken into and vandalized					
31. that no one will come to my aid if I need it					
32. that my friends and family won't visit me					
33. that my friends and family will die					
34. that I'll get depressed					
35. that I'll have serious psychological problems					
Other Worries:					
36.					
37.					
38.					
39.					
40.					

Adjective Check List

Below you will find words which describe different kinds of moods and feelings. For each word, decide whether or not it describes how you feel most of the time. If it does, circle it; if it doesn't, don't mark it at all. Some of the words may sound alike, but we want you to mark all the words that describe your feelings. Work rapidly.

1. active
2. adventurous
3. affectionate
4. afraid
5. agitated
6. agreeable
7. aggressive
8. alive
9. alone
10. amiable
11. amused
12. angry
13. annoyed
14. awful
15. bashful
16. bitter
17. blue
18. bored
19. calm
20. cautious
21. cheerful
22. clean
23. complaining
24. contented
25. contrary
26. cool
27. cooperative
28. critical
29. cross
30. cruel
31. daring
32. desperate
33. destroyed
34. devoted
35. disagreeable
36. discontented
37. discouraged
38. disgusted
39. displeased
40. energetic
41. enraged
42. enthusiastic
43. fearful
44. fine
45. fit
46. forlorn
47. frank
48. free
49. friendly
50. frightened
51. furious
52. gay
53. gentle
54. glad
55. gloomy
56. good
57. good-natured
58. grim
59. happy
60. healthy

61. hopeless
62. hostile
63. impatient
64. incensed
65. indignant
66. inspired
67. interested
68. irritated
69. jealous
70. joyful
71. kindly
72. lonely
73. lost
74. loving
75. low
76. lucky
77. mad
78. mean
79. meek
80. merry
81. mild
82. miserable
83. nervous
84. obliging
85. offended
86. outraged
87. panicky
88. patient
89. peaceful
90. pleased
91. pleasant
92. polite
93. powerful
94. quiet
95. reckless
96. rejected
97. rough
98. sad
99. safe
100. satisfied
101. secure
102. shaky
103. shy
104. soothed
105. steady
106. stubborn
107. stormy
108. strong
109. suffering
110. sullen
111. sunk
112. sympathetic
113. tame
114. tender
115. tense
116. terrible
117. terrified
118. thoughtful
119. timid
120. tormented
121. understanding
122. unhappy
123. unsociable
124. upset
125. vexed
126. warm
127. whole
128. wild
129. willful
130. wilted
131. worrying
132. young

Health Opinion Survey

For each question, circle the number that best describes you.

		nearly all the time	pretty often	not very much	never
1.	Do you ever have any trouble getting to sleep or staying asleep?	1	2	3	4
2.	Are you ever bothered by feeling fidgety and tense?	1	2	3	4
3.	Are you ever troubled by headaches or pains in the head?	1	2	3	4
4.	Do you have loss of appetite?	1	2	3	4
5.	How often are you bothered by having an upset stomach?	1	2	3	4
6.	Do you find it difficult to get up in the morning?	1	2	3	4
		many times	sometimes	hardly ever	never
7.	Does any ill health affect the amount of work you do?	1	2	3	4
8.	Are you ever bothered by shortness of breath when you are not exercising or working hard?	1	2	3	4
9.	Are you ever bothered by your heart beating hard?	1	2	3	4
10.	Do you ever drink more than you should?	1	2	3	4
11.	Do you ever have spells of dizziness?	1	2	3	4
12.	Are you ever bothered by nightmares?	1	2	3	4
13.	Do you tend to lose weight when you have something important bothering you?	1	2	3	4
14.	Do your hands ever tremble enough to bother you?	1	2	3	4

		many times	sometimes	hardly ever	never
15.	Are you troubled by your hands sweating so that you feel damp and clammy?	1	2	3	4
16.	Are there ever times when you can't take care of things because you just can't get going?	1	2	3	4
17.	Do you feel you are bothered by all sorts of pains and ailments in different parts of your body?	1	2	3	4
19.	Do you ever feel that you are going to have a nervous breakdown?	1	2	3	4
20.	Does it seem that food has lost its flavor?	1	2	3	4
21.	Do you sometimes feel that you've lost your interest in life?	1	2	3	4
22.	Do you experience a loss of spontaneity in some of your behaviors?	1	2	3	4
23.	Are you worried about the loss of your eyesight or hearing?	1	2	3	4

24. Do you have trouble with any of the following:

a.	Doing heavy housework	___ Yes	___ No
b.	Doing light housework	___ Yes	___ No
c.	Using public transportation	___ Yes	___ No
d.	Walking up and down stairs	___ Yes	___ No
e.	Working or holding a job	___ Yes	___ No
f.	Washing and bathing	___ Yes	___ No
g.	Dressing and putting on shoes	___ Yes	___ No
h.	Cutting toenails	___ Yes	___ No

Does your health prevent you from working altogether? ___ Yes ___ No
Does your health limit the amount or kind ofjob you can hold? ___ Yes ___ No

25. b) Chronic conditions — Do you have any problems with

	Yes	No
1. Lung disease (emphysema, TB, bronchitis, asthma)	____	____
2. Heart disease (attack, angina, congestive heart failure, high blood pressure)	____	____
3. Hypertension, elevated cholesterol and triglycerides	____	____
4. Kidney or bladder problems	____	____
5. Gynecological problems (female problems)	____	____
6. Liver disease	____	____
7. Bowel or stomach problems (diverticulosis, ulcers, indigestion/heartburn/reflux, hemorrhoids, diarrhea, constipation)	____	____
8. Arthritis, bone/joint, foot problems, rheumatism	____	____
9. Endocrine problems (diabetes mellitus, thyroid)	____	____
10. Depression	____	____
11. Chronic pain from any cause (headache, joints, other)	____	____
12. Other (e.g. anemia, other blood diseases)	____	____

26. Has your health changed in the last 6 months? Did it improve, remain about the same or become worse?

_____ Improve
_____ Remain about the same
_____ Become worse

27 During the last year, how many days did you spend in bed or home from work because of illness?

_____ Less than a week
_____ 1-2 weeks
_____ 3-4 weeks
_____ 5-6 weeks
_____ More than 6 weeks

28. Did you have a medical check-up during the last year? ___ Yes ___ No

29. People see a doctor for many reasons. Think about the last time you saw a doctor and check all the following reasons that are applicable:

_____ I felt it was time for a check-up.

_____ I felt less well than usual.

_____ I had a symptom (such as dizziness, fatigue, or shortness of breath) for a little while.

_____ I had a problem (pain, indigestion, or change in bodily functions) that didn't clear up.

_____ I was sick or had an accident.

30. The last time you saw a doctor, how satisfied were you with the care you received? We you

_____ Not at all satisfied

_____ Slightly dissatisfied

_____ Satisfied

_____ Very satisfied

_____ Extremely satisfied

SCL—90—R

SIDE 1

INSTRUCTIONS:

Below is a list of problems and complaints that people sometimes have. Please read each one carefully. After you have done so, please fill in one of the numbered circles to the right that best describes HOW MUCH DISCOMFORT THAT PROBLEM HAS CAUSED YOU DURING THE PAST WEEK INCLUDING TODAY. Mark only one numbered circle for each problem and do not skip any items. If you change your mind, erase your first mark carefully. Read the example below before beginning, and if you have any questions please ask the technician.

SEX

MALE ○

FEMALE ○

NAME: _____

LOCATION: _____

EDUCATION: _____

MARITAL STATUS: MAR__ SEP__ DIV__ WID__ SING__

DATE

MO	DAY	YEAR

ID. NUMBER

AGE

VISIT NUMBER: _____

EXAMPLE

HOW MUCH WERE YOU DISTRESSED BY:	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY
1. Bodyaches	0	1	2	●	4

HOW MUCH WERE YOU DISTRESSED BY:		NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY
1. Headaches	1	0	1	2	3	4
2. Nervousness or shakiness inside	2	0	1	2	3	4
3. Repeated unpleasant thoughts that won't leave your mind	3	0	1	2	3	4
4. Faintness or dizziness	4	0	1	2	3	4
5. Loss of sexual interest or pleasure	5	0	1	2	3	4
6. Feeling critical of others	6	0	1	2	3	4
7. The idea that someone else can control your thoughts	7	0	1	2	3	4
8. Feeling others are to blame for most of your troubles	8	0	1	2	3	4
9. Trouble remembering things	9	0	1	2	3	4
10. Worried about sloppiness or carelessness	10	0	1	2	3	4
11. Feeling easily annoyed or irritated	11	0	1	2	3	4
12. Pains in heart or chest	12	0	1	2	3	4
13. Feeling afraid in open spaces or on the streets	13	0	1	2	3	4
14. Feeling low in energy or slowed down	14	0	1	2	3	4
15. Thoughts of ending your life	15	0	1	2	3	4
16. Hearing voices that other people do not hear	16	0	1	2	3	4
17. Trembling	17	0	1	2	3	4
18. Feeling that most people cannot be trusted	18	0	1	2	3	4
19. Poor appetite	19	0	1	2	3	4
20. Crying easily	20	0	1	2	3	4
21. Feeling shy or uneasy with the opposite sex	21	0	1	2	3	4
22. Feelings of being trapped or caught	22	0	1	2	3	4
23. Suddenly scared for no reason	23	0	1	2	3	4
24. Temper outbursts that you could not control	24	0	1	2	3	4
25. Feeling afraid to go out of your house alone	25	0	1	2	3	4
26. Blaming yourself for things	26	0	1	2	3	4
27. Pains in lower back	27	0	1	2	3	4
28. Feeling blocked in getting things done	28	0	1	2	3	4
29. Feeling lonely	29	0	1	2	3	4
30. Feeling blue	30	0	1	2	3	4
31. Worrying too much about things	31	0	1	2	3	4
32. Feeling no interest in things	32	0	1	2	3	4
33. Feeling fearful	33	0	1	2	3	4
34. Your feelings being easily hurt	34	0	1	2	3	4
35. Other people being aware of your private thoughts	35	0	1	2	3	4

Please continue on the following page ▶

SCL—90—R

SIDE 2

HOW MUCH WERE YOU DISTRESSED BY:		NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY
36. Feeling others do not understand you or are unsympathetic	36	0	1	2	3	4
37. Feeling that people are unfriendly or dislike you	37	0	1	2	3	4
38. Having to do things very slowly to insure correctness	38	0	1	2	3	4
39. Heart pounding or racing	39	0	1	2	3	4
40. Nausea or upset stomach	40	0	1	2	3	4
41. Feeling inferior to others	41	0	1	2	3	4
42. Soreness of your muscles	42	0	1	2	3	4
43. Feeling that you are watched or talked about by others	43	0	1	2	3	4
44. Trouble falling asleep	44	0	1	2	3	4
45. Having to check and double-check what you do	45	0	1	2	3	4
46. Difficulty making decisions	46	0	1	2	3	4
47. Feeling afraid to travel on buses, subways, or trains	47	0	1	2	3	4
48. Trouble getting your breath	48	0	1	2	3	4
49. Hot or cold spells	49	0	1	2	3	4
50. Having to avoid certain things, places, or activities because they frighten you	50	0	1	2	3	4
51. Your mind going blank	51	0	1	2	3	4
52. Numbness or tingling in parts of your body	52	0	1	2	3	4
53. A lump in your throat	53	0	1	2	3	4
54. Feeling hopeless about the future	54	0	1	2	3	4
55. Trouble concentrating	55	0	1	2	3	4
56. Feeling weak in parts of your body	56	0	1	2	3	4
57. Feeling tense or keyed up	57	0	1	2	3	4
58. Heavy feelings in your arms or legs	58	0	1	2	3	4
59. Thoughts of death or dying	59	0	1	2	3	4
60. Overeating	60	0	1	2	3	4
61. Feeling uneasy when people are watching or talking about you	61	0	1	2	3	4
62. Having thoughts that are not your own	62	0	1	2	3	4
63. Having urges to beat, injure, or harm someone	63	0	1	2	3	4
64. Awakening in the early morning	64	0	1	2	3	4
65. Having to repeat the same actions such as touching, counting, or washing	65	0	1	2	3	4
66. Sleep that is restless or disturbed	66	0	1	2	3	4
67. Having urges to break or smash things	67	0	1	2	3	4
68. Having ideas or beliefs that others do not share	68	0	1	2	3	4
69. Feeling very self-conscious with others	69	0	1	2	3	4
70. Feeling uneasy in crowds, such as shopping or at a movie	70	0	1	2	3	4
71. Feeling everything is an effort	71	0	1	2	3	4
72. Spells of terror or panic	72	0	1	2	3	4
73. Feeling uncomfortable about eating or drinking in public	73	0	1	2	3	4
74. Getting into frequent arguments	74	0	1	2	3	4
75. Feeling nervous when you are left alone	75	0	1	2	3	4
76. Others not giving you proper credit for your achievements	76	0	1	2	3	4
77. Feeling lonely even when you are with people	77	0	1	2	3	4
78. Feeling so restless you couldn't sit still	78	0	1	2	3	4
79. Feelings of worthlessness	79	0	1	2	3	4
80. The feeling that something bad is going to happen to you	80	0	1	2	3	4
81. Shouting or throwing things	81	0	1	2	3	4
82. Feeling afraid you will faint in public	82	0	1	2	3	4
83. Feeling that people will take advantage of you if you let them	83	0	1	2	3	4
84. Having thoughts about sex that bother you a lot	84	0	1	2	3	4
85. The idea that you should be punished for your sins	85	0	1	2	3	4
86. Thoughts and images of a frightening nature	86	0	1	2	3	4
87. The idea that something serious is wrong with your body	87	0	1	2	3	4
88. Never feeling close to another person	88	0	1	2	3	4
89. Feelings of guilt	89	0	1	2	3	4
90. The idea that something is wrong with your mind	90	0	1	2	3	4

APPENDIX B

MOOD AFFECT ADJECTIVE CHECK LIST

MOOD ADJECTIVE CHECK LIST

Similar analyses were conducted with the three adjective checklist factors as were conducted with the other health measures. Table 34 presents the results of a series of correlation analyses conducted with the adjective checklist factors (MAACL factors) and demographic variables. No significant correlations were observed for either the community active or homebound subjects. Table 35 summarizes the correlations between MAACL factors and social support variables. A greater number of objective measures of social support were significantly correlated with MAACL factors for the homebound group than for the community active group. While perceived general support was significantly correlated with MAACL factors for both groups, the community active group also evidenced a number of significant correlations between MAACL factors and perceived support from neighbors, friends, and family. This was not the case for homebound individuals (with the exception of a significant correlation between depression and perceived support from friends).

Table 36 summarizes the correlation coefficients between the adjective checklist factors and the other eight health measures. Forty-three of the forty-eight correlations were found to be significant. Nonsignificant correlations for the homebound group were observed between functional health problems and all three MAACL factors; nonsignificant correlations for the community active group were observed between the measure of hostility and both functional health problems and perceived illness.

Table 34: Correlations between demographic and Adjective Checklist Measures

Adjective Checklist Measures[1]	Demographic Measures: Community Active (N=67) Sex*	Age	Homebound (N=40) Sex*	Age
Depression	-.06	-.13	-.05	-.11
Anxiety	-.02	-.12	-.18	-.09
Hostility	-.13	-.08	-.10	-.15

[1]High values indicate high levels of anxiety, depression, or hostiltiy.
*female=0, male=1
$^{a}p<.05$: $^{b}p<.01$: $^{c}p<.001$

Table 35: Correlations between social support measures and Adjective Checklist Measures

Social Support Measures	Adjective Checklist Measures: Community Active (N=67) Depression	Anxiety	Hostility	Homebound (N=40) Depression	Anxiety	Hostility
Number of Contacts	-.30[b]	-.21[a]	-.08	-.29[a]	-.20	-.31[a]
Frequency of Contacts	-.19	-.17	-.02	-.31[a]	-.31[a]	-.33[a]
Marital Status*	-.18	-.06	.05	.17	.24	.31[a]
Perception of Social Support	-.54[c]	-.54[c]	-.25[a]	-.44[b]	-.26	-.34[a]
Percep. of General Support	-.51[c]	-.43[c]	-.21[a]	-.59[c]	-.51[c]	-.53[c]
Percep. of Friend Support	-.38[c]	-.40[c]	-.16	-.35[a]	-.20	-.26
Percep. of Neighbor Support	-.44[c]	-.47[c]	-.17	-.23	-.12	-.19
Percep. of Family Support	-.24[a]	-.23[a]	-.14	-.21	-.00	-.08

*single=0, married=1
$^{a}p<.05$: $^{b}p<.01$: $^{c}p<.001$

Table 36: Correlations between health measures and Adjective Checklist Measures

Health Measures	Adjective Checklist Measures* Community Active (N=67)			Homebound (N=40)		
	Depression	Anxiety	Hostility	Depression	Anxiety	Hostility
Pereceived Illness	.25[a]	.24[a]	-.04	.35[a]	.38[b]	.31[a]
Chronic Illness	.47[c]	.41[c]	.24[a]	.44[b]	.50[c]	.35[a]
Minor Complaints	.46[c]	.55[c]	.32[b]	.63[c]	.68[c]	.46[c]
Functional Problems	.20[a]	.27[b]	.06	.25	.12	.17
Depression (SCL-90)	.55[c]	.62[c]	.25[a]	.75[c]	.72[c]	.56[c]
Anxiety (SCL-90)	.51[c]	.65[c]	.26[a]	.50[c]	.68[c]	.49[c]
Interpersonal (SCL-90)	.48[c]	.59[c]	.21[a]	.64[c]	.66[c]	.72[c]
SCL-90	.54[c]	.65[c]	.28[a]	.69[c]	.74[c]	.58[c]

*High values indicate high levels of anxiety, depression, or hostility
[a]p<.05: [b]p<.01: [c]p<.001

Tables 37 and 38 present the results of a series of regression analyses conducted with the MAACL factors. The step-wise regressions involved the initial inclusion of demographic variables followed by objective measures of social support, and finally, subjective measures of social support. For the community active group (see Table 37), the initial addition of demographic variables into the regression equation failed to result in a significant amount of variance explained for any of the MAACL factors. The subsequent inclusion of objective measures of social support also contributed little of significance (with the exception of number of contacts with depression) to the explained variance. Finally, the addition

of subjective measures of social support resulted in both general support (for all three MAACL factors) and support from neighbors (for two of the MAACL variables) accounting for a significant amount of the explained variance. Therefore, subjective measures of support added significantly to the variance explained over and above that of demographic variables and objective measures of social support.

Table 38 presents the results of a series of regression analyses between MAACL factors and demographic, objective, and subjective measures of social support for the homebound group. As with the community active group, the inclusion of demographic variables into the regression equation produced no significant amount of explained variance. The subsequent inclusion of objective measures of social support resulted in marital status adding significantly to the explained variance for both anxiety and hostility (suggesting that married individuals in the sample reported more psychological difficulties). However, neither number nor frequency of contacts contributed significantly to the explained variance. Finally, with the inclusion of subjective measures of social support, only general support contributed significantly to the explained variance for each of the MAACL factors; the remaining three perceived social support variables failed to add significantly to the variance explained beyond that of general support and marital status.

In summary, neither demographic variables nor number/frequency of social contacts (with one exception) contributed significantly to the explained variance for both community active and homebound groups. However, marital status did contribute significantly to the explained variance of anxiety and hostility for the homebound group. Subjective

measures of social support contributed significantly to the explained variance of all of three factors for both groups. While both groups identified general support as important, support from neighbors also contributed significantly to the explained variance for the community active group.

Table 37: Multiple regression of support indicators on Adjective Checklist Variables: Community Active

Control Variables	Adjective Checklist* Depression (N=67)	Anxiety (N=66)	Hostility (N=67)
Demographics			
Sex[1]	-.17	-.16	-.24
Age	-.11	-.04	-.03
Total R^2	.02	.01	.02
Objective			
Number of Contacts	-.17[a]	-.04	-.07
Frequency of Contacts	.16	.11	.19
Marital Status	-.11	.01	.18
Total R^2	.16	.07	.04
ΔR^2	.14	.06	.02
Subjective			
General	-.40[c]	-.29[a]	-.25[a]
Friends	-.05	-.10	-.04
Neighbors	-.27[a]	-.35[c]	-.11
Family	-.03	-.07	-.05
Total R^2	.42[c]	.34[b]	.13
ΔR^2	.26	.27	.09

In all multiple regression analyses, demographic variables are entered together as step 1, marital status, frequency and number of contacts are entered together as step 2, and perception variables are entered together as step 3. Numbers represent standardized regression coefficients.

*High values indicate high levels of anxiety, depression, or hostiltiy.

[1] female=0, male=1

[a] $p<.05$: [b] $p<.01$: [c] $p<.001$

Table 38: Multiple regression of support indicators on Adjective Checklist Variables: Homebound

Control Variables	Adjective Checklist* Depression (N=40)	Anxiety (N=40)	Hostility (N=40)
Demographics			
Sex [1]	-.06	-.21	-.18
Age	-.01	-.03	-.05
Total R^2	.01	.04	.03
Objective			
Number of Contacts	.01	-.07	-.04
Frequency of Contacts	-.22	-.34	-.20
Marital Status	.07	.25[a]	.29[b]
Total R^2	.14	.23	.26
ΔR^2	.13	.19	.23
Subjective			
General	-.52[c]	-.52[b]	-.48[b]
Friends	-.20	-.10	-.10
Neighbors	.09	.14	.08
Family	.09	.20	.17
Total R^2	.42[a]	.44[a]	.45[a]
ΔR^2	.28	.21	.19

In all multiple regression analyses, demographic variables are entered together as step 1, marital status, frequency and number of contacts are entered together as step 2, and perception variables entered together as step 3. Numbers represent standardized regression coefficients.

*High values indicate high levels of anxiety, depression, or hostility.

[1] female=0, male=1

[a] $p<.05$: [b] $p<.01$: [c] $p<.001$

APPENDIX C

DEMOGRPAHIC COMPARISON OF SAMPLES TO POPULATIONS

Table 39: Demographic comparison of sample to populations: Greenfield (over 60 years of age)

	Homebound Sample (N=8)	Community Active Sample (N=9)	Population
Age:			
Mean Age	78.6 years	68.3 years	72.1 years
Sex:			
Men	12%	11%	46%
Women	88%	89%	54%
Marital Status:			
Married	12%	11%	46%
Single	88%	89%	54%
Income:			
Income Under 10K	100%	100%	35%
Income Over 10K	0%	0%	65%
Race:			
White	100%	100%	99%
Black	0%	0%	<1%
Other	0%	0%	<1%
Living Arrangement:			
Live Alone	88%	78%	20%
Live with Others	12%	22%	80%

Sources: U.S. Dept. of Commerce, Bureau of Census, General population characteristics: Census of population, 1980; U. S. Dept. of Commerce, Bureau of Census, General social and economic characteristics: Census of population, 1980; Center of Massachusetts Data and the Center for Aging, Over 65 in Massachusetts: 1980 Census profile.

Table 40: Demographic comparison of sample to populations: Hampshire County(over 60 years of age)

	Homebound Sample (N=11)	Community Active Sample (N=39)	Population
Age:			
Mean Age	74.8 years	74.0 years	70.3 years
Sex:			
Men	9%	23%	41%
Women	91%	77%	59%
Marital Status:			
Married	18%	26%	48%
Single	82%	74%	52%
Income:			
Income Under 10K	100%	59%*	27%
Income Over 10K	0%	41%*	73%
Race:			
White	100%	100%	97.8%
Black	0%	0%	<1%
Other	0%	0%	1.5%
Living Arrangement:			
Live Alone	82%	69%	19%
Live with Others	18%	31%	81%

*31% of subjects refused to answer questions on income.

Sources: U.S. Dept. of Commerce, Bureau of Census, General population characteristics: Census of population, 1980; U. S. Dept. of Commerce, Bureau of Census, General social and economic characteristics: Census of population, 1980; Center of Massachusetts Data and the Center for Aging, Over 65 in Massachusetts: 1980 Census profile.

Table 41: Demographic comparison of sample to populations: Longmeadow/Agawam (over 60 years of age)

	Community Active Sample (N=6)	Population
Age:		
Mean Age	69.8 years	70.4 years
Sex:		
Men	25%	42%
Women	75%	58%
Marital Status:		
Married	75%	54%
Single	25%	46%
Income:		
Income Under 10K	50%	21%
Income Over 10K	50%	79%
Race:		
White	100%	99.5%
Black	0%	<1%
Other	0%	<1%
Living Arrangement:		
Live Alone	25%	20%*
Live with Others	75%	80%*

*statistic for entire county

Sources: U.S. Dept. of Commerce, Bureau of Census, General population characteristics: Census of population, 1980; U. S. Dept. of Commerce, Bureau of Census, General social and economic characteristics: Census of population, 1980; Center of Massachusetts Data and the Center for Aging, Over 65 in Massachusetts: 1980 Census profile.

Table 42: Demographic comparison of sample to populations: Garden City, MI (over 60 years of age)

	Community Active Sample (N=14)	Population
Age:		
Mean Age	68.1 years	69.4 years
Sex:		
Men	36%	43%
Women	64%	57%
Marital Status:		
Married	57%	not available
Single	43%	not available
Income:		
Income Under 10K	not available	13%*
Income Over 10K	not available	83%*
Race:		
White	not available	99.5%
Black	not available	<.5%
Other	not available	<.5%
Living Arrangement:		
Live Alone	36%	18.5%
Live with Others	64%	81.5%

*For entire population; available data not broken by age.

Sources: U.S. Dept. of Commerce, Bureau of Census, General population characteristics: Census of population, 1980; U. S. Dept. of Commerce, Bureau of Census, General social and economic characteristics: Census of population, 1980.

Table 43: Demographic comparison of sample to populations: Providence, RI (over 60 years of age)

	Homebound Sample (N=25)	Population
Age:		
Mean Age	77.7 years	71.0 years
Sex:		
Men	15%	40%
Women	85%	60%
Marital Status:		
Married	11%	55%
Single	89%	45%
Income:		
Income Under 10K	100%	75%
Income Over 10K	0%	25%
Race:		
White	78%	98%**
Black	15%	1%**
Other	7%	1%**
Living Arrangement:		
Live Alone	80%	26%
Live with Others	20%	74%

*statistic for entire county

**statistic for over 65 population

Source: State of Rhode Island Dept. of Elderly Affairs, Data and resource guide for Rhode Island's elderly and unpublished data.

APPENDIX D

PERCEIVED GENERAL SOCIAL SUPPORT

Table 44: Multiple regression of perceived general support.

Social Support Measures	Perceived General Support: Community Active	Perceived General Support: Homebound
Subjective Measures		
Perceived Support from Friends	.44[c]	.21
Perceived Support from Family	.17	.31[b]
Perceived Support from Neighbors	.12	.06
Total R^2	.33[c]	.22[a]
Objective Measures		
Number of Contacts	.03	.21
Frequency of Contacts	.23	-.05
Marital Status	.17	*
Total R^2	.39[c]	.25[a]
ΔR^2	.06	.03

In all multiple regression analyses, subjective variables are entered together as step 1 and objective variables entered together as step 2. Numbers represent standardized regression coefficients.
*Tolerance<.001
[a]p<.05; [b]p<.01; [c]p<.001