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I am submitting herewith a dissertation written by Mary Jane Tremethick entitled "Social Support and Health Care Utilization in an Aged Population: A Comparison of Private Residence and Assisted Living Dwellers in East Tennessee." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Human Ecology.

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SOCIAL SUPPORT AND HEALTH CARE UTILIZATION IN AN AGED POPULATION: A COMPARISON OF PRIVATE RESIDENCE AND ASSISTED LIVING DWELLERS IN EAST TENNESSEE

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Mary Jane Tremethick
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DEDICATION

This dissertation is dedicated to my husband and sons

Martin Tremethick

Kevin Powell

and

Armand Powell

for their continual patience, encouragement, and support.

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ABSTRACT

The primary purpose of this study was to investigate the level of social support in an aged population with deficits in activities of daily living. The social support for the aged residing in assisted living was contrasted with the social support of the aged who remained in a private dwelling and received home health services to assist with activities of daily living. The secondary purpose, was to correlate the level of social support to health care utilization and through the use of Andersen's Behavioral Model, social support was investigated as a predictor of health care utilization.

Eighty individuals from each setting were individually interviewed with a demographic sheet and the Lubben Social Network Scale. Answers were obtained orally and the same interviewer was used with all participants for objectivity and consistency.

The level of social support among the home health participants was found to be significantly higher than the level of social support among the assisted living participants ($p < .05$). Home health participants were at a moderate risk for social isolation, where as the assisted living participants were at a high risk for social isolation. There was no correlation between health care utilization and social support among the aged residing in the home ($p > .05$). There was a weak correlation between

health care utilization and social support among the aged residing in assisted living facilities (r = .213, p < .05).

While the regression model for health care utilization was significant, with age (being younger), gender (being male), transportation problems (none), lower rating of health, and a higher total number of medical diagnoses explaining 39% of the variability of health care utilization in the sample, the interaction and main effects of interest to this study were not significant. Social support did not impact the model, nor did the interaction of social support and setting.

The aged are at an increased risk for social isolation as a result of age related losses. Due to the importance of the relationship between social support and health noted in the literature, further study is suggested to determine interventions that have a positive impact on social support in various living settings.

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CHAPTER I

FORMULATION AND DEFINITION OF THE PROBLEM

Introduction

This study investigated social support in an aged population with deficits in activities of daily living. The level of social support for the aged residing in assisted living was contrasted with the social support of the aged who remained in a private residence. Secondarily, the level of social support was correlated to health care utilization and through the use of Andersen's Behavioral Model, social support was investigated as a predictor of health care utilization.

The Statement of the Problem

The purpose of this study was to determine if there was a significant difference in social support between the aged residing in assisted living facilities and the aged residing in private residences receiving home health services in the East Tennessee Development District. The secondary purpose of this study was to determine if social support level impacts health care utilization among the aged residing in assisted living facilities and the aged residing in private residences who received home health services. Subjects were included from the following counties: Anderson, Blount, Campbell, Claiborne, Cocke, Grainger, Hamblen, Jefferson,

Knox, Loudon, Monroe, Morgan, Roane, Scott, Sevier, and Union.

The following research questions and hypotheses were developed to address the purpose of the study:

1. What is the level of social support among the aged living in private residences receiving home health services?

2. What is the level of social support among the aged residing in assisted living facilities?

3. How does the level of social support among the aged residing in assisted living facilities differ from the social support among the aged living in private residences receiving home health services?

Null Hypothesis-1: The social support among the aged residing in assisted living facilities will not be greater than the social support among the aged living in private residences receiving home health services.

4. How does the level of social support affect health care utilization among the aged residing in assisted living facilities?

Null Hypothesis-2: As social support increases there will not be a decrease in the level of health care utilization among the aged residing in assisted living facilities.

5. How does the level of social support affect health care utilization among the aged living in private residences receiving home health services?

Null Hypothesis-3: As social support increased there will not be a decrease in the level of health care utilization among the aged living in private residences receiving home health services.

6. Is social support a predictor of health care utilization among the aged residing in assisted living or among the aged living in private residences receiving home health services?

Null Hypothesis-4: Social support is not a predictor of health care utilization among the aged residing in assisted living or among the aged living in private residences receiving home health services.

Need for the Study

The aged are important targets for the study of health promotion for various reasons. Healthy People 2000 (U.S. Department of Health and Human Services, 1991) cited life changes inherent in the aged, such as changing social roles and retirement, as a basis to acknowledge the importance of social support in the aged's environment. Another important motivation in the study of environmental factors and health promotion and the aged is the rising cost of health care.

The price of health care has steadily increased in the United States (Vincenzino, 1995). Escalating costs of health care are influenced by the increased number of aged and their disproportionate consumption of health care. As a nation, the aged are the fastest growing segment of the population. In 1995 individuals over the age of 65 are estimated at 13% of the total population. In projecting to 2030 this segment is expected to increase to 20% (U.S. Bureau of the Census, 1995).

This forecasted increase of the aged population significantly impacts the resources needed to cover their projected health care needs. Lubitz, Beebe, and Baker (1995) studied the cost of Medicare payments and reported a projected $98 billion increase when contrasting the lifetime benefits of enrollees in 1990 to those in 2020. While only 25.7% of this growth can be attributed to increased life expectancy, 74.3% was due to the precipitous increase in the number of enrollees as the baby boomers reach the Medicare access age of 65. Compounding the financial issue is the high volume of health services that the aged utilize. In 1993 the average health care cost per capita was $1776. However, these costs were much higher for the 65 and older category which ranged from $2,610 to $2,883 (U.S. Bureau of the Census, 1995). This disparity in consumption is apparent as the aged comprise 12% of the population yet use 33% of the health care dollars (Holloway & Pokorny, 1994).

Long term care is an important consideration in the health care utilization of the aged. In many states, 85-95% of public health care funding for long term care is consumed by nursing homes (Bowe, 1993). In recent years, long term care options have extended from nursing homes to community long term care and include such options as continuing care retirement villages, assisted living facilities, and home health services that facilitate remaining in the home. Although some of these options have been analyzed on the basis of financial viability, (Garner & Mercer, 1982; Moore, 1993; VanderMeer, 1993), little has been done to determine if the housing options are nurturing to the aged. This is especially true of assisted living. Rubinstein (1995, p. 103) states "Assisted living offers even less in the way of research or generalizations. For example, to date there is virtually no research that has been person- or client-centered."

Understanding how the various housing options affect the aged on the individual level is vital in promoting health. The importance of housing as a means of health promotion was brought out by Halkett, (1988) "...despite the view that housing is not health care: good housing is one of the best preventive health-care measures." One of the ways that housing can promote health is through the availability of social support in the various settings.

Cassel (1976) discusses social support's role in disease prevention:

> With advancing knowledge, it is perhaps not too far-reaching to imagine a preventive health service in which professionals are involved largely in the diagnostic aspects--identifying families and groups at high risk by virtue of their lack of fit with their social milieu and determining the particular nature and form of the social supports that can and should be strengthened if such people are to be protected from disease outcomes (p. 121).

This conclusion was reflected in Healthy People 2000 (U.S. Department of Health and Human Services, 1991), where it was recognized that social support networks were crucial in promoting the health and independence of the aged.

Measuring the level of social support for the aged specific to the options of residence is important in determining how social support affects health (Berkman & Syme, 1979; Dean & Ensel, 1983; House, Robins, & Metzner, 1982; Husaini, Newbrough, Neff, & Moore, 1982; Read, McGee, Yano, & Feinleib, 1983; Ruberman, Weinblatt, Goldberg, & Chaudhary, 1984; Williams et al. 1992). Based on a review of the literature, which included various age and ethnic groups, House, Landis, and Umberson (1988) contend social support rivals cigarette smoking, blood pressure, blood

lipids, obesity, and physical activity as a major risk factor in disease.

Theoretical Framework

The most widely recognized framework for assessing health care utilization is Andersen's Behavioral Model. This model is frequently used with the aged population (Wolinsky & Arnold, 1988). Ward (1977) contends that the behavioral model is relevant to the measurement of health care utilization due to the breakdown of predisposing, enabling, and need characteristics which are particularly important in analyzing health care use in the aged. Predisposing characteristics look at those things that existed prior to the onset of the illness. They include age, sex, marital status, and values concerning health and illness. Enabling conditions describe the means individuals have in obtaining necessary health care services including individual assets such as income and insurance coverage, as well as community resources. Need variables look at the illness level and can be measured perceptively by the individual or diagnosed by a health care physician (Aday & Andersen, 1974; Andersen & Newman, 1973; and Aday, Andersen, & Fleming, 1980).

While social support is a complex-multifaceted construct, the social support measures used with Andersen's Behavioral Model tend to include such crude measures as

race, education, employment status (Wolinsky & Coe, 1984), and limited measures of kin and nonkin support (Wolinsky, Stump & Johnson, 1995). In order to assess the effects of social support on health care utilization the various facets of social support must be investigated.

Basic Assumptions

The following statements were assumed to be true for this study:

A. Participants' responses were honest.

B. Participants understood questions.

C. Tools used to assess social support and predictors of health care utilization were valid and reliable.

Delimitations

The following delimitations were imposed based on the purpose of the study. The study was delimited to:

A. Aged assisted living residents who had been in the assisted living facility for one year.

B. Aged clients who were without significant cognitive deficits as measured by lack of a dementia diagnosis and being oriented to person, place, and time via registered nurse assessment.

C. English speaking persons 65 years of age and older residing in East Tennessee.

D. Home health participants receiving assistance with activities of daily living in private residences and aged clients of assisted living facilities receiving assistance with activities of daily living.

E. Members of the population who are served by an agency or facility that approved participation.

Limitations

The following was a limitation of the study:

A. The health care utilization measures were based on participant recall over the past year which may differ from actual usage.

Definition of Terms

The section operationally defines the constructs used in this study.

A. Social support a multidimensional construct which includes measures of contact with family and friends, and interaction with interdependent mutual support relationships as measured by the Lubben Social Network Scale.

B. Health care utilization includes the number of physician office visits over the past 12 months and the number of days hospitalized over the past 12 months.

C. Assisted living facility a group residential program not licensed as a nursing home or mental health facility, which provides personal care for assistance in activities of

daily living, and has the ability to respond to unscheduled needs for assistance 24 hours a day.

D. Home health care services provided through a licensed home health care agency which assists with activities of daily living in the home of an individual by health care personnel.

E. Aged included individuals 65 years of age or older.

F. East Tennessee defined by the East Tennessee Development District which encompasses the following Tennessee counties: Anderson, Blount, Campbell, Clairborne, Cocke, Grainger, Hamblen, Jefferson, Knox, Loudon, Monroe, Morgan, Roane, Scott, Sevier, and Union.

G. Activities of Daily Living measures of the ability to perform the following activities: bathing, dressing toileting, transferring, eating, and walking.

Summary

This study examined the effect of housing alternatives on social support and health care utilization among the aged. Social support's role in illness has been well documented, however it's role in health care utilization through Andersen's Behavioral Model has not been well established. Understanding the linkage between housing, social support, and health care utilization in the aged is important as the aged are the fastest growing segment of the population and use a disproportionate share of health care.

If social support does rival cigarette smoking, blood pressure, blood lipids, obesity, and physical activity as major risk factors for disease with "similar implications for future research and public policy" (House, Landis, & Umberson, 1988, p. 541) then in the interest of health promotion the level of social support in various housing options for the aged is in need of study.

The next chapter, Chapter II, reviews the literature as it relates to content, methodology, and content and methodology.

CHAPTER II

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Introduction

The purpose of this study was to analyze the differences in social support between the aged residing in assisted living facilities and the aged residing in private residences receiving home health services in East Tennessee. The secondary purpose was to determine if social support level impacts health care utilization among the aged residing in assisted living facilities and the aged residing in private residences who received home health services. This chapter outlines the content issues of health care utilization, social support as a mediator of illness, and housing alternatives; the methodology issues of measurement of social support and health care utilization; and the content and methodology issues of measurement of social support and health care utilization among housing alternatives.

Studies Related to Content

Health Care Utilization

Health care utilization encompasses the ability of the individual to access and utilize health services such as medications, physician, dental, hospital, and nursing home care (Andersen & Newman, 1973). The most widely recognized framework, for studying health care utilization is

Andersen's Behavioral Model (Andersen, 1968). As discussed in Chapter II, this model is made up of predisposing, enabling, and need conditions that are predictors of health care utilization. Predisposing characteristics exist prior to the onset of an illness and include such factors as age, sex, marital status, and values concerning health and illness. Enabling conditions include the means that individuals have to obtain health care services such as income, insurance, or community resources. Need variables describe the level of illness and include both individual perceptions of illness and illnesses diagnosed by a physician (Aday & Andersen, 1974; Aday, Andersen, & Fleming, 1980; Andersen & Newman, 1973). The behavioral model is well suited to the study of social support in various housing options because it goes beyond the individual and takes into account the environment that the individual lives in, as well as social forces (Andersen & Newman, 1973). This allows the multiple factors that influence overall health to be considered.

The need for consideration of economic status is evident in research by House et al. (1990) who reported that individuals in lower socioeconomic levels showed an increase in morbidity and functional limitations during middle and early old age, while individuals in higher socioeconomic levels postponed these until later in life. Age, education, and income were reported to have a strong relationship with

chronic conditions, functional status index, and limitation of daily activities. In understanding this postponement of morbidity and functional limitations it is important to note that lower socio-economic status has been correlated with increased psychosocial risk factors (House et al., 1994). These psychosocial risk factors including poorer health habits, lower levels of social relationships and support, higher levels of chronic and acute stress, and decreased self efficacy were related to higher levels of chronic conditions and decreased functional status (House et al., 1994).

Going a step further and linking these psychosocial risk factors to health care utilization has been difficult. Measures of social support not linked to the behavioral model have shown a positive correlation with health care utilization. Lubben (1988) applied the Lubben Social Network Scale to three health measures, mental health, health practices, and hospitalizations over six days. Social support demonstrated a significant relationship to all three health measures. A later study (Lubben, Weiler, & Chi, 1989, reported that the association of a low social network was second only to smoking in determining the likelihood of being hospitalized or being hospitalized for at least six days.

While this significance has been demonstrated outside Andersen's Behavioral Model, difficulty arises in

application of the model. The tendency is to include only limited measures of social support such as race, education, and employment status (Wolinsky & Coe, 1984). In an attempt to better define social support measures, Wolinsky and Johnson (1991) included measures of social support such as kin and nonkin supports. While the overall predictability of the behavioral model did not increase, nonkin supports were associated with decreased bed-disability days, length of stay in the hospital, and the likelihood of being admitted to a nursing home.

Supplementary social support measures applied by Nelson (1993) slightly increased the model's predictability. While the increases were statistically significant, the author questioned whether the large sample size may have had an impact on the results. Although Nelson increased the number of measures of social support typically used in the behavioral model, the actual measures remained inadequate. As is common with studies on aged health care utilization, Nelson used secondary data which limited her ability to investigate the social support of the participants. The addition of an adequate assessment of social support is important; social support has long been demonstrated as a mediator of illness (Berkman & Syme 1979).

Social Support as a Mediator of Illness

Social support has been reported to be an intervening variable in the stress disease factor (Cobb, 1976). However, the means through which this occurs are very complex and not thoroughly understood. There are two theories that attempt to explain the complex relationship between social support and health. The first is the main effects model which proposes that social support directly affects health through the positive attributes that come with social support (i.e. sense of well being, acceptance, knowing others care and feelings of contentment). These effects are believed to be constant and do not require a stressful situation (Cohen & Syme, 1985; Thoits, 1984). There has been considerable research that supports this belief and the following studies report a significant relationship between health indicators and social support without relating this relationship to the adverse effects of stressful life events.

Berkman and Syme (1979), in studying 9 year mortality data, reported that people with low levels of social support were at an increased risk of dying from ischemic heart disease, cancer, cerebrovascular, and circulatory disease. This was independent of self-reported physical health status, fear of death, socioeconomic status, and actions affecting health such as smoking, alcohol consumption, lack

of physical activity, obesity, and lack of preventative health services. The results were not gender specific.

House, Robbins, and Metzner (1982) replicated this study with 2754 adults between the ages of 35 and 69. Even after controlling for age, health, and disease status, social integration was related to mortality. As males' social interaction increased their mortality decreased. This relationship was not significant for females. Blazer (1982) reported that support, perceived support, frequency of social interaction and roles, and available attachments predicted mortality status in the aged. Perceived support had the highest predictive value. Schoenbach, Kaplan, Fredman, and Kleinbaum (1986) also reported a relationship between decreased social ties and increased risk of mortality, primarily among aged whites.

Williams et al. (1992) reported a relationship between mortality and social/economic resources of subjects who were treated for coronary artery disease. Those individuals who were not married and did not have a confidant had the lowest survival rate and were three times more likely to die in 5 years when compared to those individuals who were married or had a confidant. This result was not gender specific.

The second theory in the relationship between social support and health is the stress buffering theory. This theory states that the effects of social support occur only when an individual encounters stress (Cohen & Syme, 1985).

In studying the effect social support has on the immune system Kaplan (1991) states that "...the literature is compatible with the conclusion that the absence of social support renders the person vulnerable to the experience of adverse life circumstance and indirectly to decrements in immune function" (p 918). Studies correlating social support and immune function have supported this statement.

Although not initially focusing on social support, Levy, Herberman, Maluish, Schlien, and Lippman (1985) found that social support played a role in the variance of natural killer cell activity. Natural killer cells aid in arresting metastasis.

In aged subjects, McIntosh, Kaplan, Kubena, and Landmann (1993) reported that while the percentage of kin in the intimate network for males increases the lymphocyte count, frequent interaction with members of the intimate network increases the lymphocyte count in females. These effects occurred in response to specific stressful life events. For the females this was in response to family or legal problems and with the males recent sexual dysfunction.

Overall mortality has also been linked to the buffering effects theory. In a study of both men and women from 30-69 years of age, high levels of life stress and high levels of social isolation were both independent contributors to risk of death (Ruberman, Weinblatt, Goldberg, & Chaudhary, 1984).

As a mediator of illness, adequate levels of social support are important. However, social support can be hindered or facilitated by the characteristics of various housing options. The following section will explore the housing alternatives available to the aged and the relationship of these characteristics to social support.

Housing Alternatives

At one time institutional care dominated the long term care market and left the aged client with little choice for long term care options. At the center of this issue lies the need for the aged to exercise their right to viable options of care. Mead (1991), a nursing home resident, reiterates this belief:

> When there is need for supportive care of health and assistance in performing the activities of daily living, conditioned by physical deterioration or advancing years, a person may well choose the benefits proffered by residence in a nursing home. But in considering the option, there must be a frank analysis of what kind of life can be expected within the institution and of the adjustment the applicant must make to the existing regime. In addition, an applicant must consider whether it will be possible to maintain his or her own social and emotional life (p. 10).

In examining the fears that the aged have about nursing

homes, lack of choice was a prominent issue. "..some of the anxiety about nursing homes appears to be a reaction to the possibility that any option may be foreclosed in the matter of how their long-term care needs will be handled" (Biedenharn & Normoyle, 1991, p. 112). This increasing need for choice in residence is evident in the new long term care policy underwritten by John Hancock (Koko, 1994). In it they not only cover the traditional institutionalized long term care but also cover long term care in the home and assisted living facilities (Koko, 1994).

While 85-95% of the long term care funding traditionally goes to nursing homes (Bowe, 1993), the aged now have some choice in long term care such as continuing care retirement villages, assisted living facilities, and home health services that facilitate remaining in the home. Although these options have been investigated on the basis of financial viability (Garner & Mercer, 1982; Moore, 1993; VanderMeer, 1993), environmental factors such as social support between the long term care options has not been investigated. This study focused on community long term care and assisted living facilities. These two options serve similar and large enough populations to facilitate the study of social support and housing options. This next section will briefly discuss the histories of these two options: community long term care and assisted living facilities.

Community Long Term Care

Community long term care is defined as the provision of basic and skilled therapeutic services for an extended period of time in the community setting. Community long term care has been a tradition in the United States. It flows naturally from the informal caregiving that has occurred for generations. VanderMeer (1993) states that 80% of the home care given to older adults is provided by the family. The need for more formal home care evolved along with the increased funding for home health services and the implementation of the Diagnostic Related Groups (DRGs) (Fetter, Brand, & Gamache, 1991). Although DRGs were originally created as a means of measurement and evaluation of hospital performance mandated by Medicare, they have become the prospective payment system for both Medicaid and Medicare (Fetter, Brand, Gamache, 1991). In this role DRGs have been an attempt to control the escalating cost of health care. The hospital is allotted a specific sum of money based on the patient's admitting diagnosis. The hospital makes a profit if the patient is discharged early and a loss if discharged is delayed. These financial incentives have encouraged hospitals to discharge patients immediately when medically stable. This often results in a need for continued health care in the home.

The aged heavily utilize formal home health care; those 65 and older comprise 74.4% of the home health patients.

(U.S. Bureau of the Census, 1995) Home health can be extensive with an average length of service totaling 324 days (Dey, 1996).

There are many advantages of remaining in one's home facilitated by home health care. Fogel (1992) lists the benefits of remaining in one's household as relating to independence and privacy with control over the physical characteristics of the home, familiarity of the home environment, continued access to the neighborhood with social support networks, benefits of activities of home maintenance, place to entertain, and lastly as a locus of meaning. On the community level, remaining in the same neighborhood facilitates continuity of social support, predictability of community environment, and a continued sense of community (Unger & Wandersman, 1985). A well developed social support network, through residential stability, was reported to decrease the need for home health services (Wolinsky & Johnson, 1991). While remaining in one's home has many positive aspects, it also has negative aspects as well.

With age, proximal friends are very important as physical and financial limitations may restrict the aged individual to a limited area. In the community setting several barriers may exist for the aged individual especially when one considers that clients in need of basic

care through home health aide services are typically older women (Hays & Willborn, 1996).

Fear of crime is another barrier. As health deteriorates, rundown neighborhoods may cause social isolation. The aged, especially those with limited education, have a propensity to live in rundown neighborhoods due to financial limitations (Krause, 1993). Krause (1993) reported that deterioration of one's residence may cause physical safety problems that decrease social interaction. Decreased mobility combined with stairwells in need of repair or poor vision combined with inadequate lighting may isolate the aged in their homes. Neighborhoods too tend to deteriorate and have a negative effect on social support systems. Krause (1993) reported that as neighborhoods deteriorate, a sense of distrust pervades the neighborhood. This distrust proved to have a negative impact on the maintenance of social ties.

Assisted Living

Assisted living is defined by Kane and Wilson (1993) as "any group residential program that is <u>not</u> licensed as a nursing home, that provides personal care to persons with need for assistance in the activities of daily living, and can respond to unscheduled needs for assistance that might arise" (p. 1). Assisted living emerged from congregate housing which began in the 1970's. Kane and Wilson (1993)

define congregate housing as "..complexes with separate apartments and some hotel services, typically including housekeeping and one or more group meal. Personal care and health oversights are usually not part of the service" (p. 4). The first Congregate-Housing Act was passed in 1970; however it was not until 1978 that the full realm of services now associated with assisted living were authorized (Chellis, Seagle, & Seagle, 1982, p. 4-5). Through the provision of services such as meals, housekeeping, laundry, and personal care, many of the aged residents of public housing who could not ordinarily afford these services were able to remain independent. This accommodation, based on individual need, offered beneficial effects for the tenants who were able to "age in place" (Lawton, Greenbaum, & Liebowitz, 1980), as well as financial benefits for the government. The income level of aged residents in public housing was low enough for qualification to Medicaid and these aged residents typically had few assets. Therefore, once institutionalized, the government paid for the institutionalization. The costs between keeping an aged person in congregate housing compared to a nursing home is impressive. Minnesota's Congregate Housing Services Program reported a $10,000 a year savings per participant per year (Maximizing Supportive Services, 1985). Heumann (1990) criticized early cost comparisons such as this one. He felt these early studies exaggerated savings due to the lack of

control over equivalent groups. In studies that controlled comparable support needs, Heumann reported a cost savings of $300 to $6072 per resident per year. Again, as with home health care, cost savings decreased as the individuals in congregate housing required higher levels of care.

In response to escalating Medicaid costs some states have instituted innovative assisted living programs. Oregon was a pioneer in this area by encouraging and funding the development of assisted living facilities. Through a 1989 Medicaid waiver, aged residents who are eligible for nursing home care can receive assisted living benefits. These benefits are capped at 80% of nursing home costs (Kane & Wilson, 1993). This 20% savings over nursing home costs is even greater when one considers the inflation of nursing home costs. In 1989 an average nursing home cost $48 a day and increased over the next three years to $75 a day. During the same three year period assisted living facilities increased from $40 to $49 (Kane & Wilson, 1993).

Over time, the private market began to see the potential of assisted living. Currently 1.5 million aged and disabled people reside in assisted living facilities (Schwenk, 1993). Furnad (1993) states that assisted living will be the fastest growing segment of the senior housing market and is projected to grow 150% by 2005 (Dewey, 1994). Assisted living is covered by a John Hancock long term care

insurance plan at 100% of the nursing home daily benefit (Koko, 1994).

Guidelines for assisted living vary from state to state (Kane & Wilson, 1993; Olson, 1994) and so does the definition of assisted living. However inherent in each of the definitions is the promotion of independence through assisted group living (Grape, 1993). The average length of stay for assisted living facilities is 26 months (Kane & Wilson, 1993).

One of the advantages of congregate housing is the ability of people to live close to one another facilitating the development of informal supports. This statement is based on a study conducted by Nahemow and Lawton (1975) which indicated that both similarity and propinquity had a significant effect on friendship formation. Subjects in this study were made up of 270 residents in a low income housing unit. Fifty-two percent of the residents met their current friends in hallways, elevators, and the entrance area of their own building. More importantly, 88% of all first listed friends were from the same building. This was true regardless of race, sex, or age. Similarity was noted in age, race, and sex with 60% of all listed friends being from the same age category, 72% from the same race, and 73% from the same gender.

While proximity would be an encouraging factor in the development of informal networks, it does not guarantee that

informal networks evolve. A study of aged women in age-segregated housing and age-integrated settings reported that proximity predicted frequency of interaction (Adams, 1985). However, friendships take on varied meanings and those friendships that included emotional closeness were not related to proximity but to physical distance. The author noted that this is due to duration and emotional closeness. Newly formed relationships based on proximity have not had the time to develop as deeply as old, but distant friendships (Adams, 1985).

While assisted living facilities have not been studied in relation to informal networks of support the congregate housing from which they originated have been studied. Sheehan (1986) reported differing perceptions of supports by congregate housing managers and the tenants. While 90% of the managers felt that their tenants provided informal supports to one another, the tenants saw this assistance as relative to the amount of assistance needed. Following hospitalization with temporary dependence, 58% stated that help was provided to neighbors. However, this level of help drops to 24% when residents become mentally confused. If a resident suffered from total disability, only 18% of the residents reported a willingness to provide support for that resident.

In investigating actual help received, Ehrlich, Ehrlich, and Woehlke (1982) reported that only 12% of

congregate residents received help from their neighbors; while 53% of the residents stated that they had a neighbor that could assist them if they become sick.

Parris, Stephens, and Bernstein (1984) also studied aged residents of congregate housing focusing on social support and subsequent well-being. The authors stated that every resident was able to specify one notable relationship with a family member and 89% of these residents were able to specify a notable relationship with a friend. Family relationships were considered the most important.

Family closeness was also important to residents of assisted living facilities. In investigating the importance of family propinquity, 70% of the assisted living facilities surveyed reported that their clients chose their current facility based on family proximity (Seip, 1989).

Typically assisted living facilities employ an activities director (Kane & Wilson, 1993). A structured activities program has been found to be a major determinant of activity participation in congregate facilities (Lemke & Moos, 1989). Taking part in social activities has been reported to facilitate adjustment to relocation in the congregate setting (Armer, 1993).

Summary

The use of Andersen's Behavioral Model provides a framework for the investigation of factors that affect

health care utilization. Although studies have shown social support to be related to health care utilization, previous measurements of social support with the model have been inadequate and unable to support this relationship. The adequacy of a social support measure is important as a lack of social support has been correlated with disease processes, poorer health, and overall mortality.

The aged are at increased risk for morbidity, mortality, decreased social support systems, and increased health care utilization. Whether support systems vary between housing options is not known. While home health assistance has the advantages associated with aging in place, it also has the disadvantage of the potential loss of support systems with age. Assisted living is a relatively new form of care that lacks substantial research to determine its influence on social support. When contrasted to congregate housing, assisted living has the potential to provide adequate social support.

Studies Related to Methodology

Measurement of Social Support

Social support research has been criticized in the literature for its definitional inadequacy (Ducharme, Stevens, & Rowat, 1994). This inadequacy is due in part to the complexity of the construct. To better understand this construct, distinctions must be made among the various

facets of social support (Broadhead, et al., 1983). This next section will explore previous research in measurement of social support. Distinctions will be made between perceived versus actual support, informal versus formal support, family versus friend support, and the four dimensions of social support defined by the National Academy of Sciences.

The National Academy of Sciences recognizes four types of social support emotional support, integration, tangible help, and informational support. These four measures are described as:

> (1) giving emotional support (showing concern and caring, indicating that the person is valued, providing a sympathetic ear); (2) conveying a sense of shared obligations; (3) providing tangible help when needed; and (4) suggesting information about how to cope (Cohen, et al., 1982)

In the study of social support most researchers look at one or more of these facets of social support. Each of the four types of social support can be measured through perceived and actual social support, informal versus formal support, and family versus friend support.

Perceived Versus Actual Support

Perceived social support is concerned with the subjective feelings of the individual in relation to social

support. Actual support is that support that is literally received by the individual. The tools used to measure perceived support can be divided into three types: those that measure perceived available support (Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Cutrona, 1986; Stokes, 1983), those that measure the adequacy of perceived support (Procidano & Heller, 1983), and those that measure both the perceived available support and the adequacy of this support (Brandt & Weinert, 1981; Henderson, Byrne, & Duncan-Jones, 1981; Sarason, Levine, Basham, & Sarason, 1983).

These measures of perceived support have been criticized for confounding the measures of social support. Krause and Markides (1990) state: "While such measures identify social ties that might provide support in stressful situations, they do not indicate the extent of support that is actually received, and they tell us little about the quality and content of these relationships (p. 38)"

To determine actual support several measures have been developed (Asher, 1984; Barrera, Sandler, & Ramsey, 1981; Dean, Kolody & Wood, 1990; House, Robbins, & Metzner, 1982; Lubben, 1988; McIntosh, Kaplan, Kubena, & Landmann, 1993; Nelson, 1993). Actual support measures (House, Robbins, & Metzner, 1982) and satisfaction with actual social support measures (Krause & Markides, 1990) have been correlated with

mortality and morbidity as well as health care utilization (Lubben, 1988; Lubben, Weiler, & Chi, 1989).

Formal Versus Informal Measures of Support

Formal versus informal measures of social support provide a division based on the relationship of the support system to the individual. Informal support measures and their effect on the aged are measured more frequently in research studies. Krause, Herzog, and Baker (1992) make the distinction between informal as including friends, relatives, and neighbors; and formal as including religious organizations, political, labor, or senior citizens group, or local or national organizations such as United Way or hospitals.

Formal and informal supports can be measured by support given or received by the individual. Rubinstein, Lubben, and Mintzer (1994) acknowledge the need to study this reciprocal relationship by determining "which programs can foster and nurture those often unheralded things that elders do for others" (p. 67). While there have been numerous studies on receiving support little has been done on providing support to others. One such study found that elders who provided informal support to others had increased levels of well-being (Krause, Herzog, & Baker, 1992).

In contrasting receipt of informal versus formal support it was found that receiving informal support was a

better predictor of decreased morbidity (Reed, McGee, Yano, & Feinleib, 1983), and decreased mortality (Berkman & Syme (1979). Receiving informal social support has also been associated with improved physical health (Cutrona, 1986; Russell, & Rose, 1986; Thompson & Heller, 1990), improved psychological health (Cutrona, 1986; Dean, Kolody, & Wood, 1990; Ensel & Lin, 1991; Rook, 1984; Thompson & Heller, 1990), increased well-being (Chappell & Badger, 1989), and improved immuno-function (McIntosh, Kaplan, Kubena, & Landmann, 1993). The ability of the aged to provide informal social support to others is important (Rubinstein, Lubben, & Mintzer, 1994) and has also been reported to have a positive affect on well being (Krause, Herzog, & Baker, 1992). While informal social support has a positive impact on physical and mental health, friends and family play different roles in this process.

Family Versus Friend Support

Informal social support can be further defined by the distinction of friend versus family support. Procidano and Heller (1984) reported the two constructs to be separate and valid. Dean, Kolody, and Wood (1990) concluded that family support was important to psychological well-being. The impact on well-being by perceived family support was also reported by Thompson and Heller (1990). Aged individuals who had low perceived family support rated lower on

psychological well-being regardless of perceived friend support.

While these informal measures of support from family influence health, the impact of spousal relationship varies by age with increased mortality observed among the younger widowed (Berkman & Syme 1979; House, Robbins, & Metzner, 1982). As age increases, the risk of death following widowhood decreases. While the relative risk of a widowed male aged 18-44 was 2.61, the relative risk decreases until it hits a low of 1.16 at 75 years or older. Females showed a less stable pattern. However females over the age of 75 demonstrated the second lowest relative risk (Helsing, Szklo, & Constock, 1981). Subsequent studies have not found marital status to correlate with mortality in the aged (Blazer, 1982) or the aged poor (Zuckerman, Kasl, & Ostfeld, 1984). Seeman, Kaplan, Knudsen, Cohen, and Guralnik (1987) reported that while the best predictor of mortality for the young was widowhood, the best predictor after the age of 70 was friends and family. Findings of this study helped to explain the differences with mortality in the young and old as they relate to marital status. Seeman et al. (1987) reported that in contrasting marital status and ties with close friends, those under 60 placed a higher importance on marital status while those over sixty placed a higher importance on ties with close friends and/or relatives.

Social Support and Aging

Age decreases the number of available social supports. Lang and Carstensen (1994) reported that the number of individuals listed in support systems of the very old (74-104) diminished with age, however the subjects continued to keep close emotional relationships. Although the aged may continue to retain close emotional relationships, the make up of their support system may take on a different configuration with advancing age. Connidis and Davies (1992) note an increase in the family's role as the individual ages. With age, the likelihood of a friend taking on the role of a companion or confidant decreased and the likelihood of a family member taking on this role increased. The authors question if this was related to a decrease in the number of proximal friends.

Factors Associated with Health Care Utilization Measures

For this review, health care utilization measures were limited to physician office visits and the number of days spent in the hospital. Demographic and social variables that significantly impact the use of these health services with the behavioral model included: age (Branch et al., 1981; Nelson, 1993. Wolinsky & Coe, 1984), education (Branch et al., 1981; Evashwick, Rowe, Diehr, & Branch, 1984; Wolinsky & Coe, 1984), gender (Branch et al., 1981; Evashwick, et al., 1984; Nelson, 1993; Wolinsky & Coe, 1984)

and race (Evashwick, et al., 1984; Nelson, 1993; Wolinsky et al., 1989). While marital status demonstrated an inconsistent relationship with social support measures and health in the aged (Blazer, 1982; Helsing, Szklo, & Constock, 1981; Seeman, Kaplan, Knudsen, Cohen, & Guralnik, 1987; Zuckerman, Kasl, & Ostfeld, 1984) living alone consistently affected health care utilization (Evashwick, et al., 1984; Nelson, 1993; Wolinsky & Coe, 1984).

Enabling conditions describe the means individuals have in obtaining necessary health care services including individual assets such as income and insurance coverage, as well as community resources. Those that have had a significant impact on health care utilization included: income (Nelson, 1993; Wolinsky & Coe, 1984), having Medicaid (Branch el al., 1981; Evashwick, Rowe, Diehr, & Branch, 1984; Wolinsky & Coe, 1984; Wolinsky & Johnson, 1991), having private insurance (Nelson, 1993; Wolinsky & Coe, 1984; Wolinsky & Johnson, 1991), having a regular physician (Branch el al., 1981; Evashwick, et al., 1984; Wolinsky & Coe, 1984), and transportation problems (Branch el al., 1981; Evashwick, et al., 1984; Wan & Odell, 1981). There have also been significant differences in health care utilization based on population density (Nelson, 1993; Wolinsky & Johnson, 1991).

Need variables look at the illness level and can be measured perceptively by the individual or diagnosed by a

health care physician. Need variables that significantly affect health care utilization include: perceived health status (Branch el al., 1981; Evashwick, Rowe, Diehr, & Branch, 1984; Nelson, 1993), activities of daily living (Branch el al., 1981; Evashwick, et al., 1984; Nelson, 1993; Stump, Johnson & Wolinsky, 1995; Wolinsky & Johnson, 1991), physical activity performance (Branch el al., 1981; Evashwick, et al., 1984; Wolinsky & Coe, 1984), and documented health problems (Blaum, Liang, & Liu, 1994; Branch el al., 1981; Stump, et al., 1995).

Summary

As a multifaceted construct, social support has been studied in the aged population and exerts a strong influence on health. Through this review we may conclude that the results of social support research will vary in relation to the aspect of support that is investigated. Secondarily, the type of social support which is successful in influencing health and health care utilization varies by sex and age.

In applying Andersen's model of health care utilization social support has been measured as a predisposing condition. Significant predisposing measures include age, education, gender, race, and living arrangements. Enabling conditions include income, type of insurance, having a regular physician, transportation problems, and population

density. Need variables include perceived health status, activity of daily living function, and documented health problems.

Studies Related in Content and Methodology

Social Support, Health Care Utilization, and Living Arrangements

A recent study (Luggen & Rini, 1995) examined the social networks of the aged in private houses, apartments, government housing, and assisted-living retirement centers. Luggen and Rini (1995) reported that when taken as a whole, 37% of the 62 aged subjects were considered to be isolated. While this research demonstrates the overall inadequacy of social support among the aged, the level of support in specific living arrangements was not addressed. We are left to wonder if this low level of social support is ubiquitous to all living arrangements of the aged or if particular living arrangements can impact the level of social support.

Comparative research on social support and prediction of health care utilization in various care settings is absent from the literature. The next chapter will look at the methodology to address this absence in the literature.

CHAPTER III

METHODOLOGY AND DESIGN

Introduction

The purpose of this study was to analyze the differences in social support and between the aged residing in assisted living facilities and the aged residing in private residences receiving home health services in East Tennessee. The secondary purpose of this study was to determine if social support level impacts health care utilization among the aged residing in assisted living facilities and the aged residing in private residences who received home health services. This chapter outlines the methods and procedures that were used.

The Study Population

The target population for this study was delimited to persons 65 years of age or older in East Tennessee residing in assisted living facilities or in private residences receiving assistance with activities of daily living. A convenient sample of 160 subjects was obtained, 80 from a home health agency in private residences and 80 from assisted living facilities.

The Tennessee Department of Health was contacted and the directory for licensed residential homes for the aged was obtained. Each residential home for the aged was called to determine if they fit the criteria of an assisted living

facility as defined in this research and to determine if the residents fit the criteria of the study. Thirteen assisted living facilities met this criteria and were invited to participate in the study.

During an on-site visit administrators were informed of the intent of the study, instruments to be used in the study, and provisions of confidentiality for the residents and the facility. Permission to proceed with the study was obtained from the administrator and a contact person at the facility or was determined. Nine for profit facilities agreed to participate, therefore, the assisted living subsample reflects 80 residents from these 9 facilities.

The contact person, at each of the assisted living facilities, was contacted and a list was obtained of all clients who met the criteria of having lived in their current living situation for one year, over age 65, aware of person place and time and without a dementia diagnosis, and receiving assistance with at least one activity of daily living.

One non-profit home health agency that covered 13 of the counties of the East Tennessee Development District and had a case load of approximately 700 clients was contacted and invited to participate in the study. During an on-site visit administrators were informed of the intent of the study, instruments to be used in the study, and provisions of confidentiality for the residents and the agency.

Permission to proceed with the study was obtained from the administrator and a contact person at the facility or agency was determined.

The home health subsample was obtained through a computer generated alphabetized list of all clients over the age of 65 who needed assistance with activities of daily living. Team leaders and supervisors then reviewed the client list eliminating those with a documented diagnosis of dementia and/or those disoriented to person, time, and place. The order of data collection from each client was based on when that client would be seen by the registered nurse.

Instrumentation

Two instruments were used in this study. A social support measurement tool (See Appendix A) and a demographic sheet (see Appendix A). These tools assessed information needed to investigate health care utilization through Andersen's predisposing, enabling, and need conditions.

Predisposing characteristics were characteristics that existed prior to the onset of the illness and are broadly defined as demographic and social structure variables. In measuring the levels of predisposing conditions the following were used. Age (number of years), education (number of years), gender (male or female), race (African American, White, Hispanic, or Other), and social support as

measured by the Lubben Social Network Scale (Lubben, 1988). This scale is a modification of Berkman and Syme's Social Network Index (Berkman & Syme, 1979). In modifying the tool Lubben made it a more appropriate measure of social support in the aged population (Lubben, 1988). The tool is a brief screening measure that measures social support through the evaluation of family networks, friend networks, confidant relations, living arrangements, and the ability to help others. The scale has ten questions and each question can result in a score of 0 to 5. The highest possible score would be 50 and the lowest 0. In scoring the response sets, the author weighted items so that increases in score are not simply arithmetic increases in network size. The scale is considered interval data. The items within this scare are highly intercorrelated with a Cronbach Alpha of .70 (Lubben, 1988). It has an interrater reliability of .85 and a high consensus between scores with the tool and social worker judgement of isolation. Subjects considered isolated with the tool were confirmed or considered isolated by social workers in 80% of the cases (Rubinstein, Lubben, & Mintzer, 1994). The tool has been successful in correlating social support and health care utilization (Lubben, 1988; Lubben, Weiler, & Chi, 1989).

To determine the level of enabling conditions the following were measured by client recall: Type of insurance (Medicaid, Medicare, Private, Veteran, or None), regular

source of health care (yes or no), and transportation problems (yes or no). Urban versus rural was assessed via the definition of the U.S. Census (1993). "The Census Bureau defines "urban" for the 1990 census as comprising all territory, population, and housing units in urbanized areas and in places of 2,500 or more persons outside urbanized areas (p. A-11)." Rural areas are those territories, population, and housing units that are not classified as urban. The table of incorporated places was used as a reference for each city or town's status of rural versus urban (Vickers & Cunningham, 1994).

Need conditions were assessed using a perceived health status question effective in the assessment of health status among the aged (Ferraro, 1980; Krause, 1988). Other need conditions were assessed through the number of medical diagnosis and activities of daily living requiring assistance.

The participants were asked if they had been diagnosed with any of the top four causes of mortality for the over 65 age group, heart disease, cancer, stroke, or chronic obstructive pulmonary disease (U.S. Bureau of the Census, 1995). Participants were also asked if they had been diagnosed with the prevalent chronic conditions in the 65 and over population, arthritis/gout, high blood pressure, and diabetes (U.S. Bureau of the Census, 1995). The total number of diagnoses was used in the analysis.

In assessing activities of daily living those listed by the Katz Scale were included: bathing, dressing, toileting, transfer, eating, and walking (Katz, Downs, Cash & Grotz, 1970; Katz, Ford, Moskowitz, Jackson, & Jaffee, 1963). The number of dependent activities of daily living was determined by counting each type of activity of daily living service that the client reported needing assistance with.

Health care utilization was measured by assessing the number of physician visits and days in the hospital during the past 12 months. This was determined by participant recall.

Data Collection

The demographic sheet and social support tool were piloted on a subset of the population. Each home health pilot participant was contacted by phone and was given an explanation of the study, the importance of the information to be received from the participant, the confidential nature of the information obtained, and the right to choose not to participate in all or part of the study. After informing the potential participant of the approximate 15-20 minute time frame for administration, and receiving verbal permission from the participant, an appointment was made for an interview in the client's home. A nursing supervisor from the home health agency introduced the researcher to each of the home health clients. Assisted living

participants were visited without a prior phone call and the researcher was introduced to each of the potential participants by the assisted living facility administrator.

The interview protocol consisted of a reiteration of the explanation of the study, importance of the information received from the participant, the confidential nature of the information obtained, and the right to choose not to participate in all or part of the study. After the subject was given the opportunity to ask questions, written informed consent was obtained. The interviews took place in a private area chosen by the participant. Due to difficulties with reading in the aged population (Hulsman & Chubon, 1989) the tool was administered in an interview setting. Each interview was conducted by the investigator for consistency. The tools were then administered verbally with careful attention being paid to the ability of the participants to understand and answer questions. Administration time averaged 15 minutes with the shortest interview lasting 8 minutes and the longest 20 minutes. From the pilot the following changes were made to the demographic sheet. All of pilot participants had resided in their residences for years. Recording this on the demographic tool which measured by months was inefficient. Therefore, time in current place of residence was modified to reflect years and months. To allow for consistency in cuing the need for assistance with toileting, this cue was revised with going

to the bathroom included in brackets. The cue for assistance with transfers modified to include from bed to chair in brackets. Again for consistency in cuing COPD/Respiratory Disease was changed to COPD with bad lungs, breathing problems, or miners lung in brackets. Diabetes was changed to include sugar in brackets. These changes allowed for clearer understanding of terminology for the subjects and consistency in the interview process.

Question nine of the social support network scale proved to be difficult for this population to have a positive response to. This question assessed the helping behavior and lists such things as shopping, cooking dinner, doing repairs, cleaning house, or providing child care for another individual. These tasks were above the physical ability of most of the individuals in the pilot. When asked what types of things they did for other people the following were mentioned: picking up mail, calling a friend to see that they were well, or waking a friend or family member. The author of the tool was contacted and this situation was explained. He stated that the list of behaviors were simply prompts and as long as consistency was used throughout the study it would be wise to include prompts that the population under study is able to participate in. Therefore, the following prompts were added to question nine of the survey: picking up mail, calling or visiting with a friend to see if they are ok, helping to set

up for activities or meetings, baking for someone, or awakening a friend or family member.

During data collection the participants were given an explanation of the study, informed of the importance of the information to be received from the participant, the confidential nature of the information obtained, and the right to choose not to participate in all or part of the study. After informing the potential participant of the approximate 15-20 minute time frame for administration, an appointment was made for an interview with the participant.

The interview protocol consisted of a reiteration of the explanation of the study, importance of the information received from the participant, the confidential nature of the information obtained, and the right to choose not to participate in all or part of the study. After the subject was given the opportunity to ask questions, written informed consent was obtained. The interviews took place in a private area chosen by the participant. Once again, each interview was conducted by the investigator for objectivity and consistency.

Management of Data

All data were kept in a secured file with only the researcher and committee chairman having access to the data. All original data are to be destroyed three years after completion of the research. There were no identifying codes

on the survey tool that could trace the information back to the client.

Interviews took place only after informed consent had been obtained from the agency/facility and the participant. Privacy was maintained during the interview process. Approval from both The University of Tennessee Medical Center at Knoxville Institutional Review Board and The University of Tennessee Institutional Review Board was obtained prior to the beginning of data collection.

Statistical Analysis

SPSS software was used to perform computations. Data analysis was based on an alpha of .05, and a power of .80. These limits were chosen based on the proposed minimal requirements by Cohen (1988). Cohen states that for the behavioral and biological sciences an alpha of .05 has come to serve as a (minimum) basis for rejecting the null hypothesis (p. 12). He further recommends that "when the investigator has no other basis for setting the desired power value, the value .80 be used."

Effect size was based on the difference between the social support measures in the home health group and the assisted living group. The proportion in the home setting with high social support was estimated at 30% and in assisted living 50%. In the application of the arcsine transformation, (Lipsey, 1990, p. 88) these proportions

convert to 1.159 and 1.571. The difference between the converted proportions is the effect size .412. Using the power chart (Lipsey, 1990, p. 92), for a one tailed alpha of .05, effect size of .412, and a power of .80 it was determined that 80 participants in each group would be required.

Measures of central tendency and dispersion were calculated for all variables. T-tests and chi-square were performed to determine differences in characteristics between the groups. Correlations were used to determine relationships between data and multiple regression was used in determining which independent variables were significant predictors of health care utilization.

The following section lists each null hypothesis followed by the statistical procedures used to determine statistical significance.

Null Hypothesis-1 The social support among the aged residing in assisted living facilities will not be greater than the social support among the aged living in private residences receiving home health services. A t-test for independent samples was performed.

Null Hypothesis-2 As social support increases there will not be a decrease in the level of health care utilization among the aged residing in assisted living facilities.

Null Hypothesis-3 As social support increases there will not be a decrease in the level of health care utilization among the aged living in private residences receiving home health services. Each of these two hypotheses was tested using Pearson Correlation Coefficient.

Null Hypothesis-4: Social support is not a predictor of health care utilization among the aged residing in assisted living or among the aged living in private residences receiving home health services. This hypothesis was tested through multiple linear regression. Through multiple linear regression the dependent variable of health care utilization, measured by the number of visits to the physician and the number of hospital days, was regressed on the independent variables measured through the predisposing, enabling, and need factors of Andersen's Model. The interaction of social support and setting and the main effects of social support and setting were assessed to determine significance in the model.

Summary

This chapter outlined the methodology to be used in this study. The sample consisted of aged individuals over the age of 65 in East Tennessee who were oriented to person, place, and time and without a documented diagnosis of dementia, had been in their living situation for one year,

and received help with activities of daily living through assisted living or home health care. Participants were limited to those individuals who were residents of assisted living facilities or clients of home health services.

The interview protocol for data collection was defined. Considerations for the protection of the rights of the participants included informed consent of each agency and individual, privacy in administration, lack of identifying codes on survey tools, and limitations to data access to only the researcher and committee chair. Instrumentation included a demographic tool and the Lubben Social Network Scale. Statistical analysis included central tendency measures and dispersion, t-tests, chi-square, correlation, and multiple regression.

CHAPTER IV

ANALYSIS AND INTERPRETATION OF DATA

Introduction

This purpose of this study was to analyze the differences in social support between the aged residing in assisted living facilities and the aged residing in private residences receiving home health services in East Tennessee. The secondary purpose of this study was to determine if social support level impacts health care utilization among the aged residing in assisted living facilities and the aged residing in private residences who received home health services. This chapter presents the analysis and interpretation of the data from this study. Eighty individuals from each setting participated. Of those asked to participate, one white male from home health and one white male and nine white females from assisted living chose not to participate.

In reviewing the results, descriptive statistics will be discussed first which describe the characteristics of the home health subsample, followed by the characteristics of the assisted living subsample. This will be followed by tests of significance contrasting those characteristics which are significantly different between the subsamples. Hypothesis testing will then be discussed.

Characteristics of the Home Health Subsample

The home health subsample was 82.5% female with an age range of 65 to 102. The mean age was 79.7; and the mean educational level was 9.5 years. In the home health subsample, 21.3% reported using Medicaid, while 63.8% had private insurance. Home health participants have remained in their current dwelling for an average of 24.2 years with 33.8% of reporting that they lived with a spouse and 37.5% living alone. The remaining 28.8% reported living with family or friends.

The mean number of deficits in activities of daily living was 2.4 with bathing the most commonly reported need. The three most common diagnoses were high blood pressure, heart disease, and arthritis; and the mean number of diagnoses was 3.4. The number of days in the hospital ranged from 0 to 60 with a mean of 8.9. Of the home health subsample, 43.8% did not have a hospital stay in the past year. The number of doctor visits ranged from 0 to 24 with a mean of 6.3. The mean health rating was 1.9 indicating a fair reported health rating (1=poor, 2=fair, 3=good, 4=excellent).

On the social support scale, 17.5% scored 20 or less which indicates isolation, 18% scored 21-25 which reflects a high risk for isolation, and 26.2% reported 26-30 which indicates a moderate risk for isolation. Only 38.5% reported 31 or more which indicates a low risk for isolation

(See Table 4-1). The mean level of social support for the home health subsample was 28.30 indicating that overall the home health participants demonstrated a moderate risk for isolation.

Characteristics of the Assisted Living Subsample

The assisted living subsample was 78.8% female and the ages ranged from 71 to 101. The mean age was 85.1; and the mean educational level was 12.7 years. In the assisted living subsample, none of the participants reported the use of Medicaid, while 77.5% reported having private insurance. Participants in assisted living have remained in their current dwelling for an average of 31.4 months with 3.8% of the respondents reporting living with a spouse and 41.3% living alone. The remaining 54.9% reported living with family or friends.

The mean number of deficits in activities of daily living was 1.3. Bathing was the most common need. The top three reported diagnoses included arthritis, heart disease, and high blood pressure; and the mean number of diagnoses was 2.2. The days in the hospital ranged from 0 to 34 with a mean of 2.8. Of the assisted living subsample, 68.8% of the residents did not have a hospital stay in the past year. The number of doctor visits ranged from 0 to 20 with a mean of 4.5. The mean health rating was 2.4 indicating a

Table 4-1
Demographic Characteristics of Home Health and Assisted Living Subsamples

Characteristic		Home Health	Assisted Living
Female		82.5%	78.8%
Medicaid		21.3%	0
Private Insurance		63.8%	77.5%
Participants with No Hospital Stay		43.8%	68.8%
Level of Social Support			
≤20	Isolated	17.5%	35.0%
21-25	High Risk for Isolation	18.0%	13.8%
26-30	Moderate Risk for Isolation	26.2%	20.0%
≥31	Low Risk for Isolation	38.5%	31.3%

health rating midway between fair and good (1=poor, 2=fair, 3=good, 4=excellent).

On the social support scale, 35% of the individuals scored 20 or less which indicates isolation, 13.8% scored 21-25 which reflects a high risk for isolation, and 20% reported 26-30 which indicates a moderate risk for social isolation. Only 31.3% of these individuals reported 31 or more which indicates a low risk for isolation (See Table 4-1). The mean level of social support among the assisted living subsample was 25.44 indicating a high for risk of isolation.

Significance Between Characteristics in Each Setting

The above characteristics were tested employing the t, Mann-Whitney U, and chi-square tests to determine statistically significant differences between the two subsamples. T-tests determined a statistically significant difference in age between the two subsamples with the assisted living subsample being older ($p < .05$) and total diagnoses with the home health subsample having a higher number of medical diagnoses ($p < .05$). So while the assisted living subsample was older the home health subsample had a higher number of medical diagnoses (See Table 4-2).

The distributions for the educational level and rating of health violated the normality assumption necessary for

Table 4-2
Significant Values Between Characteristics of the Home Health and Assisted Living Subsamples

Variable	Home Health M	(SD)	Assisted Living M	(SD)	Test
Age	79.66	(7.63)	85.18	(5.99)	t=5.064*
Education	9.50	(3.50)	12.69	(2.79)	z=5.582*
Health Rating	1.90	(.82)	2.45	(.90)	z=3.808*
Deficits ADLs	2.44	(1.46)	1.31	(.63)	z=6.294*
Total Diagnoses	2.21	(1.29)	3.44	(1.44)	t=5.669*
Total Health Care Use	2.32	(.98)	1.69	(.94)	t=-4.163*

t=Results of t-test
z=Results of Mann Whitney U
$p < .05$

the use of parametric statistics. Therefore, these two characteristics were tested with a non-parametric test, the Mann-Whitney U. Results of the Mann-Whitney U revealed that the educational level and rating of health among the assisted living subsample was significantly higher ($p < .05$) than the home health subsample. Therefore, in contrast to the home health subsample, the assisted living subsample included persons with more years of education and who had a higher perceived level of health (See Table 4-2).

In testing for the differences in the level of health care utilization, a combined measure of utilization was obtained by adding the number of days in the hospital to the number of doctor visits. A log rhythm was then applied to

obtain a normal distribution. A t-test applied to the log of the combined measure of health care utilization found the home health subsample used significantly more health care ($p < .05$) than the assisted living subsample (See Table 4-2).

Chi-square testing found that there were no statistically significant differences between the home health and assisted living participants in the number of females in each setting, the number of individuals who had private insurance, the number of those who had a regular doctor, or the number of individuals who experienced transportation problems ($p > .05$).

In contrasting the characteristics of living with a spouse, with friends or relatives, or living alone, chi-square analysis found significant differences ($p < .05$). This result indicates that place of residence, either residing in a private residence and or in an assisted facilities had an impact on whether the participant lived alone or with others (See Table 4-3).

Analysis of Questions and Hypotheses

This section lists and answers the first two research questions. Then each null hypothesis is listed with a discussion of the statistical test used to test the hypothesis. This is followed by a statement of acceptance or rejection based on test results.

Table 4-3
Percent of Residents by Living Arrangements

Variable Participant Lives:	Home Health	Assisted Living
Alone	37.5%	41.2%
With Unrelated People	6.2%	22.5%
Friends or Relatives	22.5%	32.5%
Spouse	33.8%	3.8%

Research Question-1 What is the level of social support among the aged living in private residences receiving home health services? The level of social support was determined by calculating the mean level of total support as measured by the social support instrument. For the aged living in private residences receiving assistance from home health services, the mean level of social support was 28.30 indicating a moderate risk for social isolation.

This instrument allows for the calculation of separate scores for family and friend, with the highest potential score for each of these subsets being 15. The mean level of support for each of these categories among the aged living in private residences receiving assistance from home health services are as follows: Family 10.4 and friend 6.76.

Research Question-2 What is the level of social support among the aged residing in assisted living facilities?

Again the level of social support was determined by calculating the mean level of total support as measured by the social support instrument. The aged residing in assisted living had a mean social support level of 25.44 indicating a level of support indicating a high risk of social isolation. The mean level of support for the various categories are as follows: Family 9.28 and friend 6.5.

Null Hypothesis-1 The social support among the aged residing in assisted living facilities will not be greater than the social support among the aged living in private residences receiving home health services. A one tailed t-test for independent samples was performed on total support and was found non-significant ($p > .05$). The null hypothesis was not rejected. Thus, the social support of the aged residing in assisted living facilities was not greater than the level of social support of the aged who resided in private residences who received assistance with activities of daily living through home health services.

One tailed t-tests on the components (family and friend) of social support were also found to be non-significant ($p > .05$). It is important to note that friend support violated the normality assumption, however, when including only the data from individuals who reported friend social support (taking out all those who reported 0 for friend support), the data became normally distributed. A

chi-square test found no significant differences in the number of participants in each setting that reported a total lack of friend support. Therefore, measures of friend support were performed using only those individuals who reported one or greater on the friend section.

Null Hypothesis-2 As social support increases there will not be a decrease in the level of health care utilization among the aged residing in assisted living facilities. To test this hypothesis, a Pearson Correlation was performed. This test showed that social support was weakly correlated with the level of health care utilization ($r = .263$) among the aged residing in assisted living facilities. This correlation was significant ($p < .05$) demonstrating that as social support increased there was a decrease in the level of health care utilization. Therefore, the null hypothesis was rejected.

Null Hypothesis-3 As social support increases there will not be a decrease in the level of health care utilization among the aged living in private residences receiving home health services. To test this hypothesis, again the Pearson Correlation Coefficient was run. The Pearson Correlation Coefficient determined that the correlation between health care utilization and social support was .066 for the home health participants; this correlation was not significant

($p > .05$). Therefore, there was no correlation between social support and health care utilization among the aged living in private residences receiving assistance with activities of daily living through home health services. The null hypothesis was not rejected.

Null Hypothesis-4: Social support is not a predictor of health care utilization among the aged residing in assisted living or among the aged living in private residences receiving home health services. This hypothesis was tested through multiple linear regression. The combined dependent variable made up of the number of physician visits and number of hospital days was regressed on the independent variables of rural or urban, age, gender, race, years of education, Medicaid, private insurance, regular doctor, transportation problems, rating of health, total number of deficits in activities of daily living, total number of medical diagnoses, home health or assisted living setting, total social support and the interaction of setting and social support. The regression was significant ($p < .05$) with an R^2 of .392. The interaction of setting and social support as well as the main of effects of social support and setting were not significant in the model. Therefore, social support did not impact health care utilization for the aged in assisted living facilities and the aged living

in private residences receiving home health services. The null hypothesis was not rejected (See Table 4-4).

The following independent variables were significant in the model: increasing number of medical diagnoses, younger age, less optimistic self health rating of health, being without transportation problems, and being male. This regression model explained 39% of the variability of health care utilization in this sample. The model was validated through residual plots that demonstrated normality and homogeneity of variance.

Post Hoc Testing

The finding of a higher level of social support for participants in home health was unexpected. Post hoc tests were applied to the data to determine if this difference was significant. Using a two tailed t-test the total level of social support was significantly greater for the home health subsample ($p < .05$).

When contrasting the various components of social support using a two tailed t-test, family support was significantly greater in the home health subsample ($p < .05$). However, support by friends was not significant between the two groups (See Table 4-5).

These tests indicate that the participants in the home health subpopulation had a significantly higher level of social support and this increased level of social support

Table 4-4
Summary of Logistic Regression Analysis for Variables Predicting Health Care Utilization With Andersen's Model

Coefficients	Unstandardized B	Unstandardized Std. Error	Standardized Beta
(Constant)	1.921	1.199	
Predisposing			
Age	-2.851E-02	.010	-.211*
Gender	.445	.166	.178*
Race	6.426E-02	.287	.016
Education	4.098E-02	.022	.146
Home Health/ Assisted Living	-.138	.171	-.129
Total Social Support	1.237E-02	.009	.108
Setting X Support	5.946E-03	.011	.091
Enabling			
Rural or Urban	-.112	.199	-.047
Medicaid	-.276	.275	-.086
Private Insurance	.179	.182	.082
Transport Problem	-.360	.166	-.149*
Regular Doctor	.325	.223	.099
Need			
Health Rating	-.224	.084	-.203*
Deficits in ADLs	-1.919E-02	.059	-.024
Total Diagnosis	.164	.053	.245*

Note. R^2 = .392
* $p < .05$

Table 4-5
Level of Social Support Between Settings

Variable	Home Health		Assisted Living		Test
	M	(SD)	M	(SD)	
Family	10.40	(3.35)	9.28	(2.92)	t=-2.265*
Friend	6.76	(4.54)	6.50	(4.41)	t=-1.185
Total	28.30	(7.77)	25.44	(9.47)	t= 2.090*

Note. All are two tailed tests
t=Results of t-test
z=Results of Mann Whitney U
*$p < .05$.

was a result of the home health participants having reported a higher level of family support.

To further define the differences in the level of social support, the sample was divided between those that were isolated and those that reported a high, medium, or low risk of isolation. A chi-square test found that there was a significantly higher number of isolated participants in the assisted living ($p < .05$) than in the home health subpopulation (See Table 4-6).

Summary

This chapter presented the results of the analysis of the data and the interpretation of these results. Overall the home health subsample was younger, had fewer years of education, had more medical diagnoses, needed more assistance with activities of daily living, tended to rate

Table 4-6 Percent at Risk for Isolation by Living Arrangement

Variable	Home Health	Assisted Living
Not Isolated	82.5%	65%
Isolated	17.5%	35%

their health less optimistically, and used more health care. There were no statistical differences between the home health subsample and the assisted living sample in the number of males or females, or the number of participants reporting having private insurance, a regular doctor, or transportation problems.

Chi-square testing found that there was a relationship between living arrangements of the aged who resided in assisted living facilities and the aged who lived in private residences receiving assistance from home health services. Participants in private residences who received assistance from home health services reported living with a spouse more often than assisted living participants. Assisted living participants more frequently reported living alone, with unrelated people, or with friends or relatives.

While the regression model was significant, with age (decreased age), gender (male), lack of transportation problems, less optimistic rating of health, and an increased

total number of medical diagnoses explaining 39% of the variability of health care utilization in this sample, the interaction and main effects of interest to this study were not significant. Social support did not have any impact on the model, nor did the interaction of social support and setting. Therefore, with this regression model, social support was not a significant predictor of health care utilization for the aged in assisted living facilities and the aged living in private residences and receiving home health services.

Post hoc tests found that there was a significant difference between the level of social support between the two subsamples. The home health subsample had a significantly higher level of social support. This support was found to be related to a higher level of support from family members. Post hoc testing also found that the assisted living participants were more likely to score in the isolated category of the social support measurement.

The next chapter, Chapter V, will discuss the summary, findings, conclusions, and recommendations based on the analysis and interpretation of the results.

CHAPTER V

SUMMARY OF THE FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to determine if there was a significant difference in social support between the aged residing in assisted living facilities and the aged residing in private residences receiving home health services in the East Tennessee Development District. The secondary purpose of this study was to determine if the level of social support impacts health care utilization among the aged residing in assisted living facilities and the aged residing in private residences who received home health services.

To fulfill this purpose, eighty participants who resided in private residences, were cognitively intact, and received assistance with at least one activity of daily living through home health services were interviewed using the Lubben Social Network Scale and a demographic tool that assessed the predisposing, enabling, and need conditions of Andersen's Behavioral Model of health care utilization. Eighty participants from assisted living who also were cognitively intact, needed assistance with at least one activity of daily living, and had been in the facility for at least one year were also interviewed using the same tools.

Data generated through the interviews were analyzed through central tendencies, dispersion, t-test, chi-square, Mann Whitney U, correlation, and regression analysis.

Findings

Overall descriptive findings of the sample population will be discussed first, followed by the findings specific to each research question or hypothesis.

The home health subsample was younger, more likely to live with a spouse, had fewer years of education, had more medical diagnoses, needed more assistance with activities of daily living, tended to rate their health less optimistically, and used more health care than the assisted living subsample. The assisted living subsample was older, more likely to live with friends or relatives or unrelated people, had more years of education, had fewer medical diagnoses, needed less assistance with activities of daily living, tended to rate their health more optimistically, and used less health care than home health subsample. There were no statistical differences between the home health subsample and the assisted living subsample on the number of males or females, or the number of participants reporting having private insurance, a regular doctor, or transportation problems.

Research Question-1 What is the level of social support among the aged living in private residences receiving home health services?

1. The mean level of social support among the aged living in private residences and needing assistance with at least one activity of daily living through home health services was 28.3. This level of social support indicates a moderate risk for social isolation as defined by the Lubben Social Network Scale.
2. The level of social support for family was 10.4 and for friend 6.7, indicating a higher level of support from family.

Research Question-2 What is the level of social support among the aged residing in assisted living facilities?

1. The mean level of social support among the aged living in assisted living facilities and needing assistance with at least one activity of daily living was 25.44. Participants would be considered at a high risk for social isolation as defined by the Lubben Social Network Scale.
2. The level of social support for family was 9.2 and friend was 6.5. This indicates that the highest level of social support was from the participant's family.

Null Hypothesis-1 The social support among the aged residing in assisted living facilities will not be greater

than the social support among the aged living in private residences receiving home health services. This null hypothesis was not rejected.

1. Post hoc measures found the level of social support among the aged residing in assisted living facilities to be significantly less than the level of social support among the aged living in private residences receiving home health services.

2. Family support was significantly higher in the home health group.

3. There were no significant difference between the level of friend support between the two groups.

4. The number of participants in assisted living who were considered isolated was significantly higher than those in private residences receiving home health services.

Null Hypothesis-2 As social support increases there will not be a decrease in the level of health care utilization among the aged residing in assisted living facilities. This null hypothesis was rejected.

1. There was a weak positive correlation between social support and the level of health care utilization among the aged residing in assisted living facilities. This indicated that as social support increased there was a decrease in the level of health care utilization.

Null Hypothesis-3 As social support increases there will not be a decrease in the level of health care utilization among the aged living in private residences receiving home health services. This null hypothesis was not rejected.

1. There was no correlation between social support and the level of health care utilization among the aged residing in private residences receiving home health services.

Null Hypothesis-4 Social support is not a predictor of health care utilization among the aged residing in assisted living or among the aged living in private residences receiving home health services. This null hypothesis was not rejected.

1. The regression model proved significant with an R^2 of .392.
2. The interaction of social support and setting was not significant in the regression model.
3. The main effect total social support was not significant in the regression model.
4. The main effect of living in private residences receiving home health services or residing in an assisted living facility was not significant in the regression model.
5. The independent variables of gender (male), age (younger), rating of health (decreased), lack of transportation problems, and total number of medical diagnoses (higher) were significant in the model.

6. These independent variables accounted for 39% of the variance in health care utilization.

Conclusions

Based on the analysis of the data and subsequent findings the following conclusions have been reached.

1. The home health participants were in need of interventions to bolster social support.
2. Participants from the assisted living subsample displayed an even greater need for interventions to increase social support.
3. There was a significantly lower level of social support among the aged participants residing in assisted living and more of these assisted living participants fell into the category of isolated as defined by the Lubben Social Network Scale.
4. As social support increased in the assisted living group, health care utilization decreased.
5. Among the home health group, there was no relationship between social support and health care utilization.
6. Controlling for the influence of the known predictors of health care utilization social support was not a predictor of health care utilization among the aged residing in assisted living or among the aged living in private residences receiving home health services.

Recommendations

The following recommendations are driven by the purpose and the secondary purpose of this study and are based on the findings and conclusions of this study.

1. Assess the level of social support individually among the aged in both the home health and assisted living settings.
2. Institute interventions aimed at increasing the level of social support in both home health and assisted living settings for individuals with deficits in social support.
3. Follow-up assessment is necessary to determine if these interventions have been successful in increasing the social support level.
4. Educate appropriate health care personnel on the importance of assessment, intervention, and reassessment of social support.
5. Initiate studies directed at determining interventions that are most effective in impacting the level of social support among the aged.
6. Conduct future studies that would include random sampling and a larger sampling area when assessing the impact of place of residence on social support and the impact of social support on health care utilization.

Summary

This chapter discussed the findings, conclusions, and recommendations generated by this study. The next chapter, Chapter VI, will include the discussion, retrospectively observe the study, and discuss specific future directions for recommendations generated by this study.

CHAPTER VI

THE STUDY IN RETROSPECT

Introduction

The purpose of this study was to determine if there was a significant difference in social support between the aged residing in assisted living facilities and the aged residing in private residences receiving home health services in the East Tennessee Development District. The secondary purpose of this study was to determine if social support level impacts health care utilization among the aged residing in assisted living facilities and the aged residing in private residences who received home health services.

Discussion

When contrasting the results of this study to previous studies, there were many demographic similarities. These similarities included age, race, gender, and marital status. (Hays & Willborn, 1996; Kane & Wilson, 1993; Seip, 1989),

Contrary to the findings of this current study, it was anticipated that the level of social support of the assisted living residents would be higher than the level of social support of the home health clients. This assumption was based on the reported level of isolation among home health clients and characteristics inherent to assisted living facilities. Luggen and Rini (1995) found that among home health clients, 37% scored 20 or less on the Lubben Social

Network Scale, indicating that these individuals were isolated. This low level of social support may reflect the physical and financial limitations that restrict aged individuals to a limited area. The aged, especially those with limited education, have a propensity to live in rundown neighborhoods due to financial limitations (Krause, 1993). As neighborhoods deteriorate, they may have a negative effect on social support systems. Krause (1993) reported that as neighborhoods deteriorate, a sense of distrust pervades the neighborhood. This distrust proved to have a negative impact on the maintenance of social ties. Deterioration of one's own residence, too, may cause safety problems that decrease social interaction (Krause, 1993). Decreased mobility combined with stairwells in need of repair or poor vision combined with inadequate lighting may isolate the aged in their homes.

Assisted living facilities possess important characteristics that may positively impact the aged individual's access to social interaction. Assisted living facilities provide an environment in which residents who are from the same age category live in close proximity. Both of these characteristics, similarity and propinquity, have been shown to have a beneficial impact on friendship formation (Nahemow & Lawton, 1975). The physical aspects of assisted living facilities, too, may prove advantageous to social interaction. The majority of these facilities represent new

construction (Seip, 1989), therefore, deterioration would not be an inhibiting factor in friendship formation.

Typically, assisted living facilities employ an activities director (Kane & Wilson, 1993). While the effect of taking part in activities in assisted living facilities has not been established, taking part in social activities has been reported to facilitate adjustment to relocation in the congregate setting.

The high anticipated level of social support among assisted living residents in this study was not found. Instead, the home health clients demonstrated a higher level of social support. There are several factors that may have impacted these results. The high level of isolation among home health clients as reported by Luggen and Rini (1995) resulted from a sample that was reported to have a low level of education and a high level of Medicaid use. Interestingly, the reported level of Medicaid usage was double that of this current study. Taken as an economic indicator, having fewer clients who are eligible for Medicaid demonstrates a wealthier sample in this current study. A higher level of education and a higher level of financial resources have been reported to positively impact the level of social support among the aged (Krause, 1995).

The decreased level of support found in the current study among the assisted living participants may reflect the inability of the residents to have the time that is

necessary to develop close relationships. A study of aged women in age-segregated and age-integrated settings reported that proximity predicted frequency of interaction (Adams, 1985). However, friendships take on varied meanings and those friendships that included emotional closeness were not related to proximity but to physical distance. The author noted that this is due to duration of the emotional closeness. Newly formed relationships based on proximity have not had the time to develop as deeply as old, but distant friendships (Adams, 1985).

The tool used in this current study assessed close relationships. The participants were asked to limit reported relationships to those relationships in which individuals felt comfortable, were able to share private matters, or could call upon the friend or relative for help (Lubben, 1988).

To participate in the current study, assisted living participants had to be in the assisted living setting for one year. This may not have been adequate time for the development of close friends within the assisted living setting. With an average length of stay in assisted living facilities of 26 months (Kane & Wilson, 1993), one must question if residents would have sufficient time to develop close relationships without some type of intervention. This is certainly an important area of future study. However larger studies, regional or national, may be hampered by

guidelines for assisted living facilities that vary from state to state as well as definitional inconsistencies of assisted living (Kane & Wilson, 1993; Olsen, 1994).

In this study, 82% of the residents in assisted living reported a friendship. This is very similar to the 89% of residents of congregate housing that reported friendships (Parris, Stephens, & Berstein, 1984). In both studies, all residents of assisted living reported a relationship with a family member. Parris, Stephens, and Berstein (1984) reported family relationships to be the most important. This mirrors work by Connidis and Davies (1992) who noted an increase in the family's role as the individual ages. With age, the likelihood of a friend taking on the role of a companion or confidant decreased and the likelihood of a family member taking on this role increased. With the assisted living population, this relationship takes on added meaning when one considers that in a national survey, 70% of assisted living facilities surveyed reported that their clients chose their current facility based on family proximity (Seip, 1989).

The higher level of support for the home health clients points to the benefits listed by Fogel (1992) of remaining in one's household which included continued access to the neighborhood with social support networks. On a neighborhood level, Unger and Wandersman (1985) report

continuity of social support, predictability of community environment, and a continued sense of community.

The regression model in this study proved to be significant. The predisposing characteristics significant in the model included being younger and male. Only one enabling characteristic was significant, lack of transportation problems. Significant need characteristics, which are typically the strongest indicators of health care utilization (Branch el al., 1981; Evashwick, Rowe, Diehr, & Branch, 1984; Nelson, 1993; Wan & Odell, 1981), were rating health less optimistically and a having a higher number of medical diagnoses.

The predisposing, enabling, and need characteristics were able to explain 39% of the variability of health care utilization in this sample. While a 39% explanation in the variation of the dependent variable may not appear to be substantial, it exceeds the level of many previous studies. Wolinsky and Arnold (1988) state: "Most applications of the behavioral model to the special case of the aged account for less than 25% of the variance in their health services utilization" (p. 96).

While the literature reports a strong relationship between social support and health indicators (Berkman & Syme 1979; Blazer, 1982; House, Robbins, & Metzner, 1982; McIntosh, Kaplan, Kubena, & Landmann, 1993; Ruberman, Weinblatt, Goldberg, & Chaudhary, 1984; Schoenback, Kaplan,

Fredman, & Kleinbasum; Williams et al., 1992), the addition of a comprehensive social support scale to Andersen's Behavioral Model of health care utilization did not impact the overall predictability of this framework.

Observations of the Study

This study would not have been possible had it not been for the cooperation of the home health care agencies and the assisted living facilities that took part in the study. Coordination of interviews at various facilities with the contact person and with the supervisors, team leaders, and nurses of the home health agency was challenging. However the willingness of all of these individuals to assist facilitated the completion of this project.

This study used a singular interviewer in the administration of the social support and demographic tools. This was one of the strengths of this study. The use of one interviewer, experienced in gerontology, decreased the potential for errors due to the reading and visual deficits common with the aged. Using a singular interviewer also decreased the potential for interviewing error that may have occurred if more than one person had taken part in the interviewing process.

This study also would not have been possible had it not been for the willingness of the clients to participate in the interviews. The overwhelming majority of the

participants who were approached took part in the study. Participants were welcoming and freely shared their feelings.

The social support tool used in this study was a strength of this study. The strengths of the Lubben Social Network Scale lie in its brevity and the ability of the tool to distinguish between the level of support from family and friends. Question 10 of this tool brought out interesting information on the perception of assisted living clients in relation to living arrangements. This question asked if the respondent lived with a spouse, with family or friends, with unrelated individuals or by themselves. While the answer to this question was usually obvious in the home health setting, it was less so in the assisted living facilities. Not all assisted living participants perceived living in an assisted living facility as living with others. Perceived living arrangements of individuals from assisted living ranged from living with a spouse, to living with friends, to living with unrelated individuals, as well as living alone.

The most salient issue brought out by this research was the potential for isolation in both the assisted living and home health participants. This issue is very important considering the negative correlation between social support and health indicators (Berkman & Syme 1979; Blazer, 1982; House, Robbins, & Metzner, 1982; McIntosh, Kaplan, Kubena, & Landmann, 1993; Ruberman, Weinblatt, Goldberg, & Chaudhary,

1984; Schoenback, Kaplan, Fredman, & Kleinbasum; Williams et al., 1992).

Future Directions

While generalizability is limited by the lack of a random sample, several recommendations for future directions are suggested by the findings. Considering the known links between social support and health, health care personnel who work with the aged in the East Tennessee Development District should be aware of the potential for isolation of the home health and assisted living clients, and apply assessment and intervention strategies. Assessment would be most appropriate on an individual level. The Lubben Social Network Scale is an excellent tool to assess social support level and is very quick and easy to administer. If a client demonstrates a low level of social support, individual interventions can be implemented aimed at increasing the level of social support. The following are suggestions to increase social interaction. While some of these suggestions have been shown to increase the level of social support, others are suggested due to their ability to increase social interaction, which may in turn increase social support among the aged.

1. Transportation:

To facilitate participation in community activity and to increase the ability to access friends in neighboring areas, the aged may need more comprehensive information of the availability and access of handicapped or reduced fare transportation. Residents of assisted living facilities may benefit from a van service provided by the facility.

2. Senior Citizens' Programs:

For individuals in the home or assisted living setting who have access to the community, information about community programs that promote social interaction would be important. Sutherland and Murphy (1995) state that participants of Senior Citizens Programs report other members of these programs to be important sources of social support. Senior centers offer a vast array of programming ranging from quilting to exercise activities. Congregate meals at a senior center or nutrition site provide an excellent opportunity to meet friends, share stories, and enjoy a nutritionally appropriate meal.

3. Culturally Specific Programs:

If a client does not feel comfortable in the diverse atmosphere of a senior center, they may benefit from a culturally specific center. Culturally specific centers may be less intimidating as they bring together people with

common beliefs and backgrounds. Participating in culturally familiar language, songs, and festivities can be comforting, stimulate reminiscence, and encourage friendships. Neighborhood and religious-based senior activities also offer many of these advantages.

4. Support Groups:

Support groups are an excellent outlet through which the aged can make social contact and share feelings with others in an accepting an atmosphere. Those particularly appropriate for the aged include bereavement, arthritis, low vision, cardiac, and stroke support groups. For home health clients in rural areas these support groups may be held in churches or other such buildings with handicapped facilities to increase access for this population. Assisted living facilities may encourage holding group sessions within the facility to increase access for the assisted living residents.

5. Information of Volunteer Programs:

Informing the individual of appropriate opportunities to perform volunteer work can also be beneficial. The senior companion program, for example, provides a small stipend to low-income aged people who volunteer as part-time companions for the homebound aged. Peer counseling, too, is an example of volunteer opportunity for the aged. Campbell and

Chenoweth (1981) state that during peer counseling programs "Information and personal experiences were freely shared by the audience, thus enriching the discussion period and leading to new friendships." Assisted living facilities may choose to develop volunteer programs in which one resident's abilities can be matched to the needs of another resident.

6. Intergenerational Programs:

Facilitating intergenerational programs such as the foster grandparent program, working with after-school children, or taking part in intergenerational educational activities in which the aged may be able to share their knowledge and love for a particular activity with a youngster is yet another avenue of increasing social interaction. For clients in the home setting, the ability to get out to these programs must be assessed. Assisted living facilities may choose to incorporate intergenerational programs in their scheduled activities.

7. Use of Volunteer Companions

Health care workers must be aware of the volunteer programs in their community and how the various programs can be utilized. If the aged client is uneasy about joining community programs, a volunteer companion may help with the transition. Volunteer companions can also be brought into the home to bolster the support system of the aged house-

bound clients (Korte & Gupta, 1991). These same services may also assist in increasing the social support level of assisted living residents.

8. Religious Visits

Religion is very important to many aged individuals. Facilitating pastoral visits is yet another way to increase social interaction for the home health clients. While assisted living facilities also may use pastoral visits, they may also encourage religious services in the facility

9. Family Day

Assisted living facilities may choose to have a family day regularly in which families are invited to participate in a meal or other social activity. Providing telephone access in each of the residents' rooms would also increase access to friends and family outside of the facility.

Of specific interest to assisted living facilities are qualities that have been reported to promote participation in facility-organized activities in congregate facilities. Lemke and Moos (1989) found that participation in facility-organized activities was more a function of facility rather than individual characteristics. Residents in congregate facilities were more likely to participate in facility-organized activities if overall resident participation was

greater, staffing was higher, and the program was more structured.

Once interventions aimed at increasing social interaction have been implemented, a follow up assessment would be important to determine if these interventions have been successful in increasing the level of social support. Reevaluation and restructuring of the interventions that were implemented may be necessary.

Future Studies

To generalize the relationship between place of residence and social support, and the impact of social support on health care utilization, future studies that explore these relationships should cover a larger geographical area, include a larger sample, and use random sampling. Important too, would be studies that attempt to explain the effect of various interventions on social support of the aged in different living arrangements.

Summary

This chapter discussed the observations of the study. It also reviewed concrete clinical applications based on the findings, conclusions, and recommendations of the study. Future directions in the way of further research were also discussed.

REFERENCES

Adams, R. (1985). Emotional closeness and physical distance between friends: Implications for elderly women living in age-segregated and age-integrated settings. International Journal of Aging and Human Development, 22, 55-76.

Aday, L. & Andersen, R. (1974). A framework for the study of access to medical care. Health Services Research, 9, 208-220.

Aday, L. Andersen, R., & Fleming, G. (1980). Health Care in the United States: Equitable for Whom? Beverly Hills: Sage.

Andersen, R. (1968). A Behavioral Model of Families Use of Health Services. Chicago: Center for Health Administration Studies.

Andersen, R., & Newman, J. (1973). Societal and individual determinants of medical care utilization in the United States. Milbank Memorial Fund Quarterly, 51, 95-124.

Armer, J.M. (1993). Elderly relocation to a congregate setting: Factors influencing adjustment. Issues in Mental Health Nursing, 14, 157-172.

Asher, C. (1984) The impact of social support networks on adult health. Medical Care, 22, 349-359.

Barrera, M., Sandler, I., & Ramsey, T. (1981). Preliminary development of a scale of social support: Studies of college students. American Journal of Community Psychology, 9, 435-447.

Berkman, L., & Syme, S.L. (1979). Social networks, host resistance, and mortality. A nine-year follow-up study of Alameda County residents. American Journal of Epidemiology, 109, 186-204.

Biedenharn, P., & Normoyle, J. (1991). Elderly community residents' reactions to the nursing home: An analysis of nursing home-related beliefs. Gerontologist, 31 (1), 107-115.

Blaum, C., Liang, & J. Liu, X. (1994). The relationship of chronic diseases and health status to the health services utilization of older Americans. Journal of the American Geriatric Society, 42 (10), 1087-1093.

Blazer, D., G. (1982). Social support and mortality in an elderly community population. American Journal of Epidemiology, 115 (5), 684-694.

Bowe, J. (1993). Medicaid takes the plunge into assisted living. Contemporary Long Term Care, 16, 32-35, 90.

Branch, L., Jette, A., Evashwick, C., Polansky, M., Rowe, G., & Diehr, P. (1981). Toward understanding elders' health service utilization. Journal of Community Health, 7, 80-91.

Brandt, A. & Weinert, C. (1981). The PRQ: A social-support measure. Nursing Research, 30 (5), 277-280.

Broadhead W., Kaplan, B., James, S., Wagner, E., Schoenbach, V., Grimson, R., Heyden, S., Tibblin, G., & Gehlbach, S. (1983). The epidemiologic evidence for a

relationship between social support and health. American Journal of Epidemiology, 117, 521-537.

Campbell, R. & Chenoweth, B. (1981). Health education as a basis for social support. The Gerontologist, 21, 619-627.

Cassel, J. (1976). The contribution of the social environment to host resistance. American Journal of Epidemiology, 104, 107-123.

Chappell, N.L. & Badger, M. (1989). Social isolation and well being. Journals of Gerontology, 44, S169-176.

Chellis, R., Seagle, J., & Mackey Seagle, G. (1982). Congregate Housing for Older People. Lexington, Massachusetts: D.C. Heath and Company.

Cobb, S. (1976). Social support as a moderator of life stress. Psychosomatic Medicine, 38, 300-314.

Cohen, F., Horowitz, M., Lazarus, R., Moos, R., Robbins, L., Rose, R., & Rutter, M. (1982). Panel Report on psychosocial stress. In G. Elliott & C. Eisdorfer (Eds.), Stress and Human Health: Analysis and Implications for Research (pp.149-188). New York: Springer.

Cohen, J. (1988) Statistical Power Analysis for the Behavioral Sciences. 2nd Edition. Hillsdale, New Jersy: L. Erlbaum Associates.

Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H.N. (1985). Measuring the functional components of social support. In I.G. Sarason & B.R. Sarason (Eds.), Social

Support: Theory, Research and Applications (pp. 73-94). Boston: Martinus Nijhoff Publishers

Cohen, S. & Syme L. (Eds.) (1985). Social Support and Health. New York: Academic Press.

Connidis, I. & Davies, L. (1992). Confidants and Companions: Choices in Later life. Journal of Gerontology: Social Sciences, 47, 115-122.

Cutrona, C. (1986). Objective determinants of perceived social support. Journal of Personality and Social Psychology, 50, 349-355.

Cutrona, C. Russell, D., & Rose, J. (1986). Social support and adaptation to stress by the elderly. Journal of Psychology and Aging, 1, 47-54.

Dean, A.& Ensel, W. (1982). Modelling social support, life events, competence, and depression in the contest of age and sex. Journal of Community Psychology, 10, 392-408.

Dean, A., Kolody, B., & Wood, P. (1990). Effects of social support from various sources on depression in elderly persons. Journal of Health and Social Behavior, 31, June, 148-161.

Dewey, J. (1994). The shaping of an industry: Will the assisted living boom lead to new regulation? Provider, 20 (11) 39-40.

Dey, A. (1996). Characteristics of elderly home health care users: Data from the 1994 National Home and Hospice Care Survey. Advance Data, 279, Hyattsville, Maryland:

National Center for Health Statistics.

Ducharme, F., Stevens, B., & Rowat, K. (1994). Social support: Conceptual and methodological issues for research in mental health nursing. Issues in Mental Health Nursing, 15, 373-392.

Ehrlich, P., Ehrlich, I., & Woehlke, P. (1982). Congregate housing for the elderly: Thirteen years later. The Gerontologist, 22, 399-403.

Ensel, W. & Lin, N. (1991) The life stress paradigm and psychological distress. Journal of Health and Social Behavior, 32, 321-341.

Evashwick, C., Rowe, G., Diehr, P., & Branch, L. (1984). Factors explaining the use of health care services by the elderly. Health Services Research, 19, 357-382.

Ferraro, K. (1980). Self-ratings of health among the old and the old old. Journal of Health and social Behavior, 21, 377-383.

Fetter, R.B., Brand, D.A., & Gamache, D. (Eds). (1991). DRGs Their Design and Development. Ann Arbor, MI: Health Administration Press.

Fogel, B. S. (1992). Psychological aspects of staying at home. Generations, 16, 15-19.

Furnad, P. (1993). Assisted living. FHA mortgage insurance is smart answer to industry boom. Provider, 19, 55.

Garner, J. & Mercer, S. (1982). Meeting the needs of

the elderly: Home health care or institutionalization? Health and Social Work, 7, 183-191.

Gilksman, M. Lazaris, R., Wilson, A., & Leeder, s. (1995). Social Science and Medicine, 40, 811-814.

Grape, T.H. (1993). Different philosophies, services integral to assisted living. Provider, 19, 55.

Halkett, M. (1988). Sheltered housing: What's in the package. Panel Presentation Number 4b in Conference Proceedings, Options: Housing for Older Canadians, Ottawa, Canada.

Hays, B. & Willborn, E. (1996). Characteristics of clients who receive home health aide service. Public Health Nursing, 13, 58-64.

Helsing, K., Szklo, M., & Constock, G. (1981). Factors associated with mortality after widowhood. American Journal of Public Health, 71, 802-809.

Henderson, S., Byrne. D., & Duncan-Jones, P. (1981). Neurosis and the Social Environment. New York: Academic Press.

Heumann, L. F. (1990). The housing and support costs of elderly with comparable support needs living in long-term care and congregate housing. Journal of Housing for the Elderly, 6, 45-71.

Holloway, C. M., & Pokorny, M.E. (1994). Early hospital discharge and independence: What happens to the elderly? Geriatric Nursing, 15, 24-27.

House, J., Kessler, R., Herzog, A., Mero, R., Kinney, A., & Breslow, M. (1990). "Age, Socioeconomic Status, and Health." The Milbank Quarterly, 68, 383-411.

House, J., Landis, K., & Umberson, D. (1988). Social relationships and health. Science, 241, 540-545.

House, J., Robbins, C., & Metzner, H. (1982). The association of social relationships and activities with mortality: Prospective evidence from the Tecumseh Community Health Study. American Journal of Epidemiology, 116, 123-140.

House J., Lepkowski, J., Kinney, A., Mero, R., Kessler, R., & Regula Herzog A. (1994). The social stratification of aging and health. Journal of Health and Social Behavior, 35, 213-234.

Hulsman, B. & Chubon, S.J. (1989). A comparison of disabled adult's perceived quality of life in nursing facility and home settings. Public Health Nursing, 6, 141-146.

Husaini, B., Newbrough, J., Neff, J., & Moore, M. (1982). The stress buffering role of social support and personal competence among rural married. Journal of Community Psychology, 10, 409-426.

Katz, S., Ford, A., Moskowitz, R., Jackson, B., & Jaffee, M. (1963). Studies of illness in the aged. The index of ADL: A standardized measure of biological and psychosocial function. Journal of the American Medical

Association, 185, 914-919.

Katz, S., Downs, T., Cash, H. & Grotz, R. (1970). Progress in the development of the index of ADL. The Gerontologist, 10, 20-30.

Kane, R. & Wilson, K. (1993). Assisted Living in the United States: A new Paradigm for residential care for frail older persons? Washington DC: American Association of Retired Persons.

Kaplan, H. (1991). Social psychology of the immune system: A conceptual framework and review of literature, Social Science and Medicine, 33, 909-923.

Koko, L. (1994). John Hancock introduces 4th generation LTC plan. National Underwriter, October 31.

Korte C. & Gupta, V. (1991). A program of friendly visitors as network builders. The Gerontologist, 31, 404-407.

Krause, N. (1988). Stressful life events and physician utilization. Journal of Gerontology, 43, S53-61.

Krause, N. (1993). Neighborhood deterioration and social isolation in later life. International Journal of Aging and Human Development, 36, 9-38.

Krause, N, Herzog, A., & Baker, E. (1992). Providing support to others and well-being in later life. Journal of Gerontology, 47, P300-P311.

Krause, N., & Markides, K. (1990). Measuring social support among older adults. International Journal of Aging

and Human Development, 30, 37-53.

Lang, F. & Carstensen, L. (1994). Close emotional relationships in late life: Further support for proactive aging in the social domain. Psychology and Aging, 9, 315-324.

Lawton, M., Greenbaum, M., & Liebowitz, B. (1980). The lifespan of housing environments for the aging. The Gerontologist, 20, 56-64.

Lemke, S. & Moos, R. (1989). Personal and environmental determinants of activity involvement among elderly residents of congregate facilities. Journal of Gerontology, 44, S139-148.

Levy, S., Herberman, R., Maluish, A., Schlien, B., & Lippman, M. (1985). Prognostic Risk assessment in Primary breast cancer by behavioral and immunological parameters. Health Psychology, 4, 99-113.

Lipsey, M. (1990). Design Sensitivity. Newberry Park, CA: Sage Publications.

Lubben, J. (1988). Assessing social networks among elderly populations. Family and Community Health, 11, 42-53.

Lubben, J., Weiler, P., & Chi, I. (1989). Health practices of the elderly poor. American Journal of Public Health, 79, 731-734.

Lubitz, J., Beebe, J. & Baker, C. (1995). Longevity and Medicare expenditures. New England Journal of Medicine, 332, 999-1003.

Luggen, A., & Rini, A. (1995). Assessment of social networks and isolation in community-based elderly men and women. Geriatric Nursing, 16, 179-181.

Maximizing supportive services for the elderly in assisted housing: Experiences from the Congregate Housing Services Program: Hearing before the Subcommittee on Housing and Consumer Interests of the Select Committee on Aging, House of Representatives, 98th Congress, 1st Sess. 40 1985.

McIntosh, W., Kaplan, H., Kubena, K., & Landmann, W. (1993). Life events, social support, and immune response in elderly individuals. International Journal of Aging and Human Development, 37, 23-36.

Mead, N. (1991). Some nursing home experiences. Journal of Gerontological Social Work, 16, 3-15.

Moore, J. (1993). Ups and downs of assisted living. Contemporary Long Term Care, 16, 24, 78.

Nahemow, L., & Lawton, M. (1975). Similarity and propinquity in friendship formation. Journal of Personality and Social Psychology, 32, 205-213.

Nelson, M. (1993). Race, gender, and the effect of social supports on the use of health services by elderly individuals. International Journal of Aging and Human Development, 37, 227-246.

Olson, S.R. (1994). Linking service to standards....unrealistic expectations about assisted living. Provider, 20, 51-53.

Parris Stephens, M., & Bernstein, M. (1984). Social support and well-being among residents of planned housing. The Gerontologist, 24, 144-148.

Procidano , M., & Heller, K. (1983). Measures of perceived social support from friends and from family: Three validation studies. American Journal of Community Psychology, 11, 1-24.

Reed D., Mcgee, D. Yano, K. & Feinleib, M. (1983). Social networks and coronary heart disease among Japanese men in Hawaii. American Journal of Epidemiology, 117, 384-396.

Rook, K. S. (1984). The negative side of social interaction: Impact on psychological well-being. Journal of Personality and Social Psychology, 46, 1097-1108.

Ruberman, W., Weinblatt, E., Goldberg, J., & Chaudhary, B. (1984). Psychosocial influences on mortality after myocardial infarction. New England Journal of Medicine, 311, 552-559.

Rubinstein, R. (1995). Special Community Settings in Harel, Z. & Dunkle, R. (Eds.), Matching People with Services (pp. 89-108). New York: Springer Publishing Company.

Rubinstein, R. Lubben, J., & Mintzer, J. (1994). Social isolation and social support: An applied perspective. The Journal of Applied Gerontology, 13, 58-72.

Sarason,, I., Levine, H., Basham, R., & Sarason, B. (1983). Assessing social support: The Social Support

Questionnaire. Journal of Personality and Social Psychology, 44, 127-139.

Schoenbach V., Kaplan, B., Fredman, L., & Kleinbaum, D. (1986). Social ties and mortality in Evans County Georgia. American Journal of Epidemiology, 123, 577-591.

Schwenk, N.E. (1993). Long-term care trends. Family Economic Review, 6, 9-18.

Seeman, T., Kaplan, G., Knudsen, L., Cohen, R., & Guralnik, J. (1987). Social network ties and mortality among the elderly in the Alameda County study. American Journal of Epidemiology, 126, 714-723.

Seip, D. (1989). Tallying the first national assisted living survey. Contemporary Long Term Care, 12, 28, 30, & 32-33.

Sheehan, N. (1986). Informal support among the elderly in public senior housing. The Gerontologist, 26, 171-175.

Stokes, J. (1983). Predicting satisfaction with social support from social network structure. American Journal of Community Psychology, 11, 141-152.

Stump, T., Johnson, R., & Wolinsky, F. (1995). Changes in physician utilization over time among older adults. Journal of Gerontology, Series B Psychological Sciences and Social Sciences, 50B, S45-58.

Sutherland, D. & Murphy, E. (1995). Social support among elderly in two community programs. Journal of Gerontological Nursing, 31-38.

Thoits, P. (1984). Explaining distributions of psychological vulnerability: Lack of social support in the face of life stress. Social Forces, 63, 453-481.

Thompson, M., & Heller, K. (1990). Facets of support related to well-being: Quantitative social isolation and perceived family support in a sample of elderly women. Psychology and Aging, 5, 535-544.

Unger D. & Wandersman, A. (1985). The importance of neighbors: The social, cognitive, and affective components of neighboring. American Journal of Community Psychology, 13, 139-169.

U.S. Bureau of the Census. (1993). 1990 Census of Population. Social and Economic Characteristics. Washington, DC: U.S. Government Printing Office.

U.S. Bureau of the Census. (1995). Statistical Abstract of the United States: 1995 (115th ed.). Washington DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (1991). Healthy people 2000: National health promotion and disease prevention objectives. (DHHS Publication No. PHS 91-50213. Washington, DC: U.S. Government Printing Office.

VanderMeer, J. (1993). The cost of home-based care for dependent elders: Who pays. Nursing Economics, 11, 350-357.

Vickers, B. & Cunningham, V. (Eds.). (1994). Statistical Abstract 1994/95, Tennessee. The University of TN, Knoxville. Center for Business and Economic Research.

Vincenzino, J. (1994). Developments in health care costs--An update. Statistical Bulletin, Metropolitan Life Insurance Company,75,, 30-35.

Vincenzino, J. (1995). Health care costs: Market forces and reform. Statistical Bulletin, Metropolitan Life Insurance Company, 76, 29-35.

Wan, T. & Odell, B. (1981). Factors affecting the use of social and health services among the elderly. Aging and Society, 1, 95-115.

Ward, R. (1977). Services for older people: An integrated framework for research. Journal of Health and Social Behavior, 18, 61-70.

Williams, R., Barefoot, J., Califf, R., Haney, T., Saunders, W., Pryor, D., Hlatky, M., Siegler, I., & Mark, D. (1992). Prognostic importance of social and economic resources among medically treated patients with angiographically documented coronary artery disease. Journal of the American Medical Association 267, 520-524.

Wolinsky, F., Aguirre, B., Fann, L., Keith, V., Arnold, C., Niederhauer, J., & Dietrich, K. (1989). Ethnic differences in the demand for physician and hospital utilization among older adults in major American cities: Conspicuous evidence of considerable inequalities. Milbank Quarterly, 67, 412-449.

Wolinsky, F. & Arnold, C. (1988). A different perspective on health and health services utilization. In

George L. Maddox & M. Lawton (Eds.), Annual Review of Gerontology and Geriatrics, Volume 8, Varieties of Aging. New York: Springer Publishing Company.

Wolinsky, F. & Coe, R. (1984). Physician and hospital utilization among noninstitutionalized elderly adults: An analysis of the Health Interview Survey. Journal of Gerontology, 39, 334-341.

Wolinsky, F. & Johnson, R. (1991). The use of health services by older adults. Journal of Gerontology, 46, S345-357.

Wolinsky, F., Stump, T. & Johnson, R. (1995). Hospital utilization profiles among older adults over time: Consistency and volume among survivors and decedents. Journal of Gerontology, 50B, S88-100.

Zuckerman, D., Kasl, S., & Ostfeld, A. (1984). Psychosocial predictors of mortality among the elderly poor. The role of religion, well-being, and social contacts. American Journal of Epidemiology, 119, 410-423.

APPENDIX

DEMOGRAPHIC INFORMATION

____Rural	____Home Health	____Year	____Mon of Residence
____Urban	____AL <50 beds	____Year	____Mon of Residence
	____AL 50 or >beds	____Year	____Mon of Residence

____Age ____Gender ____Race ____Ed

Insurance:

_____Medicaid
_____Medicare
_____Private
_____Veteran
_____None

_____Regular Physician
_____Transportation Problems

How would you rate your health:

_____poor _____fair _____good _____excellent

Need assistance with:

_____Dressing

_____Bathing

_____Walking

_____Eating

_____Transferring (From bed to chair)

_____Toileting (Going to the bathroom)

Ever Diagnosed With:

_____Heart Disease

_____Cancer

_____Stroke

_____High Blood Pressure

_____Arthritis/Gout

_____Diabetes (sugar)

_____COPD (Bad lungs, Breathing problems, Miners Lungs)

Number of physician visits over past 12 months_____

Days in the hospital in past 12 months_____

APPENDIX

Lubben Social Network Scale

Family networks

Q1. How many relatives do you see or hear from at least once a month? (NOTE: Include in-laws with relatives.) Q1 ____

0 = zero
1 = one
2 = two
3 = three or four
4 = five to eight
5 = nine or more

Q2. Tell me about the relative with whom you have the most contact. How often do you see or hear from that person? Q2 ____

0 = < monthly
1 = monthly
2 = a few times a month
3 = weekly
4 = a few times a week
5 = daily

Q3. How many relatives do you feel close to? That is, how many of them do you feel at ease with, can talk to about private matters, or can call on for help? Q3 ____

0 = zero
1 = one
2 = two
3 = three or four
4 = five to eight
5 = nine or more

Friends networks

Q4. Do you have any close friends? That is, do you have any friends with whom you feel at ease, can talk to about private matters, or can call on for help? If so, how many? Q4 ____

0 = zero
1 = one
2 = two
3 = three or four
4 = five to eight
5 = nine or more

Q5. How many of these friends do you see or hear from at least once a month? Q5 ____

0 = zero
1 = one
2 = two
3 = three or four
4 = five to eight
5 = nine or more

Q6. Tell me about the friend with whom you have the most contact. How often do you see or hear from that person? Q6 ____

0 = < monthly
1 = monthly
2 = a few times a month
3 = weekly
4 = a few times a week
5 = daily

Confidant relationships

Q7. When you have an important decision to make, do you have someone you can talk to about it? Q7 ____

Always	Very Often	Often	Sometimes	Seldom	Never
5	4	3	2	1	0

Q8. When other people you know have an important decision to make, do they talk to you about it? Q8 ____

Always	Very Often	Often	Sometimes	Seldom	Never
5	4	3	2	1	0

Helping others

Q9a. Does anybody rely on you to do something for them each day? For example: shopping, cooking dinner, doing repairs, cleaning house, providing child care, etc.

NO—if no, go on to Q9b. YES—if yes, Q9 is scored "5" and skip to Q10

Q9b. Do you help anybody with things like shopping, filling out forms, doing repairs, providing child care, etc.? Q9 ____

Very Often	Often	Sometimes	Seldom	Never
4	3	2	1	0

Living arrangements

Q10. Do you live alone or with other people? (NOTE: Include in-laws with relatives.) Q10 ____

5 Live with spouse
4 Live with other relatives or friends
1 Live with other unrelated individuals (e.g., paid help)
0 live alone

TOTAL LSNS SCORE: ____

SCORING:

The total LSNS score is obtained by adding up scores from each of the ten individual items. Thus, total LSNS scores can range from 0 to 50. Scores on each item were anchored between 0 and 5 in order to permit equal weighting of the ten items.

VITA

Mary Jane Tremethick, daughter of Wesley and Mary Gunderman, was born in Bessemer Michigan the sixth of seven children and raised in Marenisco, Michigan. She graduated from Northern Michigan University in 1985 with a Bachelors Degree in Nursing. While working as a staff nurse at Marquette General Hospital she obtained a Masters Degree in Community College Teaching with an emphasis in health education. She was also employed as the In-service Coordinator at Marquette County Medical Care Facility and taught nursing at Northern Michigan University. In 1994 she accepted a position as a Graduate Teaching Associate at the University of Tennessee, Knoxville and began work on her Ph.D. Mary Jane has two children, Kevin Powell and Armand Powell. She is married to Martin Tremethick.