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Residents in long-term care: A case-controlled study  
of individuals in nursing homes and assisted living  
in Washington State

by

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A dissertation submitted in partial fulfillment  
of the requirements for the degree of

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## **Doctoral Dissertation**

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Date June 7, 1996

University of Washington

Abstract

Residents in long-term care: A case-controlled study of individuals  
in nursing homes and assisted living in Washington State

by Jeannette Searle Franks

Chairperson of the Supervisory Committee:

Dean Nancy R. Hooyman  
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The major purpose of this study was to determine some of the differences in selected variables of cost and quality of life between 86 individuals 65 years old or older, matched on a scale of functional ability, living in nursing homes and in assisted living facilities. Nursing homes are the least preferred and most costly form of long-term care. Although case study and anecdotal evidence suggests that for some nursing-home-eligible individuals, assisted living may be a more desirable and more economical option, little empirical evidence is available. This study randomly selected 10 nursing homes and 10 assisted living facilities in a three-county area; 10 residents from each selected facility who had lived there for three or more months were then randomly selected, and then individuals were matched in pairs with one from each type of facility, according to similar scores (within 2 points, 0 to 100 possible) on the SIP-NH. Individuals who fell within the potential matching range on the functional disability scale were also administered a quality of life instrument, the Ferrans & Powers QLI, as well as a global question regarding their perception of their quality of life. Data on all monthly costs were obtained.

Matched pair T-tests performed on the data regarding cost and quality of life from the 43 pairs matched on the Sickness Impact Profile for Nursing Homes (SIP-NH) found the differences in scores on quality of life measures were not statistically

significant, and that monthly costs of more than twice as much for nursing home residents compared to assisted living residents were statistically significant.

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## INTRODUCTION

Long-term care is not only about how we live, it is also about how we die. The quality and cost of the end of people's lives in a facility specifically designed for those who are so frail or disabled that they cannot live alone is a continuing concern of national policy makers, local legislators, communities, and families. Conspicuous changes in demographics, longevity, health care, and its financing invite close scrutiny of long-term care in this country.

This study examines individuals living for longer than three months in two types of long-term care, nursing homes and assisted living. The former is more traditional (though changing), the latter more recently developed, with both presenting some unanswered questions. This study will address two of these major questions: how cost and quality of life vary between these two types of living arrangement.

## CHAPTER I: LONG-TERM CARE

The purpose of this introduction is to discuss: 1) what long-term care is; 2) some factors underlying the current long-term care system; and 3) some reasons why long-term care is in transition today.

### What Long-term Care Is:

Long-term care is the assistance that is needed when disabilities undermine capacities; it is the health care, personal care, and social services required to compensate for functional impairment (Kane & Kane, 1987). Functional impairment is measured in terms of ability to perform activities of daily living (ADLs) or instrumental activities of daily living (IADLs). The ADLs are usually considered to be feeding, continence, transferring, going to the toilet, dressing, and bathing (Katz, 1970). The IADLs are often described as doing laundry, heavy housework, grocery shopping, light housework, preparing meals, managing money, using the phone, and having outside mobility (Manton in Jette, 1996). The rate of disability in one ADL or IADL is almost 45 percent for all persons aged 85 and older, the fastest-growing age group in the U.S. (op. cit.).

Most long-term care is provided at home by friends and family members, often at great personal sacrifice (Wiener, Illston & Hanley, 1994). Caregiver burden and stress are well documented (Grau, Teresi & Chandler, 1993; Kramer & Kipnis, 1995; Stull, Kosloski & Kercher, 1994). The decision to move a person out of a home setting is often an agonizing one. Efforts to provide less costly long-term care that promotes the highest quality of life have prompted changes in the current long-term care system. To understand the current changes, it is helpful to understand the history and development of long-term care in this country.

Five major factors have influenced the development of current U.S. long-term care policy and are relevant to this study's focus:

- 1) the history of U.S. nursing homes;
- 2) funding mechanisms for health care and long-term care;
- 3) cultural values;
- 4) changing demographics;
- 5) our changing understanding of aging and older people.

Each of these is briefly examined below.

#### The Development of U.S. Long-term Care Facilities

The first institutionalized long-term care facilities in the U.S. were nursing homes that came into existence around the turn of the century. According to authors such as Vladeck (1980), nursing homes were originally modeled on a combination of the British alms house and the hospital. These first nursing homes were designed to care for the indigent elderly who could not care for themselves. Disabled people of all ages who had adequate family caregivers and sufficient financial resources frequently stayed at home. Today it is still unusual for the very wealthy or those with available family caregivers to enter a nursing home when they initially require care.

The first long-term care facilities were of two kinds: those which were funded by state and federal monies, and those which were funded by private, non-profit organizations such as churches or service groups, for example, fraternal organizations. This distinction is still present today, although more than half of all Medicare/Medicaid-certified nursing homes are controlled by multi-institution corporations (Mor, Banzak-Holl & Zinn, 1996). Medicaid is the major source of funding for these for-profit facilities (Estes & Swan, 1993; Wiener, Illston & Hanley, 1994).

Most nursing homes resemble hospitals. As architect Regnier (1995) points out, the nursing homes of yesterday and today are designed almost exactly like a hospital with long, double-loaded corridors lined with rooms on each side, centrally-located nurses' stations with high counters separating the nurses' areas from the public and patient areas, few private rooms, and an emphasis on safety, sanitation, and the convenience and efficiency of staff. Currently many long-term care facilities are shifting away from this hospital model, partly because many consumers are demanding different choices, leading developers to find a profit in offering alternative models of long-term care. This shift is also a result of the changing demographics, to be discussed in later sections.

Within this historical context, long-term care has become associated with nursing homes, and nursing homes have become associated with a hospital-like setting. This history of hospital-like facilities originally designed to house the indigent has impeded efforts to develop a comprehensive approach for long-term care which serves all people who need it. There is another impediment: Medicaid and Medicare funding.

#### *Funding Mechanisms*

Some authorities suggest that the current long-term care policy has been largely influenced by Medicaid (Swan & Estes, 1993; Wiener & Illston, 1993; Goldberg, 1996). Medicaid was originally designed to pay for the health care of people on welfare, but it has become the major source of support for older people in nursing homes. In many situations, the family's income, as well as Medicaid, fund the long-term care recipient. For example, a married person on Medicaid who receives a pension of \$2000 a month, and has nursing home expenses of \$4000 a month, may be allowed to keep \$1000 for the at-home spouse after depleting almost all savings and assets. Medicaid pays the additional \$3000

a month needed for the nursing home. Both the family *and* Medicaid pay the nursing home expenses.

It does not take long for the average couple to deplete income and savings to welfare-eligible levels when paying the full cost of a nursing home and supporting a spouse at home. In 1993 the average cost of a year in a nursing home was more than \$37,000 (Wiener, Illston & Hanley, 1994). With the cost of the nursing home, in addition to the expenses of the at-home spouse, an older couple on a fixed income, despite efforts to plan for a secure future, may easily become "indigent" in a year or two (Coughlin, Liu & McBride, 1992).

Medicare primarily covers acute care costs and only a small amount of skilled care for a limited period of time (100 days). Less than 5 percent of older people have bought long-term care insurance, which currently pays for only about one percent of all long-term care (Wiener, Illston & Hanley, 1994).

Until recently Medicaid paid *only* for nursing home expenses when long-term care was needed. It did not pay for non-institutional care. Some experts feel that this hampered the development of alternatives to nursing homes such as home care or adult day care (Goldberg, 1996). If a disabled older person had limited funds, the choice was to stay at home without assistance or to move into a nursing home and receive total assistance through Medicaid. In the event of the absence, death, or hospitalization of a caregiver, the care receiver had little choice other than a nursing home, unless there were sufficient resources to pay for costly in-home help.

Some analysts believe that the availability of Medicaid funding encouraged the growth of the nursing home industry, including the growth of a nursing home lobby to protect its interests. Medicaid funding for nursing homes may account for the lack of an equally rapid growth of infrastructure for other publicly and privately paid-for choices such as assisted living and day care (Goldberg, 1996, Wiener, Illston & Hanley, 1994).

Instead, the for-profit nursing home industry, and its lobbyists, have developed.

In 1995 the nursing home industry fueled the third largest lobby in the state of Washington. They actively opposed state legislation such as "nurse delegation," which makes community-based long-term care options more viable and affordable. Nurse delegation refers to changes in state regulations which allow non-medically-trained personnel to administer medications and perform other nursing tasks under the strict supervision and training of an RN. Such changes in regulations enable services to be provided by less costly staff, as well as freeing nurses from chores such as frequent driving from patient to patient for home care.

It is only recently that the Health Care Financing Administration (HCFA) has made some exceptions, or "waivers," to allow Medicaid to pay for long-term care services other than nursing homes. Today Medicaid waivers support some new options such as homemaker services or alternative programs such as On Lok in San Francisco, but this is a recent change in direction for long-term care financing. For example, home health service expenditures (such as homemaker services mentioned above) reimbursed by Medicare grew from \$2.3 billion in 1989 to \$9.5 billion in 1993. Nevertheless, of nearly \$108 billion spent by Medicaid on long-term care in 1993, only about 30 percent paid for non-institutional care (Goldberg, 1996).

Consumer pressure, with a corresponding response by developers, seems to be the primary force behind new options such as assisted living and home care. Efforts to serve more people in need with the same or lesser amount of funding have been another force influencing this trend toward alternatives to nursing homes. Another influence on nursing homes is the impact of cultural values.

### *Cultural values*

Mainstream U.S. cultural values have shaped national long-term care policy in ways different from other countries. The U.S. is, in many ways, an ageist culture (Butler, 1993; Crews, 1993). Some critics of long-term care today point out that one reason why we may not have developed a better long-term care policy is that old people are not valued in our society. Wiener (1994) suggests that social values are reflected in social policy. Thus some policy makers may believe that elders who end up unable to finance their own long-term care are improvident and deserve less desirable types of care.

Discussions of death and dying tend to be culturally taboo in much of mainstream America (Kastenbaum, 1996; Nuland, 1995). The end of life is often associated with long-term care, and that may be another reason why long-term care policy is not closer to the forefront of political policy. Cultural norms make it a difficult topic for many people in our society to discuss openly.

But because of the growing older population, it is a topic that is increasingly difficult to avoid.

### Long-term Care is in Major Transition

#### *Changing demographics*

Until relatively recently, people over the age of 65 were a small percentage of the total population. This meant that the problems of older people represented a small proportion of public policy concerns and expenditures. Long-term care only became a concern in the last few decades because previously people died fairly young, and usually before they were disabled. The fact that this older population is growing dramatically means that their voices are heard more clearly and their influence is greater. Today people over the age of 65 are almost 13 percent of the population. In the year 2020, it is estimated that the proportion of persons 65 and over will reach 20 percent. Now people over 85 are the fastest-growing age group in the country and the age

group most likely to need long-term care (Manton, Stallard & Corder, 1995).

The prevalence of women in the work place, the fewer number of children in families, and the rise in divorce and single parenthood decrease the availability of family caregivers and increase the need for other types of long-term care (Macunovich, Easterlin, Schaeffer & Crimmins, 1995).

The relatively limited need for long-term care services in the past not only impeded the development of a comprehensive approach, it made it unnecessary. But most experts agree that because of the factors cited above, one is needed now (Wiener, Illston, & Hanley, 1994; Estes & Swan, 1993).

#### *Changing knowledge*

Not only are the population demographics changing because of the increased proportion of older people, but what we know about aging is also changing. According to Butler (1993), the process of aging was historically considered a process of progressive degeneration. Cognitive and physical decline was assumed to be "normal aging." Indeed the elderly were exhorted to rest and preserve what little life and energy they had left, hence the development of "rest homes" for the aged. This also relates to the "disengagement" theory that old people naturally withdraw from normal involvement in life. This theory had a brief period of credence in the 60s (Cumming & Henry, 1961). Empirical evidence today overwhelmingly supports the principles of remaining as physically, socially and cognitively active as possible throughout life (Grimby, 1995; McAuley, Shaffer & Rudolph, 1995; Tseng et al., 1995).

"Senility" was once considered synonymous with dementia and thought of as normal aging. It is now understood that pathologies such as Alzheimer's Disease and multi-infarct dementia cause cognitive decline, are not normal aging, and occur in a minority of the elderly, even those over the age of 85 (Kolata,

1996). A recent study to determine the prevalence of dementia (N = 7528) found an overall prevalence of 6.3 percent in persons aged 55 to 106; prevalence was 43.2 percent in persons aged 95 years and over (Ott et al., 1995).

Today it is empirically established that lifestyle, nutrition, exercise, and environmental factors greatly influence the level of disability in old age. For example, it was long assumed that muscles naturally lost mass and strength with age. Recent studies indicate that disuse causes loss of muscle and that if people exercise appropriately, even when in their 70s and 80s, significant increases in muscle mass and capability result, along with improvement in the ability to perform activities of daily living (Grimby, 1995; Manton, Stallard & Corder, 1995). This also may apply to mental function. Some studies suggest that practice and exercise improve memory (Clarkson & Hartley, 1990; Poser & Ronthal, 1991).

Disease prevention, health promotion, and provision of support services may have a substantial influence on how much long-term care is needed for how many people and in what types of setting. This suggests that the older people of today and tomorrow could experience the onset of lesser disability later in life and may need a different array of options for long-term care than has been available in the past.

#### Statement of the Problem

The factors discussed above—history, funding mechanisms, cultural values, demographics, and increased knowledge—have all had an enormous impact on the development of current long-term care policy and practice. History, financing, and cultural values have hampered policy development, since lack of a comprehensive policy is in itself a policy.

However, 1995 and 1996 mark one of the longest and most bitter Congressional budget debates in recent U.S. history. Some legislators feel that both taxes and entitlements should be

reduced. The entitlement of Medicaid and the long-term care system which it finances are part of the crux of this debate, and evidence that long-term care policy is undergoing major review and likely revision.

The changing demographics and cultural values, with the growing knowledge base about aging, all contribute to the fact that long-term care is in transition. Long-term care has changed considerably in the past 20 years; it is likely that the changes in the next 20 years will be even greater. Nursing homes are changing and the proportion of "beds" to the number of older people is decreasing. Availability of assisted living, both publicly and privately funded, is increasing.

In summary, a more cost-effective long-term care system is needed that better satisfies the needs of the population that is growing older and increasing in proportion to the rest of the population. In order to develop living environments congruent with diverse individuals and differing levels of functional ability, more information is needed. How do the two most important types of congregate care for older people, nursing homes and assisted living, compare in cost and quality of life?

#### Two types of Long-term Care Today

Two types of prevalent congregate settings for long-term care, nursing homes and assisted living facilities, are the independent variables for this study. The next two sections discuss their differences and similarities.

##### *Nursing homes*

Nursing homes, the older and more traditional type of long-term care in this study, generally adhere to a medical model and are strictly governed by state and federal regulations. A medical model is generally considered a "pathogenic" or disease and cure-of-disease (by a medical practitioner) framework. Terminology,

staff, physical configuration, and funding in nursing homes reflect the medical model. Residents are patients; staff are doctors, nurses, and nurses' aides; architecture is based on the hospital with nurses' stations, hospital beds, and double-loaded corridors with double and triple occupancy rooms on either side. In the state of Washington, from 60 to 70 percent of the nursing home residents receive Medicaid, which is designed to provide medical care for the indigent (Hardwick, Pack, Donohoe & Aleksa, 1994).

Since the implementation of hospital diagnostic-related groups (DRGs), which cause some patients to be discharged earlier and in a less stable condition, or as Estes & Swan (1993) express it, "sicker and quicker," some nursing homes have begun to provide sub-acute, short-term stays (Mor, Banaszek-Holl & Zinn, 1996). "Long-term care" has been defined as care for more than three months (Evashwick, 1996). Since nursing homes are now taking care of patients who once were cared for in hospitals, with 30-40 percent who are discharged in three months or less, the medical model may be reinforced in nursing homes, and some nursing homes may be moving towards the provision of care that is not "long term."

### *Assisted Living*

Ten years ago the term assisted living was rarely heard in retirement housing circles; even today it is not widely understood or universally well known. However, it is growing rapidly. In 1990, when the Assisted Living Facilities Association of America (ALFAA) was founded, there were four members; now there are 2065. Paul Klaassen, one of the first promulgators of assisted living and the founding chairperson of ALFAA, continues to serve as chair today. He imported the idea of assisted living to the U.S. in the 1970s when his parents needed the kind of supportive environment that he remembered from visiting his grandparents in Holland. In that country, frail older people are rarely institutionalized. Many are provided with support services in

private homes and apartments. The most disabled are in congregate housing with other older, disabled people, but the design and staffing of these facilities is based on a "social model" which incorporates residential architecture and social characteristics, as well as a much less "medicalized" environment.

A developer on the U.S. East coast, Mr. Klaassen saw that this type of retirement housing with services had potential for financial success, as well as providing a desirable type of living environment for his parents. Other developers soon entered the for-profit market. Consumers quickly welcomed this new option and advertising for assisted living facilities started appearing regularly in publications for seniors. Now many states are exploring this option for frail, older recipients of Medicaid.

A clear definition of assisted living today is somewhat problematic, because it is still relatively new among the range of options for older people with disabilities. Until recently few people were labeling any type of senior housing "assisted living." Although assisted living is now widely available, different facilities offer different amenities, and many potential consumers, as well as some service providers and referral sources such as discharge planners and physicians, are often ill-informed about the option of assisted living.

However, a growing body of literature provides specific guidelines about what comprises assisted living. The Assisted Living Facilities of America (ALFAA) defines assisted living as "a special combination of housing and personalized health care designed to respond to the individual needs of those who need help with activities of daily living. Care is provided in a way that promotes maximum independence and dignity for each resident and involves the resident's family, neighbors and friends" (Regnier, Hamilton and Yatabe, 1995, p. 2). There is particular emphasis on the physical environment itself: it should be accessible yet avoid an institutional character by appearing as home-like and residential as possible. Apartments should be

completely self-contained with private bathroom and kitchenette.

Despite the self-contained nature of the apartment, the resident and facility are expected to be integrated and interactive with neighborhood and family. For example, rather than automatically providing and charging for laundry services, many assisted living facilities offer easily accessible, self-service laundries in the building. Residents, and/or family members are encouraged to do the laundry, preferably together, which would be virtually impossible in a nursing home. Doing laundry gives family members and residents a meaningful task that can be therapeutic and social. Some assisted living sites provide a children's playground. Grandchildren, children of staff, and neighborhood children provide a lively and stimulating scene for residents while outdoors or while watching from inside the facility.

Regnier, Hamilton and Yatabe (1995) specify nine qualities of assisted living. They suggest that an assisted living facility should: 1) appear residential in character; 2) be perceived as small in scale and size; 3) provide residential privacy and completeness; 4) recognize the uniqueness of each resident; 5) foster independence, interdependence and individuality; 6) focus on health maintenance, physical movement and mental stimulation; 7) support family involvement; 8) maintain connections with the surrounding community; 9) serve the frail (p. 2-3). These are not impossible qualities to incorporate into a nursing home, but they are not the norm.

At the present time, most assisted living facilities are private pay, that is, consumers pay for housing and services from their own financial resources, but some states now provide assisted living for nursing-home-certified-eligible individuals through Medicaid. The state of Washington has 60 facilities licensed to provide assisted living through Medicaid to 552 persons in 1996. A number of other states, including New Jersey, Montana, and Oregon, are also using Medicaid funding for nursing-

home-certified-eligible individuals to live in assisted living (Kane & Wilson, 1993). Successful examples of this type of environment for low income, frail older people, such as Heritage House in Seattle's Pike Place Market, have stimulated considerable interest.

Several issues make assisted living controversial. Both the newness of this type of setting and its emphases on flexibility and individuality have meant that assisted living is considerably less regulated than nursing homes. Some advocates consider this an advantage; other critics fear abuses and inconsistencies. Regulations are under consideration at the present time, specifically in the state of Washington, for Medicaid recipients in assisted living. Administrators of assisted living facilities are watching this process closely as it seems possible that such regulations may then be imposed upon private-pay residents.

Another debate is around the issue of risk. One viewpoint is that frail older people are in particular need of protection, and almost any restriction can be justified if it increases safety. Another point of view is that all life is risky and the restrictions imposed by stringent safety measures may disproportionately decrease quality of life. A frequently heard example in this debate is the woman living alone who has a fall and cannot get up unassisted. She is not discovered for hours or days later and the family or case management system "places" her in a nursing home. She tells everyone she wishes that she had died there on that floor rather than live where she is. An individual may prefer the risk (and the reality) of a bad fall and premature death to the limitations of a safer environment.

The Omnibus Reconciliation Act (OBRA) of 1987 put limits on physical and chemical restraints, and their use has declined dramatically from nearly 40 percent to 20 percent of the nursing home population (Vladeck & Feuerberg, 1996). There has not been a documented corresponding increase in falls, despite the significantly fewer restraints. Nevertheless, when falls in nursing homes are studied, the incidence is higher than in those living

independently. This is not necessarily cause and effect. Nursing homes may not cause falls; increased falls in nursing homes may reflect a population which is less able to walk without falling. However, the more medicated nature of the nursing home population and factors such as hard, slippery, shiny floors may indeed increase the likelihood of falling in a nursing home. Falls are only one illustration of these complicated risk versus safety and choice versus control issues.

Some critics interpret concern over safety to be concern over litigation. The liability issues in nursing homes and assisted living are ever present. A concept which has been introduced in assisted living to cope with these issues is that of "negotiated risk" (Kane & Wilson, 1993). The individual and family members discuss and agree on what risks are acceptable and what risks are not. Acceptable and unacceptable risks are documented, signed by all parties, and kept on file.

A current debate regarding regulations for state-funded assisted living in the state of Washington is that of limited access to the outside. Many persons with mild to moderate dementia are in assisted living facilities, both public (Medicaid) and private pay. Wandering is a common problem with dementia, and the concern is not only for the safety of the individual, but also for public safety. If someone wanders out onto a freeway, for example, the dangers are obvious. Locked doors to the outside could be considered contrary to the principles of assisted living. Yet assisted living is considered an optimum setting for many people with dementia. Diseases such as Alzheimer's, for example, do not generally benefit from medical treatment as such; the need is for supervision and prompting for appropriate dressing and toileting, provision of meals and medications. If locked wards preclude approval for Medicaid-funded assisted living, persons with dementia could end up in an unnecessarily restricted environment staffed with more costly medical personnel such as RNs. Compromises such as "Wander-guard" electronic bracelets, which

alert the staff if an individual exits, are used in many facilities and are being considered as a method to avoid restrictive "locked wards" contrary to the principles of assisted living.

Two implicit assumptions about aging and the elderly that are made in assisted living are that most older people prefer independence and privacy. These assumptions underlie much public policy for older people in America, a nation founded by a "Declaration of Independence." Yet there is no body of empirical evidence that conclusively documents that the majority of older people value and prefer independence. One study with 675 respondents found that while control over one's life, social support, and performance caused increased life quality, control by others did not relate to decreased life quality (Abbey & Andrews, 1985). Although some studies and surveys found that older people favor self-reliance and fear becoming a burden (AARP, 1986; Gallup, 1989), other research indicates that many older people who are aging most "successfully" in terms of mortality, morbidity, and expressed satisfaction are part of social support networks and are comfortable with interdependence on family, friends, and public and private services (O'Bryant, 1991; Seeman, et al., 1995).

Privacy is another important American cultural value. Yet many studies (Blazer, Burchett, Service & George, 1991; Bodner & Kiecolt, 1994; Gray, Ventis & Hayslip, 1992) indicate that isolation and loneliness are detrimental to physical and mental health. Although privacy and isolation are not synonymous, it seems likely that increased opportunities to be alone can lead to increased possibilities of isolation. In contrast to many assisted living facilities, visitors who are unfamiliar to the nursing home environment can be appalled at the clamor and lack of privacy in many nursing homes. But it is conceivable that for some individuals this lively atmosphere is a benefit. Other research indicates that some persons needing long-term care, such as those with Alzheimer's disease (Mintzer, et al., 1993; Roper, Shapira, &

Chang, 1991), may have fewer problems in a more peaceful, uncomplicated environment.

### *Shared Qualities of Nursing Homes and Assisted Living Facilities*

Nursing homes are changing to accommodate new information about aging, such as the need for social supports, and are adapting to consumer demands such as privacy and autonomy. According to Noell (1996), the same market forces that created the birthing center in hospitals are transforming the nursing home from a mechanistic medical institution to a more humanistic center that fosters health and wellness, much as assisted living proposes to do. In both the birthing centers and in the newer nursing homes, one often sees an environment that not only serves the needs of doctors and staff, but also attempts to meet the needs and preferences of family and care receiver.

Therefore, the medical model for nursing homes and the social model for assisted living do not have mutually exclusive characteristics. Some nursing homes provide a few private rooms with private baths, and many long-term residents bring in their own furnishings, including refrigerators and microwave ovens. Nursing homes, some more than others, urge staff to respect privacy and dignity, while many newer facilities include a generous use of natural light and natural materials, as well as rugs, drapes and a more home-like decor. Some assisted living facilities are maintaining more severely disabled residents as tenants "age in place" and thus are providing increased medical services. Those assisted living facilities that employ traditionally trained medical staff find it difficult to instill and enforce the principles of a social model, such as obtaining permission before entering a room, or allowing residents to make choices about food, smoking or safety that may be perceived as less desirable. Therefore, some assisted living facilities and some nursing homes are trying to solve similar problems of humanizing the setting and the care provided.

Consequently, nursing homes and assisted living are not dichotomous. Nevertheless, these two environments are clearly different—in regulations, cost, appearances, staffing, and generally in their underlying principles. The fact that individuals benefit from challenge in their daily lives is more often acknowledged in assisted living, which is much less densely staffed by less medically-trained personnel. Residents in assisted living are expected to perform as many tasks as possible for themselves. Nursing homes tend to take over more care, such as bathing, with less consideration for the resident's privacy, preferences and abilities (Williams, 1996).

The fact that nursing homes and assisted living have physically and philosophically different environments, yet similarities such as congregate meals and personal care, has implications for this study. Despite these differences, how similar is the functional status of the residents in each setting? How do residents perceive the quality of their lives? What are the cost differences?

Assisted living is a major component of the current transitional period of long-term care and as such, there is a need for more empirical data about it in terms of cost and effectiveness. The need for more information about the impact of assisted living on older residents is a major reason for conducting this research which compares cost and quality of life in comparable individuals in nursing homes and assisted living facilities.

## CHAPTER II: LITERATURE REVIEW

An examination of the literature about person-in-environment fit, environmental press, and quality of life provided a background for this study. Some of the most relevant studies are discussed below.

### Person-in-Environment Fit

The person-in-environment (P-E) fit or congruence model is the theoretical framework underlying this research which compares the older residents of nursing homes and the residents of assisted living facilities.

The notion of person-in-environment fit is derived from Lewin's theory (1951) that behavior is a function of the person and the environment of that person. His framework incorporates vectors of time and space (E) on the individual (P) into a system as a whole. The Lewin model has been used as the basis of a congruence model of P-E fit in which "...individuals are most likely to seek and be found in environments which are congruent with their needs" (Kahana, Liang & Felton, 1980, p. 584). The person (P) in each setting is matched by functional status. Scientists and theorists have studied both the impact of the environment on the individual and the modification of the environment by and for individuals (Kahana, 1982). Environment is an important aspect of congruence, therefore an appropriate environment—a good "P-E fit"—in this model should be reflected by greater congruence and higher perceived quality of life.

### Environmental press

The concept of environmental press and individual competence (Lawton & Nahemow, 1973) is a specific approach to P-E fit and an example of what might enhance a "good" P-E fit. Competence is defined as "the theoretical upper limit of capacity of the individual to function in the areas of biological health, sensation and perception, motor behavior, and cognition" (Lawton,

1983, p. 350). The appropriate amount of stress (environmental press) on an individual enhances maximum function, i.e., competence. Either too much or too little decreases function. As disability increases, the amount of appropriate environmental press decreases. A good P-E fit is the at this "upper limit of capacity of the individual."

Stairs are a good example of appropriate environmental press. An individual with mild arthritis might benefit from the light exercise of going up and down a flight of stairs to do the laundry; function therefore would be enhanced. However, severe arthritis might hamper or preclude going up and down stairs, especially when the person is carrying a laundry basket. The more severely impaired person would be at greater risk of falls and fractures in this case, and the overly challenging stairway would inhibit the individual's ability to perform this important instrumental activity of daily living. The stairs would present too much environmental press, distressing and endangering the individual with disabilities.

Even the most severely disabled individuals, however, benefit from challenge and stimulation. Too little physical and social environmental press can cause decline from disuse and frustration from boredom, among other decrements. A person can overcome an unstimulating environment if modifications are made. For example, a 65-year-old man with spinal cord injury, quadriplegic with severe limitations, enjoyed and obviously benefited from cruising the corridors of a nursing home, which was made possible when he blew into a straw to move the wheelchair. This mode of travel enhanced his "P-E fit." The overlap or "congruence" of his person-in-environment was a greater "fit" than would have been possible without the personal and environmental modifications.

The ideal mix is at the upper limit of the comfort zone; the most congruent P-E fit includes the right amount of environmental press for the individual under consideration. Fit can be enhanced

both by modifying "P," the individual's capacity, for example, with training and rehabilitation which would include challenge or "press," and by modifying "E," the environment, for example, with improved access, such as wheelchair ramps, so that the "press" is not beyond the individual's limits (Regnier, Hamilton & Yatabe, 1995). The quadriplegic man mentioned above modified his capacity through training with the mobility device, and the environment was modified to be of maximum accessibility.

Although the variable of environmental press is not measured in this study, assisted living is considered to be a long-term care option with more "environmental press," i.e., challenge, than nursing homes (Kane & Wilson, 1993). Staff are less available for residents, fewer medical services are provided, and residents are expected to manage more independently in assisted living than residents of nursing homes. Some studies suggest quality of life can be enhanced by this increased challenge, independence, privacy, and autonomy found in assisted living (Regnier, 1995).

### Quality of Life

Quality of life is a variable that researchers refer to with great frequency, define with considerably different terminology, and measure with great difficulty. It is universally regarded as important, with equal agreement that it is elusive (Birren, Lubben, Rowe & Deutchman, 1991; Bergner, 1989; Lawton, 1983; George & Bearson, 1980; George & Fillenbaum, 1985).

Quality of life is defined here as "the multidimensional evaluation, by both intrapersonal and social-normative criteria, of the person-environment system of an individual in time past, current, and anticipated" (Lawton, 1991, p. 6). This definition is used in this study because it takes into account the perceptions of the individual as well as of society; antecedents as well as potential; and acknowledges that not only is quality of life multidimensional, but different dimensions may have different levels

of importance to individuals. It also uses the concept of person in environment. This definition easily incorporates the terminology used in quality of life research, in which terms such as "satisfaction," "well-being," and "positive and negative affect," are sometimes used interchangeably and are sometimes interpreted as being separate, but related, aspects of quality of life. These differing terms and definitions make quantifying quality of life challenging.

Also, quality of life in older people may be particularly challenging because of the fact that as we age, we become more differentiated, rather than more alike. The highly individual nature of older adults makes it less likely to find shared components that together contribute to a higher quality of life for all older people. Comparing cost and quality of life in individuals in long-term care is the subject of this study. Results can possibly add to our understanding of how to maximize quality of life in the most effective manner. But if indeed quality of life is so different for everyone, how can one hope to provide optimal long-term care that maximizes quality of life? The concept of congruence in a person-in-environment fit helps to answer this important question, as discussed below.

#### *Factors that may Affect Quality of Life*

There is little agreement among researchers regarding how age and time might affect quality of life. Greater age, of course, is a result of greater passage of time, and as such may contribute to different perceptions of or different values for quality of life. Some studies have asserted that age is not a predictor of quality of life. Andrews and Withey (1976) found that the combined effects of age, sex, race, income, education and occupation accounted for only 15 percent of the variance in a measure of overall life satisfaction for more than 5000 Americans in four separate representative samplings. Age in particular seemed to show no marked differences in the quality of life scores, both in

happiness, and in life as a whole. Several factors discussed below may account for this finding.

In a longitudinal study of 675 Americans, Abbey and Andrews (1985) studied the determinants of quality of life and found that increased quality of life was predicted by social support, performance, and control over one's life. Stress and depression were found to predict a decrease in quality of life. In their analysis, socioeconomic status, marital status, and age only showed a modest relationship, if any, to self-assessed quality of life. They used a general evaluation of life quality made up of three components: 1) positive affective response, 2) negative affective response, and 3) cognitive evaluation. Because these three components only use the individuals' perceptions and affect, it is a different methodology from other studies, such as Lawton (1983) and Cohn and Sugar (1991), which take into account other perspectives such as society and family.

Lawton (1983) divides quality of life into four overlapping sectors, 1) behavioral competence; 2) psychological state, which includes neuroticism or negative affect such as anxiety and depression; agitation—worry, pessimism, etc.; happiness; positive affect—pleasure, good feelings; and congruence between desired and attained goals; 3) the individual's perceived quality of life and 4) the objective environment, which includes physical environment, personal environment, small-group environment and social environment.

He illustrates these as four overlapping circles which, all together, determine "the good life." Therefore quality of life is made up of more than just the individual's perception; it incorporates both personal and social criteria. Lawton emphasizes the intrapersonal, social-normative, person-environment and temporal aspects of quality of life.

However, Lawton's model is tautological and difficult to operationalize. Although he designates psychological well-being and perceived quality of life as two separate realms, they are

strongly related, and overlap in his model. Any scale measuring a high score on psychological well-being probably will be reflected in a high score of perceived quality of life; one is unlikely to express a strong sense of well-being and a low perceived quality of life. No research has been conducted separating out his four aspects of what he defines as "the good life."

Lawton's model does take into account social and cultural values. For example, a mentally ill or cognitively impaired person may find a situation tolerable that society in general abhors. Societal and cultural values may at times impact or override individual perceptions and preferences. A homeless person living on the street may declare his or her life preferable to any other; most members of society would disagree.

The perceptions of quality of life among individuals living in long-term care may not be the same as the perceptions of others within and outside such settings. In a study of determinants of quality of life in institutions, Cohn and Sugar (1991) found that the perceptions of quality of life of older people themselves in nursing homes (N = 75) were notably different from the perceptions of the staff (N = 46) and the family members (N = 40). For example, staff rated bathing as much more important to quality of life than did residents; families rated contact with family and friends much more highly than did residents or staff. Residents considered morale—which included enthusiasm, identification with the institution, and positive and negative views that may affect their lives—as a more important component of the quality of their lives than did family or staff.

Rodin (1986) suggests that the relationship between quality of life, health, and a sense of control may be more important in older people than in younger people. Her study noted detrimental effects on quality of life when older people's control of their activities was restricted, and that interventions enhancing options for control by nursing home patients promoted health and quality of life.

Another study (Herzog & Rodgers, 1986) suggests that older adults tend to report somewhat higher levels of life satisfaction than do younger adults. While satisfaction may not be synonymous with quality of life, most studies consider it to be an important component (Lawton, 1983; Michalos in Andrews, 1986; Pearlman & Uhlmann, 1991). Since satisfaction is not the same as quality of life, comparison of different studies using one or the other are complicated. It is also difficult to determine whether mechanisms such as denial or protection of self-esteem may be stronger in older persons. Conceivably these could be survival traits. No research has provided conclusive evidence that such dissonance reduction mechanisms contribute to survival, however.

There is possibly a tendency among people in general to respond to questions about well-being with a relatively upper mid-range response. Andrews and Withey (1976) found that people tend to see their own lives as better than most other people's lives and most other peoples' lives were judged to be near the middle of whatever scale was used.

Elapsed time may also be a factor in quality of life. Inglehart & Rabier (1986) maintain that assessment of quality of life changes from the short term compared to the long term, so that the gap between the aspiration level and the perceived situation narrows over time. Perception of a distinct drop in perceived quality of life may be experienced with an abrupt change, such as relocation or loss of a spouse. Over time, perceptions of quality of life readjust upward, even though (and somewhat because) the situation has remained constant. This coincides with the notion that a person makes appropriate internal modifications over time in order to fit the environment better. The environment has remained relatively stable, but the person has changed by reducing dissonance and adjusting to the situation, perhaps with resignation, acceptance, and/or familiarization.

Inglehart & Rabier used a large dataset of 139 national surveys with a total N of approximately 139,000 respondents from 1973 to 1983 in 11 western countries, and concluded that subjective well-being reflects the gap between the aspiration level and the perceived situation: in the long term, one's sense of well-being is adjusted upward in a wide variety of circumstances. Subjective well-being is the "intrapersonal" aspect of quality of life described in the earlier definition.

To set this concept within the P-E fit model, the person adjusts over time to fit the environment. To test this theory, Inglehart & Rabier (1986) studied persons in groups with highly stable characteristics in comparison to those with relatively recent changes in income or marital status. They found evidence which indicated that individuals can and do adjust their aspirations to their situations, for example, shifting upward with prosperity and downward with adversity.

In a cross-sectional study, Campbell et al. (1976) found that the oldest are the most satisfied age group and achieve a progressively better fit as they age. Perhaps many lives become more stable with time and then are reflected as such with a higher perceived quality of life. It seems logical to suggest that age may affect different individuals' quality of life differently.

One possible way to incorporate such diverse and even contradictory information about quality of life is to acknowledge the highly individual nature of this concept. For example, Gill & Feinstein (1994) believe that a most effective measure is to ask individual respondents outright specifically to evaluate their overall quality of life by answering a question such as "How would you describe your quality of life: terrible, poor, average, or excellent?".

Based on this review of the literature, the P-E fit construct can help bring together these different possibilities of understanding, defining, and measuring quality of life. This is the illustration in Figure 1, developed by this author, in which the

overlapping spheres of person and environment demonstrate congruence, or fit, as an indicator of quality of life (see Figure 1). The greater the overlap, the greater is the potential for the highest possible quality of life.

### Congruence and Quality of Life

Although different researchers have found different attributes, domains, or sectors of quality of life and different influences on quality of life, all can be incorporated into a P-E fit model; this is a primary reason why the model is useful for this study of long-term care.

To illustrate how congruence between person-and-environment can indicate maximum quality of life in long-term care, Figure 1 shows two overlapping circles, one representing person and the other the environment, either a nursing home or an assisted living facility.

Although counter forces could be placed inside the circles to push them apart, it is proposed here for simplicity's sake (and because potential counter forces were not measured variables in this study) that the force of the vector only pushes toward the center. An extremely incongruent environment, such as a totally well, non-disabled person living in a nursing home, would be illustrated by the long-term care setting vector having no force at all; the arrow would have no impetus to push the P-E circles towards congruence. The circles would not overlap at all.

The person side of the P-E fit model shows the vectors of age, functional status, and length of stay. The environment side shows a vector representing the type of long-term care setting, nursing home or assisted living facility. Cost is illustrated by a vector on the environment side, because affordability could enhance congruence.

Congruence is hypothesized as a major predictor of quality of life, as operationalized by the scores on the quality of life instruments. The amount of greater or lesser congruence will be

reflected by the greater or lesser amount of overlap of the spheres of person (P), and environment (E); the greater the overlap, the greater the goodness of fit. The greater the goodness of fit (congruence), the higher the scores on the measures of quality of life.

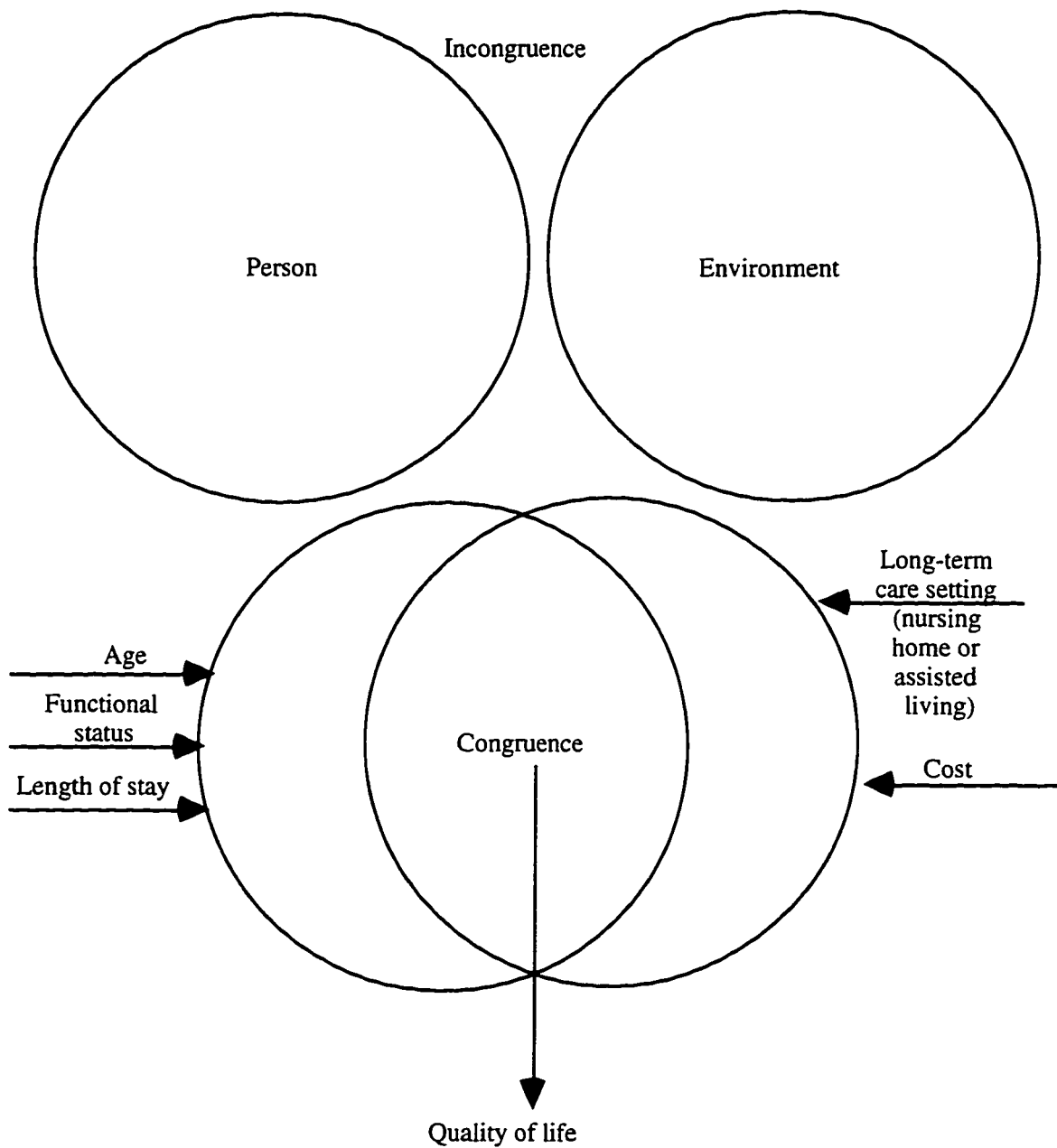


FIGURE 1  
Person-in-Environment Fit in Long-term Care

In summary, although there are many models, definitions, and measures of quality of life, there are limitations to each of them. However, the concept of P-E fit and congruence takes into account the highly individual character of quality of life and the most important constructs referred to in the literature. Therefore it is well suited to this study.

### Research Questions and Hypotheses

The primary question that this research seeks to answer is: how do individuals of comparable functional status in nursing homes and in assisted living facilities compare in regard to quality of life and monthly costs.

One hypothesis for this study is that in pairs of comparable individuals, one in a nursing home and the other in an assisted living facility, matched by level of functional ability, individuals in assisted living will perceive a higher quality of life. The other hypothesis is that in the matched pairs, individuals in the nursing homes will pay a higher cost per month than the individuals in assisted living.

## CHAPTER III: METHODOLOGY

### Research Design

This study uses a quasi-experimental design of 43 matched pairs, with one person from a nursing home and one person from an assisted living facility in each pair. Pairs were matched if scores on a scale of functional ability (the SIP-NH) fell within two points of each other (0 to 100 possible). When more than one match was possible, the closest match of the psychosocial subscore determined which cases were included in the pairs. The SIP-NH was administered to 100 nursing home (NH) residents and 100 assisted living (AL) residents. Three NH residents were later omitted from the final data set because upon closer examination they did not meet the study criteria (age 65 or older, absence of guardianship, and residency of three months or more in the facility under study). If residents' responses to the SIP-NH appeared such that they would fall into the potential matching range (and the residents had sufficient time and energy), the researcher administered the quality of life instruments. Additional details on matching appear in Chapter 4 (Findings), because they are based on results of the SIP-NH.

### The Sample

This research was completed in three counties (King, Snohomish, and Pierce) in western Washington during a six-month period from July through December 1995. A current and comprehensive listing of all nursing homes and all assisted living facilities in this geographic area was created from several sources—the Area Agencies on Aging, Senior Information and Assistance offices, senior publications, and the Seattle Mayor's Office for Seniors. Nursing homes were defined as facilities that were licensed as nursing homes. Assisted living facilities were defined as congregate living facilities for older people that were licensed by the state of Washington as "Board and Care" homes,

had 25 or more residents, and called themselves assisted living facilities. A computer-generated random sequential ordering was then performed using SAS.

### Strategy for Soliciting Participation *Administrators*

A strategic plan was formulated to approach the administrators of the first ten nursing homes and the first ten assisted living facilities on the randomized list. It was anticipated that some sites might not welcome research because of possible impositions on valuable staff time, concern for residents' privacy and confidentiality, lack of control over results, and the potential for negative findings. Therefore, the researcher first contacted the administrator with a phone call briefly describing the project and assuring the administrator that all responses would be anonymous, and that the names of the sites would not appear in the final report. The administrator was not asked to make a decision during the phone call, but was informed that written information would arrive within a few days. Administrators were again contacted by phone a week later, after having received the information mailed. They were assured that the study would have minimal impact on staff time, that residents would generally enjoy the process, and that the administrator would receive an executive summary of the results.

All ten assisted living facilities that were approached agreed to be research sites. Three nursing homes refused, without giving reasons why, but the next three in the random sequence agreed to participate. There were more than one hundred sites in the nursing home random selection pool and more than one hundred in the assisted living random selection pool. The random selection was intact for assisted living, but not for nursing homes. Selected sites ranged from urban and suburban to small town and rural. Of the ten nursing homes, six were non-profit organizations and two of those were part of continuing care retirement communities (CCRCs). Of the assisted living facilities, four were not for profit

and one of those was within a CCRC. One nursing home site was connected with the Veteran's Administration. Sixty-three percent of the nursing home subjects in this research received Medicaid.

In the state of Washington approximately 60 percent of nursing homes are proprietary and 60 to 70 percent of residents receive Medicaid assistance (Hardwick, Pack, Donohoe & Aleksa, 1994). This is similar to the national average (Wiener & Illston, 1994; Wieman, 1992) and therefore suggests that the nursing homes are representative sites in terms of Medicaid funding and type of ownership both in Washington State and nationwide. Few data are available about the ownership and Medicaid eligibility of assisted living facilities nationwide, so that conclusions cannot be drawn about their representativeness.

### *Subjects*

Once an administrator had consented to allow facility participation in the study, a date was arranged for a site visit. At the time of the site visit, a random selection of subjects was made by examining the list of all residents with an administrator, social worker or nurse. Residents who were under 65, were not their own responsible party (had a legally appointed guardian), or had been there less than three months were eliminated from the pool. Then the number of eligible residents remaining were counted and the total divided by ten, so that ten names were selected. For example, if one hundred residents in that facility were eligible to be in the study, the researcher contacted every tenth person. Of all those selected, 24 nursing home residents and 8 assisted living residents were unable to participate in the study because of communication disorders, coma, or severe dementia.

After a careful explanation regarding confidentiality, anonymity, and research, all subjects signed a consent form and were paid \$5 to participate. In the nursing homes, 11 people refused to participate, and in assisted living 8 residents refused. Most people who refused said they were too tired, ill, or busy. In

the cases of those who were unable or unwilling to participate, the person above or below on the list was contacted. In this situation, with a possibility of two choices, one up or one down on the list, if one was a male or member of an ethnic minority group, that name was selected. This slight over-selection of males and minorities was made to minimize the possibility that these groups were not under-represented in the final study. Nationally, as indicated in Table 1, about 70 percent of nursing home residents are female, the median age is 81, approximately 4 percent are African-American, and approximately 90 percent are Caucasian (Butler, 1996; Engle & Graney, 1995; Evashwick, 1996). If both possibilities were female and Caucasian, the first name was contacted first. It was not thought necessary to do more than this to overselect for minorities and men in the overall random selection, because the great majority of residents in nursing homes are female and Caucasian, and a comparable sample was desired. Data on age, gender, ethnicity, education, and length of stay for assisted living residents are not easily available.

#### Respondents' Characteristics

The characteristics of the study respondents are similar to the characteristics of nursing home residents nationally (See Table 1 and *Respondent Characteristics*). Demographic characteristics of respondents in nursing homes and in assisted living were similar, and except for age ( $p < .05$ ), the differences were not significantly statistically. In the nursing homes, 63 percent of the subjects were female; in assisted living, 65 percent were female. This is comparable to the national average of 65 to 70 percent (Wieman, 1992; Butler, 1996). Ages ranged from 65 to 100 (one each); the average age in the nursing homes was 81.5 years and the average age in assisted living was 85.8 years, again similar to the national average of 81, (Evashwick, 1996). Differences between gender, ethnicity, level of education, and length of stay were not

significantly different between individuals in the two types of long-term care.

TABLE 1  
Demographic Characteristics of 43 Matched Pairs

	<u>Nursing Homes</u>	<u>Assisted Living</u>	<u>Nat'l</u>
Mean age* t = -2.59	81.5 years	85.8 years	81 (NH)
Gender t = -.22			
female	27 (63%)	28 (65%)	65%(NH)
male	16 (37%)	15 (35%)	
Ethnicity t = -.51			
Caucasian	40 (93%)	39 (91%)	90% (NH)
African-American	02 (05%)	02 (05%)	N.A.
Hispanic	01 (02%)	02 (05%)	N.A.
Highest Level Ed. t =.36			
High School or Less	24 (56%)	28 (65%)	N.A.
Some College	19 (44%)	15 (35%)	

Length of stay, nursing home residents

Value Label	Value	Frequency	%	Valid %	Cum %
3 months to <1 year	.5	15	34.9	34.9	34.9
1 to <2 years	1.0	8	18.6	18.6	53.5
2 to <3 years	2.0	10	23.3	23.3	76.7
3 years or more	3.0	10	23.3	23.3	100.0
Total		43	100.0	100.0	

Length of stay, assisted living residents

Value Label	Value	Frequency	%	Valid %	Cum %
3 months to <1 year	.5	17	39.5	39.5	39.5
1 to <2 years	1.0	9	20.9	20.9	60.5
2 to <3 years	2.0	6	14.0	14.0	74.4
3 years or more	3.0	11	25.6	25.6	100.0
Total		43	100.0	100.0	

\*Only on age were the two type of long-term care populations significantly different (p < .05).

## Variables and their Measurement

### *The Pilot Study*

A pilot study (Franks, 1995) of two facilities, one a nursing home and the other an assisted living facility, was conducted prior to the major study to test potential instruments and to determine whether or not it seemed possible to match enough pairs on a scale of functional ability. Ten people in each facility were randomly selected and the Sickness Impact Profile for Nursing Homes (SIP-NH) was administered to all 20 (see *Instrumentation*). More than half the subjects in each facility could be matched by functional ability scores within three points out of a possible 100. Three quality of life instruments, one devised by Pearlman and Uhlmann (1991); another by Ferrans and Powers (1990); and a single overall question, were also administered to subjects to test suitability and respondent burden. A number of subjects in the pilot study who responded to more than one quality of life instrument thought that the Ferrans and Powers questionnaire and the overall question were the better instruments because the questions covered the most important aspects of their lives. For example, the Ferrans and Powers instrument includes a question about a person's sex life; the Pearlman and Uhlmann instrument does not. While the final two questionnaires considered for the study were similar, the greater detail of the Ferrans and Powers instrument was considered an advantage, as well as the fact that respondents preferred it and that it has been more widely cited in the literature. The Ferrans and Powers instrument also has the second component of asking respondents exactly how *important* each question was to them individually. It was therefore chosen for use in the larger study.

Prior to the larger study, three community-dwelling older people completed the SIP-NH and the QLI to see if the scores reflected as low a level of disability and as high a perception of quality of life as might be expected. The volunteers did score a

very low level, < 10, of disability on the SIP-NH and a perception of a high quality of life, > 20, on the QLI.

The efforts to conduct the pilot study also indicated that approaching administrators and potential subjects was difficult, but not overwhelmingly so. Both residents and staff were helpful, even eager to participate in research that could possibly improve long-term care, as long as confidentiality, respondent burden, and use of staff time were minimized.

### Data Collection

Data were collected through personal interviews in the nursing homes and assisted living sites, all conducted by the same interviewer. Great efforts were made to obtain privacy, not always a simple task in nursing homes and even in some assisted living sites. In some facilities a private meeting room, such as the doctor's office, was made available. Two sites opened the beauty parlor, which was not in operation that day. Sometimes a roommate was out and the room was private. Occasionally the interview was conducted outdoors.

Interviews ranged from one-half hour to two hours, depending on the respondent and whether or not both instruments were administered. The quality of life instruments (the Ferrans and Powers QLI and the single-item questions) were administered to subjects upon completion of the SIP-NH if (based on the scores in the pilot study and the experience of the interviewer) it appeared that they were likely to fall within the potential matching range, and if respondents were not too fatigued by the first set of questions. In all, these quality of life instruments were administered to slightly more than half of the 197 subjects.

### Costs

Data on costs were gathered from respondents and staff to the extent feasible, given time and resource constraints. Monthly

costs include not only care, but housing, meals, laundry, incidentals, and other expenses. Most facilities and respondents were forthcoming about basic monthly costs, but additional costs such as phones, cable TV, hair care, paper products, snacks, clothing, medications, outings, church contributions, reading materials and incidentals were more difficult to determine. Nevertheless, many such costs have been included whenever possible.

Medicare premium costs of \$46.10 per month were not included because the basic premium for everyone was the same and virtually everyone in this study was on Medicare. Supplemental health insurance premiums were not included in the overall cost because few respondents knew what they were paying. Since eliciting this information from staff or family members would have been prohibitively time consuming, it was excluded. Most low-income respondents were not paying for Medicare supplementation; most well-to-do respondents were paying for supplementation, usually at a cost of \$70 to \$100 a month.

Prescription medications costs can be considerable. The average cost for Washington State retirees' prescriptions was more than \$40 per month in 1995 (Washington Health Care Authority Report) and is even higher for long-term care residents. The new drug distribution systems, which comply with state and federal requirements, as well as recent nurse delegation legislation, mean that pre-sorted and sealed prescriptions can be administered safely by non-medical staff in both assisted living and nursing homes. The medication costs then become virtually identical for both types of sites (D. Duncan, personal communication, February 22, 1996). Although the average nursing home resident may be on more medications than the average assisted living resident, since they are case controlled by matching, it is likely that the prescription drug costs are similar for each person in the matched pair. Each half of the matched

pair has a similar level of "Sickness Impact," which may be reflected in the cost of medications. In addition, determining the exact cost of each individual's medications was prohibited by time and staff constraints. Therefore prescription drugs have been excluded from the cost component.

Grooming was considered an important part of a person's routine by both staff and residents. Hair care costs were calculated for most participants individually. Medicaid recipients in assisted living had to pay for hair care out of the monthly allowance for incidentals, which was \$38.84 before November 1, 1995 and \$50 per month after that date.

As mentioned above, the incidentals allowance for Medicaid recipients in assisted living is currently \$50 per month. It is \$41.60 per month for those in nursing homes. All items such as snacks, cigarettes, clothing, reading and writing materials, toiletries, paper products and gifts for staff, friends and family must be paid out of this allowance.

Since several CCRCs were in this study, contact was made with their financial officers to work out a way to add in the one-time entry payment in an equitable way. This was possible because all of the CCRCs had designated (usually by computer program) a monthly figure for private-pay tenants who were not members of the CCRC; that figure took into account the unpaid entry fee.

#### Instrumentation

The two survey instruments used to gather data were the Sickness Impact Profile for Nursing Homes (SIP-NH) and the Ferrans and Powers Quality of Life Index (QLI).

The SIP-NH is a measure used to determine functional status (see Appendix I). It is based on the original SIP (Bergner, Bobbitt, Carter & Gilson, 1981), a widely used multidimensional, behaviorally-based measure of health status. It has been in use for the past decade and its reliability and validity are well established

(Arnold in Birren et al., 1991; Bergner, Bobbitt & Pollard, 1976; Kane and Kane, 1981). It provides a comprehensive assessment of physical function and includes a psychosocial well-being measure as a subscore and as part of the overall score. A sensitive measure, it is used both for determining even small changes in an individual over time and also differences between individuals. In a study of applicability to nursing home residents, Rothman, Hedrick & Inui (1989) found a twenty-four hour test-retest reliability of .92 for total scores; a 90% agreement in interrater reliability; an internal consistency coefficient (Cronbach's alpha) of .94; and concurrent and construct validity supported by correlations with clinical and laboratory findings, patient self-reports, and clinician assessments of patient health status.

To reduce the respondent burden and make it more relevant to nursing home residents, researchers at the Audie Murphy Memorial Veterans Affairs Hospital in San Antonio (Gerety et al., 1994) reduced the SIP from 136 items to 66 and retained acceptable internal consistency and external validity, as well as correlations between the SIP and the SIP-NH of  $r = .97$  on the physical and psychosocial dimensions. Convergent and discriminant validity were also found with the Katz Activities of Daily Living, the Physical Disability Index, Geriatric Depression Scores, and the Folstein Mini-Mental Status Exam.

An advantage of both the SIP and SIP-NH is that scores on each question are individually weighted. For example, a positive response to the question, "I have trouble getting shoes, socks or stockings on" is scored with 5.7 points, while a positive response to the question, "I am in a restricted position all the time" is scored with 12.5 points. These weights were developed with an "exhaustive and meticulous process" by a panel of health care providers from multiple disciplines (Gerety et al., 1994).

The questions on the SIP-NH are carefully worded to eliminate misleading responses. Each question is either true or false, and a second question confirms that if true, the response is

based on health, to avoid counting people as disabled who merely prefer not to bathe, dress, etc. The instructions for the SIP-NH tell the researcher to tell the respondent, "For the purposes of this study, if you respond true, that a statement does describe you, and if the reason it describes you is because you are in a nursing home, then you should respond, yes, it is related to your health." Being in a nursing home is equated with poor health. The exact wording was modified to fit both nursing home and assisted living residents by stating, "For the purposes of this study, if you respond true, that a statement does describe you, and if the reason it describes you is because you are here, then you should respond, yes, it is related to your health." If the resident replies "I don't know," the question is eliminated.

Two separately calculated subscales, plus three other categories, consisting of sleep and rest, recreation, and eating, make up the total 66 questions for the overall SIP-NH (calculated with scores from all 12 categories together). The psychosocial subscale of the SIP-NH is made up of 25 questions relating to categories of emotional behavior, social interaction, alertness, and communications. The physical disability subscale is made up of 25 questions relating to body care and movement, mobility, and ambulation. The mean score for psychosocial disabilities on the subscale was 27.11 in all NH residents (N = 97) and 18.04 in all AL residents (N = 100) (0 to 100 possible). The mean score on the subscale for physical disabilities was 54.57 in all NH residents and 24.03 for all AL residents.

The Ferrans and Powers Quality of Life Index (QLI) (see Appendix II) is another instrument which has been modified specifically for nursing home use. Originally developed to measure quality of life in cancer patients (Ferrans, 1990), the instrument has been used in over 30 different studies, primarily to measure results of dialysis, oncology treatments and heart surgery, and has been determined to have construct and

convergent validity (Ferrans and Powers, 1992; Oleson, 1990). The instrument uses 32 different questions on four dimensions: health and functioning, socioeconomic, psychological/spiritual, and family. Findings support an internal consistency reliability of the entire QLI (alpha = .93) and the four subscales (alphas = .87, .82, .90, .77 respectively) (Ferrans and Powers, 1992).

The respondent must choose one of six answers: very satisfied, moderately satisfied, or slightly satisfied, slightly dissatisfied, moderately dissatisfied, very dissatisfied. After completing all 32 questions, the interviewer returns to the first question and asks, for example, "How important to you is the health care you are receiving?". There are then the six choices of very, moderately, or slightly important or slightly, moderately, or very unimportant. Responses are scored six through one (very dissatisfied = 1 and very unimportant = 1), then centered to zero (by subtracting 3.5) and multiplied. To eliminate negative values, a constant of 15 is added to every score to produce a final score. The range possible for the overall score is 0 to 30, with 30 being the highest possible score and highest perception of quality of life. The response is then a highly individual score on not only how satisfied a person is, but individually weighted by how important that person feels this area is to his or her life.

In addition, many researchers who have attempted to measure quality of life consider it important that respondents be asked directly to rate their own overall quality of life (Gill & Feinstein, 1994; George & Bearson, 1980). Therefore, subjects were asked to rate their quality of life by answering the question, "How would you describe to me your overall quality of life? You have four choices, very high, high, low, or very low." To make this question more comparable to the QLI, which multiplies the response to a question by the respondent's evaluation of how important that question is, the respondents were then asked to rate the importance of quality of life to them individually, with

four possible choices: very important, important, unimportant, or very unimportant. The responses were rated:

4 for very high, 3 for high, 2 for low, and 1 for very low;

4 for very important, 3 for important, 2 for unimportant, and 1 for very unimportant.

Results were multiplied for a quality of life score with a range of 1 to 16 possible. This variable is named "multiplicative quality of life," with 1 as the lowest possible score and 16 as the highest.

### Data Analysis

All data were proofread for accuracy and a dummy respondent who replied "true" to all questions on the SIP-NH and "very satisfied" and "very important" to all questions on the QLI was entered to assure that the instruments were calculated and scored correctly.

Data analysis included frequencies, matched pair t-tests, regression, and correlations, using SPSS 6.1.1 on a Macintosh Power PC. A matched-pair data set was created by assigning each case to a pair number and then naming two sets of matched variables for each case in assisted living and nursing homes, respectively—i.e., age and age2 were two separate variables for individuals in either a nursing home or in assisted living.

In summary, 43 matched pairs, one subject in a nursing home and one subject in an assisted living facility, were created (from a pool of 10 individuals in each of 20 sites overall, for a total of 200 subjects). Scores of respondents in the pairs, matched on the level of functional ability as measured by the SIP-NH, were compared on the Ferrans and Powers QLI, and the single-item quality of life questions. Data on length of stay, demographic characteristics, and costs were also collected.

## CHAPTER IV: FINDINGS

### Overview

Of the 97 nursing home and 100 assisted living residents who were evaluated using the SIP-NH, 43 matched pairs were formed. Differences in quality of life scores on the QLI and single-item questions for individuals in the two types of environments were not statistically significant. Costs, however, were significantly different ( $p < .001$ ). Residents of nursing homes, with similar perceptions of the quality of life and similar levels of functional ability, paid average monthly costs that were more than twice as much as the costs of residents of assisted living (\$3649 for nursing homes and \$1697 for assisted living facilities).

### SIP-NH Results

The SIP-NH was administered to 100 nursing home (NH) residents and 100 assisted living (AL) residents. Three NH residents were later omitted from the final data, because upon closer examination they did not meet the study criteria (i.e. age 65 or older, absence of guardianship, and residency of three months or more in the study site).

One hundred points are possible in the SIP-NH, 0 being the lowest score, indicating absolutely no disability; conversely, the higher the score, the greater the level of disability. The mean score for all nursing home residents interviewed was 41.73, and the mean score for all assisted living residents was 22.82, almost 19 points lower (see Figure 2 and Table 2). The average SIP-NH score in another recent study of nursing home residents was 40.4 (N=231) (Gerety et al., 1994), similar to the current sample. The average resident of a nursing home is likely to be more disabled than the average resident of an assisted living facility. But it is the pairs matched by the SIP-NH, not the total subjects, who are of greatest interest to this study.

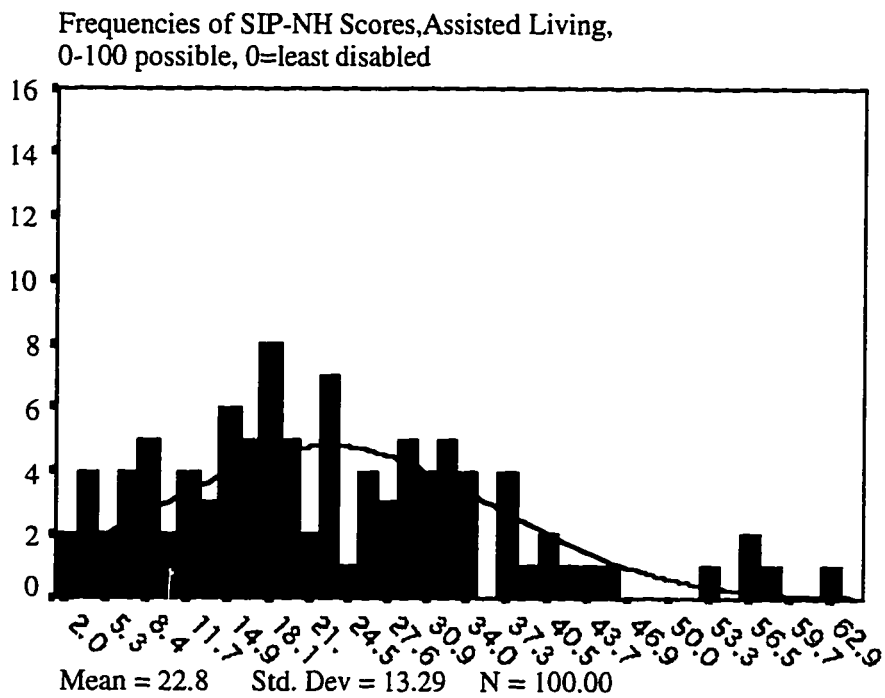
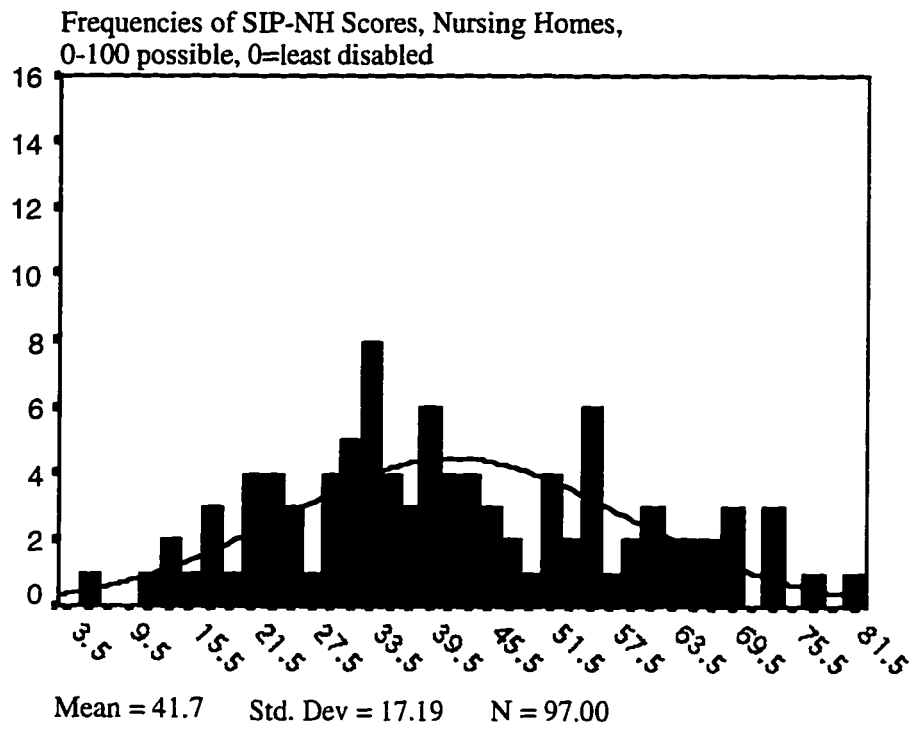


FIGURE 2: SIP-NH RESULTS, All subjects (unmatched)

**TABLE 2**  
**SIP-NH Results**  
*All subjects (unmatched)*

### **Nursing Homes**

N = 97

Variable	Mean	Std Dev	Minimum	Maximum
SIPNH (overall)	41.73	17.19	5.54	81.38
SIPNHPSY (psychosocial)	27.11	20.05	.00	70.95
SIPNHDP (physical)	54.57	21.92	7.21	97.44

### **Assisted Living**

N = 100

Variable	Mean	Std Dev	Minimum	Maximum
SIPNH (overall)	22.82	13.29	1.75	63.27
SIPNHPSY (psychosocial)	18.04	15.05	.00	61.03
SIPNHDP (physical)	24.03	16.15	.00	76.10

### *Matching*

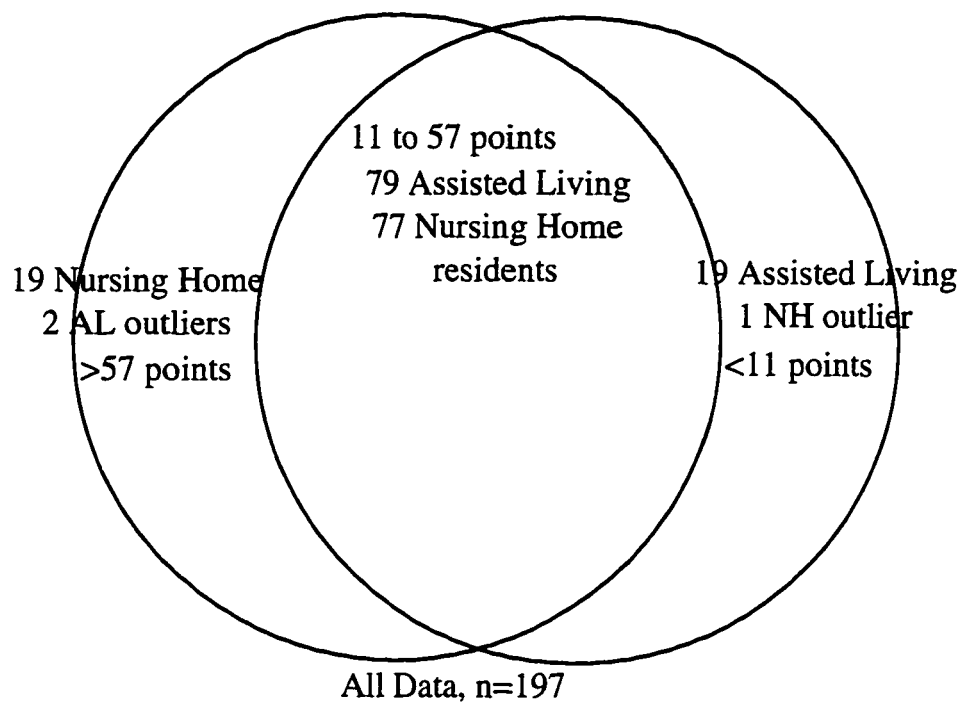
The highest overall SIP-NH scores (> 57) were the scores of 19 NH residents and 2 AL residents, and there were no scores within the matching range of 2 points which also had quality of life scores (see Figure 3). The lowest overall SIP-NH scores (< 11) were 19 AL residents and one NH resident. There were no potentially matching scores in those with a SIP-NH of less than 11 points. Therefore, the possible matching range was between 11 to 57 points. Within that range were 79 assisted living residents and 77 nursing home residents. Since as close a match as possible was desired, only overall SIP-NH scores that were within 1 to 2 points of each other were considered as a match for pairs consisting of one nursing home resident and one assisted living resident. When a potential pair was within the two-point range of overall score, the psychosocial subscore was also considered, because it was

desirable to match pairs as closely as possible. Therefore, with more than one potential match on the overall score, the closest possible match on the psychosocial subscore was used to determine which subjects were included in the matched pairs. This process resulted in 43 matched pairs.

The mean SIP-NH overall score for matched NH residents was 29.44, with a standard deviation of 9.73 (see Table 3). The range for NH residents was 12.07 to 55.15. The mean SIP-NH score for matched AL residents was 29.38 with a standard deviation of 9.88. The range for AL residents was 11.25 to 56.02. Because the SIP-NH is considered a sensitive instrument (Rothman, Hedrick & Inui, 1989), these matched overall scores are indeed fairly close and the difference between them is not statistically significant ( $t = .57$ ,  $p = .575$ ,  $df = 42$ ).

The mean score for psychosocial disabilities was 13.10 in matched NH residents and 18.04 in AL residents ( $t = 5.53$ ,  $p < .05$ ,  $df = 42$ ). Table 3 shows the overall SIP-NH scores, as well as the scores on the physical and psychosocial subscales. It also shows how these scores compared in matched pair t-tests, where the differences were significantly different for both subscales ( $p < .001$ ). The mean score for physical disabilities was 43.99 in NH residents and 31.74 in assisted living residents ( $t = 6.75$ ;  $p < .05$ ,  $df = 42$ ). Therefore, the AL residents in the matched pairs have, on the average, a higher psychosocial disability score by about 5 points, and a lower physical disability score by about 12 points, even though the overall score may be very closely matched.

Because the weighted questions on the SIP-NH score were between 12.1 to 3.5 points each, this difference could have resulted from answering one or two questions out of 66 differently. The overall SIP-NH is calculated by dividing the total scores of all answers by the possible total of 514.6 and then multiplying by 100.



**SIP-NH Scores (0 to 100 points possible)**

The circle on the left illustrates all nursing home (NH) respondents (n=97); the circle on the right illustrates all assisted living (AL) respondents (n=100). The overlapping area shows all respondents' scores which fall within the potential matching range on level of functional ability.

FIGURE 3  
SIP-NH Scores

**TABLE 3**  
**SIP-NH Results of Matched Pairs (N = 43)**

Nursing Homes

	Mean	Std Dev	Minimum	Maximum	N
SIPNH (overall)	29.44	9.73	12.07	55.15	43
SIPNHPSY (psychosocial)	13.10	10.69	.00	42.45	43
SIPNHDP (physical)	43.99	16.86	12.55	79.22	43

Assisted Living

	Mean	Std Dev	Minimum	Maximum	N
SIPNH (overall)	29.38	9.88	11.25	56.02	43
SIPNHPSY (psychosocial)	21.90	12.58	.00	54.98	43
SIPNHDP (physical)	31.74	15.24	4.00	76.10	43

Matched Pair t-tests for SIP-NH Physical Disability Subscale

	Corr	2-tail sig	Mean	SD	SE of mean
<u>Physical Disability</u>					
Nursing Hm			43.99	16.86	2.57
	.729	.000			
Assisted Lv			31.74	15.24	2.32
Paired Differences			12.25	11.90	1.82

t = 6.75, 42 df, p < .05, 95% CI (8.58, 15.91)

Matched Pair t-tests for SIP-NH Psychosocial Disability Subscale

	Corr	2-tail sig	Mean	SD	SE of mean
<u>Psychosoc Disability</u>					
Nursing Hm			13.10	10.69	1.63
	.609	.000			
Assisted Lv			21.90	12.58	1.91
Paired Difference			8.80	10.43	1.59

t = 5.53, 42 df, p < .05, 95% CI (5.59, 12.01)

### Quality of Life

Matched pair t-tests compared the mean scores for matched pairs on the QLI, the single quality of life question, and the multiplicative quality of life question (single-item x importance) (see Table 4). The mean QLI scores in the matched pairs (n=43) in the nursing homes was 20.19 with a standard deviation of 4.61. The mean QLI scores in the matched pairs in assisted living was 19.99 with a standard deviation of 3.89. A matched pair t-test on these data found that the difference between these two scores was not significant ( $t = .27$ ).

The mean response to the overall quality of life question in matched pair nursing home residents was 2.77 (very high = 4; very low = 1); the mean in matched pairs in assisted living was 2.81. In the matched pairs in nursing homes the multiplicative quality of life x importance score was 9.26 (16 = highest possible score). In assisted living the multiplicative quality of life score was also 9.26. Not surprisingly, matched pair t-tests on the single overall question and on that question multiplied by individual importance (hereafter designated as the variable "multiplicative") were also not significant ( $t = .00$ ). The nonparametric equivalent of matched pair t-tests, the Wilcoxon matched-pairs signed-ranks test, also produced non-significant results ( $z = -.068$ , 2-tailed  $p = .946$ ).

TABLE 4  
T-tests for Paired Samples

Mean scores on OLI, 43 matched pairs, 0 to 30 possible

	Corr	2-tail sig	Mean	SD	SE of mean
Nursing Hm			20.19	4.61	.70
	.346	.023			
Assisted Lv			19.99	3.90	.59
Paired Differences		.785	.205	4.90	.75

t = .27, 42 df, p > .05, not significant, 95% CI (-1.30, 1.71)

The positive correlation (.346) indicates the pairing has been effective in decreasing the variability of the mean difference.

Mean scores on single-item quality of life question, 1 to 4 possible

	Corr	2-tail sig	Mean	SD	SE of mean
Nursing Hm			2.77	.87	.132
	.254	.101			
Assisted Lv			2.81	.88	.134
Paired Difference		.777	-.05	1.07	.163

t = -.29, 42 df, p > .05, not significant

95% CI (-.38, .28)

Mean scores on multiplicative quality of life question, 1 to 16 possible

	Corr	2-tail sig	Mean	SD	SE of Mean
Nursing Hm			9.26	3.97	.606
	.221	.154			
Assisted Lv			9.26	4.07	.621
Paired Difference		1.00	.00	5.02	.765

t = .00, 42 df, p > .05, not significant

95% CI (-.38, .28)

Therefore, the first hypothesis, that residents of assisted living perceive their quality of life to be higher than that of nursing home residents, is not supported by these results. This study endeavored to measure perceived quality of life with three instruments: 1) the Ferrans and Powers instrument (QLI); 2) the single question "How would you describe to me the overall quality of your life?"; 3) and the multiplicative question (importance x the response to the previous question). All three instruments indicate that perceptions of quality of life in the two groups do not differ. Pairs of persons in nursing homes and assisted living, matched on their SIP-NH scores, perceive the quality of their lives to be similar.

Because of the nature of the research design and implementation plan, the same quality of life measures were also administered to respondents who were not matched. Because it was surprising to find that the quality of life scores are so similar in nursing homes and assisted living facilities in the matched pairs, the additional quality of life scores in unmatched subjects were also examined. Since 43 pairs is a relatively small sample, possibly a larger group of subjects might change the result. All subjects in nursing homes, whether or not in matched pairs, to whom the QLI was administered, (n=52) scored a mean of 19.84. The mean of all assisted living residents (n=51) was 19.50 and again the differences are not statistically significant (see Figure 4 and Table 5). Figure 4 illustrates that not only are the means similar, the distribution of scores is also similar. A recent study of hemodialysis patients (N = 349) found a mean QLI score of 20.66, an indication that these scores are within normal parameters (Ferrans & Powers, 1992).

In all subjects, the mean for the single quality of life question in nursing home residents was still 2.77 (n=52), and was 2.72 for assisted living residents (n=54). The difference was not statistically significant.

In all subjects in nursing homes who completed the multiplicative quality of life question (n=53), the score was 9.32; in all subjects in assisted living (n=54) it was 8.89. As in the matched pairs, these results are also similar and not statistically different ( $p = .789$ ).

TABLE 5  
Mean Quality of Life Scores

	Matched Pairs (all n=43)		All Subjects	
	NH	AL	NH	AL
QLI (0-30)	20.19 (sd=4.61)	19.99 (sd=3.89)	19.84 (n=52)	19.50 (n=51)
Overall (1 to 4)	2.77 (sd=.87)	2.81 (sd=.88)	2.77 (n=52)	2.72 (n=54)
QL * Imp Multiplicative (1 to 16)	9.26 (sd=3.97) difference not sig.	9.26 (sd=4.07)	9.32 (n=52) difference not sig.	8.89 (n=54)

Regression analysis on the QLI scores was performed to control for age and gender in the 86 individuals in matched pairs, to determine if this changed the significance of the facility type (NH or AL) variable. After controlling for age, the differences still were not significant in the QLI scores between nursing homes and assisted living (facility type regression coefficient =  $-.94$ , SE =  $.81$ ,  $p = .25$ ). Similar results were obtained when controlling for gender (regression coefficient =  $-.23$ , SE =  $.86$ ,  $p = .79$ ). Likewise, controlling for length of stay (which was similar in both groups) did not produce significant differences in the QLI (regression coefficient =  $-.04$ , SE =  $.46$ ,  $p = .93$ ).

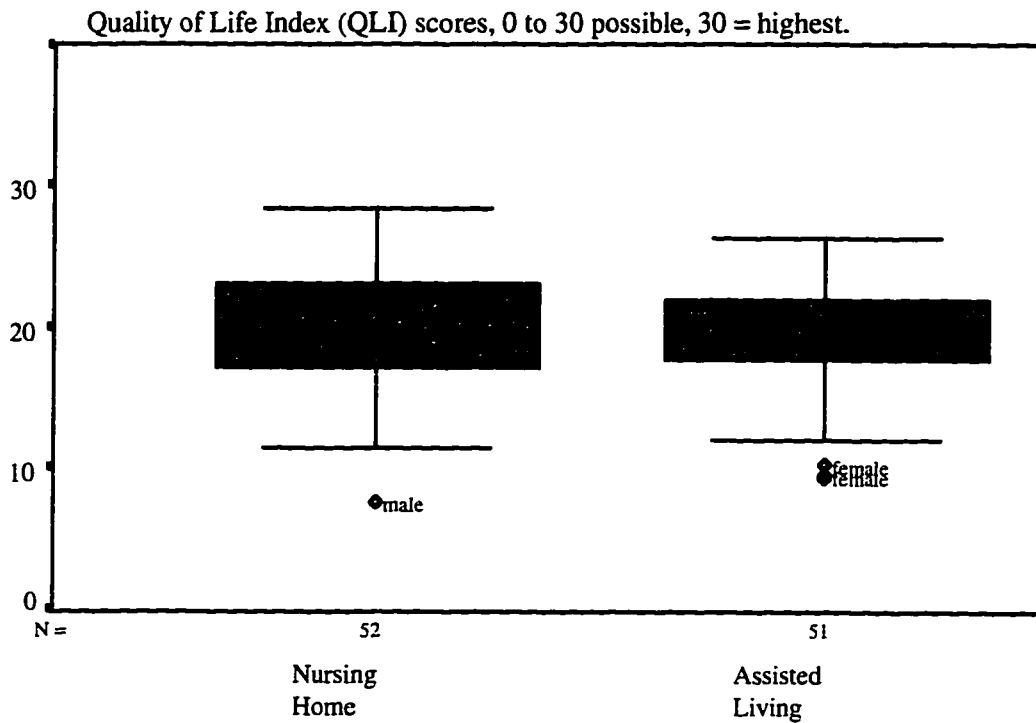


FIGURE 4  
QLI, ALL SUBJECTS

This boxplot of the QLI scores for all subjects illustrates that not only are the means similar, but the distributions of scores in nursing homes and assisted living facilities are similar. The one male and two females indicated are outliers.

*Correlations and Regression Analyses*

Several statistical analyses of correlations were performed to explore what linear relationships might exist between some of the different variables and instruments.

The 64-question QLI instrument correlated with the multiplicative quality of life question (.52) for the matched pairs. Length of stay did not correlate with the QLI scores (-.09,  $p = .351$ ).

Researchers have noted that there is a relationship between quality of life and health, and an important relationship between psychosocial health and perceptions of well-being (Gerety et al., 1994). Therefore, several correlations were performed to examine the strength of potential relationships, as well as partial correlations to control for certain variables.

TABLE 6  
Selected Correlations and Partial Correlations

		Correlation	Significance
Respondents in Pairs N = 86	QLI & SIP-NH	-.47	$p < .05$
Controlling for Psychosocial Disability	QLI & SIP-NH	-.32	$p < .05$
All Data N=103	QLI & SIP-NH	-.44	$p < .05$
Controlling for Psychosocial Disability	QLI & SIP-NH	-.30	$p < .05$
All Data N=103	QLI & Physical Disability	-.32	$p < .05$

There is a negative correlation between QLI scores and the SIP-NH. As level of disability increases, perception of quality of

life decreases, both in individuals in pairs and all data, and even when controlling for level of psychosocial disability. There is also a negative relationship between QLI scores and level of physical disability.

Using regression analysis to control for psychosocial disability in the matched pairs, it was found that the psychosocial subscore on the SIP-NH is related to the QLI scores (regression coefficient =  $-.03$ , SE =  $.02$ ,  $p < .0001$ ). However, if the total SIP-NH score is controlled for, the psychosocial subscore is no longer significantly related to the quality of life score (regression coefficient  $-.03$ , SE  $.02$ ,  $p = .23$ ).

In summary, there is a relationship between scores of level of disability and quality of life; the higher the level of disability, the lower the perception of quality of life. If level of psychosocial disability is controlled for, then the perception of quality of life is still related to overall level of disability. However, if the total SIP-NH score is controlled for in the matched pairs, there is no longer a relationship with psychosocial disability score to the QLI. If the effect of overall disability is removed from the QLI scores, level of psychosocial disability no longer predicts QLI.

There was no correlation between cost and QLI ( $.03$ ,  $p = .812$ ).

### Cost

Cost is the second major variable of interest for this study. In the matched pairs, the average cost per month for nursing home residents was \$3649; for assisted living residents the average cost per month was \$1696. These cost figures are significantly different ( $t = 12.24$ , 42 df,  $p < .001$ ). This supports the second hypothesis of this study, that matched individuals in nursing homes pay a higher monthly cost than those in assisted living.

In summary, it was possible to match closely (within 2 out of 100 points) on the SIP-NH scale of functional ability almost half (44 percent) of individuals interviewed in selected nursing homes and assisted living facilities. With the resulting 43 matched pairs, quality of life scores on three different measures were not significantly different. The first hypothesis, that quality of life would be higher in assisted living, is not supported. Differences in costs, however, for the pairs of comparable individuals were statistically significant—monthly costs were more than twice as much for those in nursing homes than for those in assisted living facilities. The second hypothesis, that costs would be higher for individuals in nursing homes, is supported.

## CHAPTER V: DISCUSSION

This section will discuss the major findings of this research:

1) the quality of life scores in the two types of long-term care are similar, both in the matched pairs and in the total respondents; 2) the difference in matched individuals' monthly costs is statistically significant; and 3) there is considerable overlap of functional ability in nursing home and assisted living residents. This discussion includes the ramifications of these findings and their potential meaning for long-term care, the relationship of the findings to the model of P-E fit, and some potential methodological limitations of this study.

One hypothesis of this study was that in pairs matched by functional ability, individuals in assisted living would perceive the quality of their lives to be higher than individuals in nursing homes. The literature on assisted living and nursing homes, aging advocates' support of living arrangements to promote independence, and anecdotal evidence gathered by the author from providers and residents in the two different settings suggested an expectation that perceptions of quality of life would be higher in the residents of assisted living facilities. However, quality of life was not found to be statistically higher in assisted living residents than in the nursing home residents.

These results illustrate the importance of testing assumptions. For the reasons just listed, advocates for older people, family members and older people themselves typically assume that residents in assisted living perceive a higher quality of life than residents in nursing homes. This study suggests that this may not be true. Studies which produce findings that are contrary to widely held expectations can have major implications for policy, practice and future research. It is useful to prove true what was thought to be true. It is even more useful to find the opposite, because this can make a greater difference in subsequent policy decisions and outcomes.

It is hoped that this study of long-term care will stimulate consumers, providers, and policy makers to examine carefully the choices they make and the assumptions which shape their decisions. It is also hoped that this study will not be misconstrued. Although some residents of comparable ability in both long-term care settings perceived the quality of their lives as similar at less cost does not mean that nursing homes will become unnecessary in the future. On the contrary, there will always be a long-term care population which needs the support of a nursing home. As discussed above, the comparable individuals in nursing homes and assisted living are not interchangeable. There are more factors at work in providing the optimum setting for an individual's long-term care than cost alone.

This study on assisted living and nursing home residents also suggests other assumptions about living arrangements which might be tested, such as assessing the importance of choice, control, and personality on perceptions of quality of life in long-term care. Although these and other variables are often considered important, few have been extensively tested (Rodin, 1986). The results that we do have from this study on assisted living and nursing homes, and the research of others, should be scrutinized carefully.

For example, the cost results of this study must be viewed with caution. Although the nursing home residents were paying more than the comparable assisted living residents who were matched on the overall SIP-NH, there was a significant difference in physical disability on the subscores. Since the nursing home residents were the more physically disabled, it is logical that their costs would be greater. Although it is difficult to predict how much costs would increase if the subscores were more closely matched, the costs of assisted living and nursing home residents might be more similar if they were more closely matched on the physical disability subscore. Assisted living may also become relatively more expensive in the future, as individuals age in

place, therefore requiring more care, and regulations increase. It may only be the less costly option at this point in time.

Does this mean that assisted living, a promising type of long-term care option, does not meet the expectations of the public and professionals in the field of long-term care? Rather, it suggests that policy makers and providers must view new options cautiously, establish them systematically over a period of time, and implement changes in the long-term care system carefully. These findings do imply that quality of life may be enhanced and costs might be minimized in both assisted living and nursing home settings in terms of issues of staffing, philosophy of care, and the extent of the individuals' fit. In other words, the actual setting of nursing home and assisted living may be less important than a systematic assessment and consideration of variables such as personality, degree of control preferred, choice and other factors to be discussed in the modified model of P-E fit.

The result that similar people in dissimilar settings found their quality of lives to be comparable also may be a tribute to the indomitable flexibility of the human spirit and the impressive ability of some individuals to make the best of a situation. Some of the most severely disabled individuals—people in pain, people with severe disabilities—expressed satisfaction with their situation in both settings. This researcher was moved by the tolerance, flexibility, and willingness to make the best of things manifested by the respondents in a wide variety of difficult situations.

It would be dangerous to take this observation of residents' abilities to adjust to the environment to its logical extreme, however. The possibility that people can adapt in a wide range of situations does not mean that it does not matter what the situation is. It matters a great deal. If someone perceives a decent quality of life in what appears to be a difficult situation, then the quality of life may be that much higher in a more congruent situation. However, the highly individual factors that make a situation more congruent are challenging to determine.

An elaboration of the concept of congruence may be helpful in determining other factors that can enhance the quality of life in both assisted living and nursing home residents.

### Congruence

One explanation for the similarity of quality of life scores between matched pairs of residents in nursing homes and assisted living facilities is the concept of congruence and P-E fit. However, the original P-E fit framework, as illustrated in Figure 1, may be incomplete for this study. The model, as originally presented, may be an oversimplification which fails to take into account several other factors such as control, personality, and culture that may influence perceptions of quality of life. The inability of the original model to take account these factors may underlie the similarity of the quality of life scores. When these additional factors are added to the model, its utility for understanding this study's findings is enhanced.

Within the context of P-E fit for long-term care, functional status, age, and length of stay are forces (vectors) pushing toward increased congruence. Because the forces of functional ability, age and length of stay are similar in this study (due to the matched pairs) and because congruence (as indicated by scores on the quality of life measures) is similar, then it would seem that the nursing home and assisted living environments are identical. However, they clearly are not. No one entering any of the nursing homes in this study would mistake it for any other type of environment. Nor would anyone walking into one of the assisted living facilities in this study mistake it for a nursing home. As noted in the chapter on longer-term care, there are numerous physical, regulatory, and social differences between these two environments. Other vectors or forces may be at work. Although the findings are not supported by the initial P-E fit model, a modified P-E fit model provides a more useful framework for discussing these results.

### **Modified Model of P-E Fit**

Based upon this study, the author has proposed a modified version of the P-E fit model, see Figure 6. Additional forces on the person, "P," as identified in the model, are the vectors of:

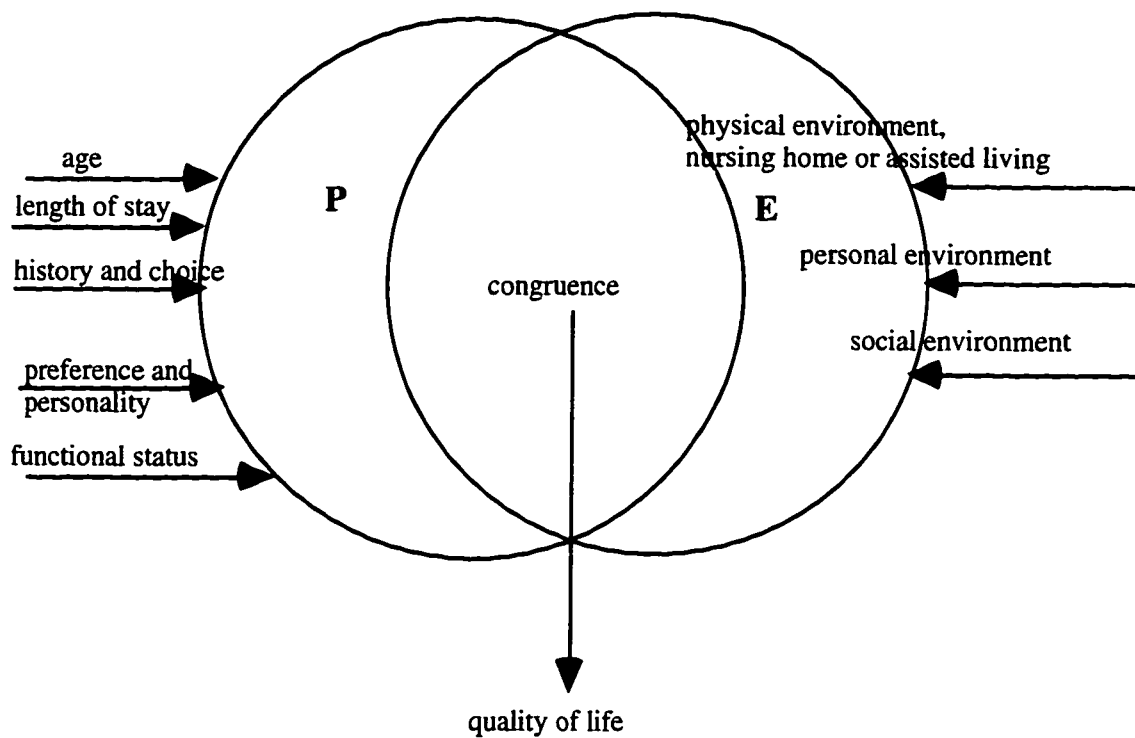
- 1) history and choice, and
- 2) preference and personality.

In addition to type of physical environment, nursing home or assisted living, as forces on the environment, "E," the vectors of:

- 1) personal environment, and
- 2) social environment are added.

Each of these forces is discussed below.

Additional vectors, such as history and choice, preference and personality, as well as personal and social environment, may influence congruence of person-in-environment fit.



**FIGURE 5**  
**Modified P-E Fit in Long-term Care**

### *History and Choice*

Four questions which would have particularly been useful for understanding the findings of this study are: 1) where did you live before you moved here; 2) for how long; 3) why did you move here; and 4) who decided? These answers could be coded and quantified, for example, a greater weight could be attached to the response, "I moved from my own home, where I lived for X number of years;" and "I decided to move here myself;" than answers such as "I lived with my daughter;" or "My children decided on this facility."

The reasons for the move and a person's recent history may affect how the environment is perceived. Anecdotal evidence volunteered by respondents in assisted living facilities suggested that they were more likely than nursing home residents still to be in a period of transition or dealing with recent losses, which may have influenced the quality of life scores. Assisted living residents more often mentioned moving from a family home, losing a spouse within the past year, or more recently acquiring a physical disability than nursing home residents. Measurement of these variables by asking respondents reasons for the move could contribute to the force of the "history and choice" vector.

Other aspects of a person's history and past lifestyle could be an important component in congruence. For example, one respondent living in a nursing home seemed to perceive the quality of his life as quite high, even though this person was not particularly disabled, and thus would seem to be in an incongruent environment. He had, however, spent much of his life in the military. He was accustomed to the regimentation and lack of privacy, and possibly even found it comforting.

The importance of choice also appeared to be a factor influencing congruence. The most dissatisfied residents of either type of facility appeared to be those who had not selected the facility themselves; this information was often provided by the respondents, even though it was unsolicited.

### *Length of Stay*

The average length of stay in NH residents of the matched pairs was 1.52 years, and 1.45 years in AL. Length of stay may be another vector that influences QLI, single-item, and multiplicative quality of life scores in both types of sites. As described earlier, individuals' perceptions of quality of life adjust over the long term. For example, Inglehart and Rabier found that people adjusted their assessment of their quality of life upward over time in a stable situation (1986). The respondents of this study were in both types of sites for similar amounts of time. All respondents were in their setting for at least 3 months, and many for as long as 3 years or more (10 in nursing homes and 11 in assisted living facilities). The respondents may have adjusted to the nursing home or to assisted living, depending on where they were living, which could help account for the similarity of the quality of life scores. However, there was no correlation between length of stay and quality of life; the QLI scores did not increase for respondents who had been in their sites longer ( $-.09, p = .351$ ).

### *Personality and Preference*

An instrument that measures personality characteristics would also contribute to understanding reasons for congruence and forces that enhance higher perceptions of quality of life. For example an instrument which gives scores on the level of introversion/extroversion might be useful. Some persons who are more extroverted seem to prefer the lively atmosphere of the "busy street" of a nursing home corridor, and others may prefer the quiet and seclusion of a private room in assisted living. Some individuals are comfortable with regimented meals and sleeping times; others regard spontaneity and flexibility as important. Correlations between these personality characteristics and perceived quality of life in nursing homes and assisted living facilities could be factors in predicting congruence.

An interpretation of the P-E fit concept is that many people are most likely to seek and be found in environments which are the most congruent for them as individuals (Kahana, Liang & Felton, 1980). If a person's personality causes them to be unduly disturbed at the clamor of the nursing home or the relative quiet sometimes found in assisted living, he or she may choose the setting more appropriate to these preferences. A person's preference for independence or dependence may influence their choice. If not given the choice, unable to make a choice, or unduly influenced to move, in the three months or more prior to participating in this study, such people will have made modifications. Some will have moved to a more congruent setting. Some people will have grown more accustomed to the ambiance. Some people will have modified their room to be more to their liking, or made other alterations to enhance their feelings of choice and independence.

Individuals vary in the amount of control over their lives they prefer and to which they are accustomed. An instrument that measures need for control may also help assess factors that affect the degree of congruence. Some analysts suggest that assisted living is a type of environment that fosters more personal control than nursing homes (Regnier, 1995). On the other hand, some nursing homes attempt to provide some degree of choice to residents. Adding this vector of personality and preference, and measuring qualities that contribute to them, could help maximize a good P-E fit.

### *Age*

Age may be a factor influencing fit. Although it was discussed earlier that age in general may not be related to perceptions of quality of life, it may be that the "oldest old" have greater congruence in one environment than the other. It is possible that the higher mean age of 85.8 years in assisted living compared to 81.5 years in the nursing homes is due to the greater

number of "oldest old" found in these ten assisted living sites. There was one centenarian in a nursing home, and one person of age 99, 98 and 97, respectively, in assisted living. The median age in nursing home respondents was 80 years and the median age in assisted living was 84 years. These differences are significant ( $p < .05$ ). However, controlling for age on the QLI scores did not produce a different result. Therefore, the age differences in the two groups probably have not confounded the findings on quality of life.

One reason for this age difference is the possibility of "selective survival" and good health of those over 90 (Perls, 1995; Fries, 1980; Manton, 1993). People who live to be 90 years of age and over may be more resistant to the disorders and disabilities which kill those who are younger. Therefore this group of oldest old is less likely to be severely disabled and perhaps more likely to be found in assisted living rather than a nursing home.

#### Vectors on the "E" Side

In addition to whether the physical environment was categorized as nursing home or assisted living, other forces on the environment may be at work. Two other vectors that may influence "E" and push toward congruence are 1) the personal environment of the individual, such as family, friends, and relationships with staff, and 2) the social environment, such as cultural norms, the organizational culture of the facility, and the ethnicity of the individual.

#### *Personal Environment*

Personal environment is the most immediate circle of family and friends, and sometimes staff, with whom an individual is in contact. It is possible that individuals who have more family and friends and more positive informal relationships with staff, regardless of type of setting, may perceive the quality of their lives as higher. Geographic proximity to family and friends may

also be a factor, irrespective of whether the facility is assisted living or a nursing home. Being close to the people most important in one's life, or being in the same neighborhood that one is accustomed to and has acquaintances, could be important factors in congruence. These aspects of "personal environment" would be useful to quantify to attempt to determine their influence on congruence.

### *Social Environment*

According to Lawton (1983), the social environment is made up of people outside of one's immediate circle of family and friends, but still inside the circle of one's daily life. Social environment is the societal attitudes, cultural norms, staffing practices, and in some cases ethnic identity of the individual's environment. Finding a long-term care setting that is compatible with one's cultural and social norms is another factor that can enhance P-E fit. For example, On Lok in San Francisco is a well-known type of long-term care option that emphasizes language, cuisine, and values that are congruent with the Asian-American community there. On Lok is often held up as an example of a culturally-sensitive and successful long-term care option (O'Malley & Brooks, 1990).

Another aspect of social environment is that many people in the U.S. do not consider nursing homes a desirable alternative and hold negative perceptions that can affect how residents perceive their quality of life. However, these societal attitudes may be based on adverse publicity from the 60s and 70s, isolated incidents of poor care, or lack of information, rather than empirical evidence. If perceptions of nursing homes were more positive in our culture, residents might perceive the quality of their lives to be even higher than what was found in this study.

The possibility that people tend to see their own lives as better than most others' lives also may be a factor exerting force towards congruence on the "E" side via the "social environment"

vector. It may be a cultural norm, or social environmental force or "vector," to perceive one's life as somewhat better than average (Andrews & Withey, 1976). Both assisted living and nursing home quality of life scores fall into a similar bell-shaped curve, with few scores in the very high and very low range. The Quality of Life Index (QLI) asks 32 questions about satisfaction with components of peoples' lives, then asks the individuals to rate their importance. Scores range from a possible low score of 0 to a high of 30, so 15 would be the exact mid-range response. Scores averaged 19.8 in nursing homes and 19.5 in assisted living. If averaging somewhat above mid-point is a social/cultural phenomenon, it would be a force pushing the social environment vector toward increased P-E fit in the congruence model.

Nursing homes can be very different from each other and assisted living facilities vary even more. In each type of long-term care setting, nursing home and assisted living, the administrative and staff values, priorities, attitudes toward older people, and philosophies of care differ. This could be seen as the "social environment" of the facility, and be another factor influencing congruence. Where staff place a high value on providing residents with choice and control, and enhancing their fit with the environment, quality of life may be higher.

The nature of the research design—that the most disabled persons in assisted living were matched with the least disabled in nursing homes—also relates to this vector of social environment within the P-E fit model. An individual may have greater congruence and perceive a higher quality of life if he or she is the least disabled in one's social environment. The notion of "relative deprivation," for example, suggests that when individuals have a personal advantage, the perception of group disadvantage is diminished (Smith, Spears & Oyen, 1994; Olson, Meen, Roese & Robertson, 1995).

These factors suggest that the vector of social environment may have been stronger for those in the nursing home half of the

matched pairs. The social environment vector may have exerted greater force toward congruence and higher perception of the quality of life for those in nursing homes than those in assisted living, because those in nursing homes were the relatively "best off" in terms of relative deprivation compared to other. The other vectors of physical environment, age, time, personality/preference, etc. may have counterbalanced the social environment force so that the overall effect was a similar perception of quality of life by the residents in the two different settings. Since a feasible way to compare the two environments is by matching on level of disability, this problem is difficult to eliminate, however. The amount of change in perception of quality of life affected by relative deprivation is unknown.

Other mechanisms such as denial and dissonance reduction also, over time, may produce greater congruence, as discussed below.

#### *Adaptation to a Poor P-E Fit*

In addition to the possibility that relative deprivation influences perceptions of quality of life, mechanisms such as denial and dissonance reduction may influence individuals in an environment that is a poor fit still to express perceptions of a relative high quality of life. Nevertheless, a person who has "adapted," and therefore senses that his or her quality of life is higher than others would perceive it, has modified the "P" to enhance fit. The social environment vectors would have to come into play on the "E" side to counterbalance an individual's inappropriate perception of a high quality of life in an incongruent environment. For example, it is not possible for highly functional individuals to reside in a nursing home since regulations preclude this. The regulations are a result of societal values (the social environment vector) that do not condone extreme incongruence between the individual and the environment. Conversely, a highly disabled person in an assisted living situation, who needed

more technical care than was available, would be moved to a nursing home, regardless of personal preference. If, for example, this person had a strong aversion to the nursing home, dissonance reduction might gradually reduce this aversion, and thus enhance P-E fit over time.

Life in a nursing home, perhaps because of its obvious institutional character, may also induce greater denial mechanisms than life in assisted living, which is more homelike and subject to more personal control. In assisted living, people might allow themselves to express more dissatisfaction because of the more private and homey nature of the environment. The public character of nursing homes may instill and evoke more guarded responses.

Therefore, mechanisms which help individuals adapt to a poor P-E fit are also aspects of the modified P-E fit model and can contribute to congruence. These mechanisms and indications of flexibility and ability to adapt in a wide range of circumstances may also contribute to finding a large degree of overlap in the level of functional ability in both types of sites.

#### Other Considerations

These modifications to the P-E fit model have not been tested and still may only partially account for the findings. Individuals are complex, long-term care is complicated, and any model which tries to account for all this variability still are likely to be incomplete. Since a theoretical model is intended to be a way of examining in a simpler manner this complex world, adding and balancing too many vectors might decrease its effectiveness as a model. This study also examined a very specific group of older people, and the model may not be as applicable to a different group, for example, of different ethnicities or geographic locations.

The number of respondents who fell within the same range of SIP-NH scores for potential matching was larger than anticipated (77 out of 97 in NH and 79 out of 100 for AL), but it should be kept in mind that there were more disabled people in nursing homes who were screened out because of court-appointed guardianship, severe dementia, communication disorders, or coma. There were also people in assisted living facilities who declined to be in the study because they were too busy with other activities. Nevertheless, it was easier than expected to find close matches of functional ability in both types of sites. This suggests that assisted living facilities are caring for a more disabled population than is sometimes assumed, with characteristics that warrant further study.

In summary, adding the vectors of history/choice and preference/personality on the "P" side, and personal and social environment on the "E" side strengthen the P-E fit model and help to account for the findings. Selection bias, because of the three nursing home refusals and the nature of the research design, (e.g. matching the most disabled individuals in assisted living with the least disabled individuals in nursing homes) may also account for the assisted living quality of life scores being lower than anticipated. It is suggested, however, that these possibilities may not have affected scores to a large extent.

The notion of P-E fits suggests that even though individuals of comparable functional ability are living in both sites and the perceptions of quality of life are similar, these individuals cannot simply be switched without their quality of life being affected. Through a variety of mechanisms, including relative deprivation and dissonance reduction, residents may have found an environment that appears to be congruent for themselves as individuals. As a result, a move to another setting could heighten feelings of incongruence. But the findings do suggest that

assisted living facilities are caring for a more disabled population than might have been assumed; in addition, this population is perceiving the quality of their lives to be as high as their counterparts in nursing homes.

Nevertheless, this study has a number of methodological limitations which may have affected these findings. It is also useful for understanding these findings to reiterate that specific criteria were used to select respondents to be in matched pairs. Although random selection was used to create the pool of potential participants, those who responded in this study are neither randomly selected, typical, nor representative of all long-term care residents. What follows is discussion of some potential methodological limitations.

#### Possible Methodological Limitations of this Study

##### *Size and Location*

The size of this sample is not large, and it is confined to a specific geographic area. Whether these findings would be duplicated in a larger study in other geographic areas is unknown. Other possible limitations are selection bias in respondents and sites, the nature of the instrumentation, and the difficulties of differentiating and documenting all costs.

##### *Selection Bias in Respondents*

The nature of the research design made selection bias in respondents impossible to avoid, especially in the nursing homes. Nursing home residents were more likely than assisted living residents to be too ill, demented, or under guardianship and therefore more likely to be unable to participate. As a result, persons in the study from nursing homes were less disabled, compared to their cohabitants; therefore they may have felt relatively better off, and thus perceived the quality of their lives

to be higher, perhaps because of the possibility of "relative deprivation," which has been discussed.

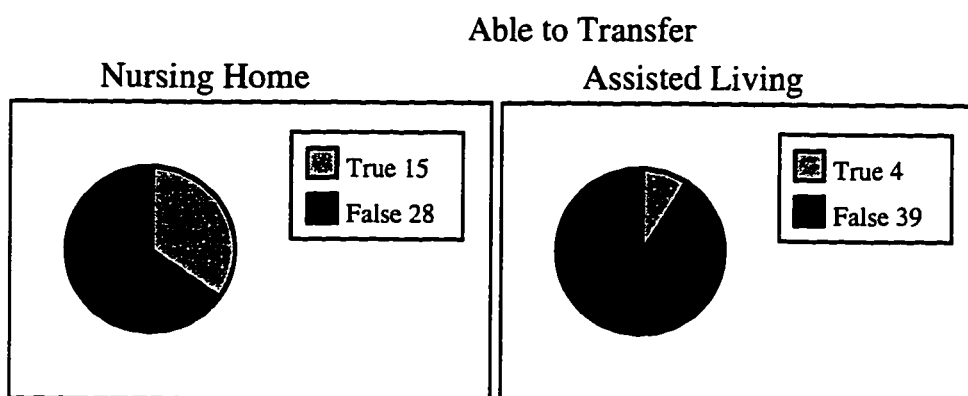
In addition, the nature of matching by SIP-NH scores in such a small group produced close overall matches with differences that were statistically significant on the subscores of physical and psychosocial disability. The matched nursing home residents were slightly more disabled (12 points out of 100) on the physical disability scale. The matched assisted living residents were somewhat more disabled (9 points out of 100) on the psychosocial disability scale.

Although individuals were closely matched (within 2 points out of 100) on the overall SIP-NH score, the higher psychosocial disability scores in the matched pairs could lower the quality of life scores. In this study, the correlation of the psychosocial disability scores and the QLI in individuals in matched pairs was  $-.47$ , and significant with  $p = < .05$ .

Since the SIP-NH is considered a sensitive instrument, these differences may not be large, but they are disturbing and suggest that findings must be interpreted cautiously. The total SIP-NH of all respondents interviewed, matched and unmatched, suggests that as a group, people in general in assisted living have more psychosocial disability than those in nursing homes. The mean in NH ( $N = 97$ ) was 27.11 for psychosocial disability and the mean in assisted living ( $N = 100$ ) was 18.04, nearly 9 points worse (0 to 100 possible). As previously mentioned, there is some correlation of psychosocial scores with physical disability, given that physical and psychosocial functions are often interrelated (Gerety et al., 1994); therefore it would be expected that high physical disability scores would be related to high psychosocial disability scores. As mentioned above, the nature of the matching process, rather than greater psychosocial disability per se in assisted living, accounts for the difference in subscores. However, the higher psychosocial disability scores in assisted living could then account, to some

extent, for the quality of life scores being lower than anticipated in assisted living residents.

Because the average nursing home resident is more physically disabled than the average assisted living resident, the matching process was more likely to select nursing home residents with high physical disability scores compared to the assisted living residents. As a result, assisted living residents who matched on the overall SIP-NH may be more likely to have higher psychosocial disability scores, because the overall scores matched, and they were likely to be less physically disabled. Since the scores are so close, the difference could be in the response to one or two key questions. The question which measures ability to transfer is a good example, see Figure 5 and Table 7. Only 4 of the assisted living residents were unable to transfer compared to 15 nursing home residents. In order to have an overall match in this type of situation, the assisted living residents would need to be higher on the psychosocial disability score. A larger pool of potential matches might preclude this matching problem in future studies.



"I do not move into or out of bed or chair by myself, that is, I am moved by a person or mechanical aid."

FIGURE 6

TABLE 7  
Ability to Transfer

"I do not move into or out of bed or chair by myself, that is, I am moved by a person or mechanical aid."

	<u>Nursing Home</u>	<u>Assisted Living</u>	<u>Row Total</u>
True	15	4	19 (22.1%)
False	28	39	67 (77.9%)
Total	43	43	86 (100%)

A chi-square test was applied to the relationship between type of facility and SIP-16, ability to transfer, and found to be statistically significant,  $\chi^2$  (N = 86) = 26.79,  $p < .05$ .

Using regression analysis to control for psychosocial disability, it was found that the psychosocial subscore on the SIP-NH is related to the QLI scores (regression coefficient = -.03, SE = .02,  $p = < .0001$ ). However, if the total SIP-NH score is controlled for, the psychosocial subscore is no longer significantly related to the quality of life score (regression coefficient -.03, SE .02,  $p = .23$ ).

Therefore, the data suggest that in this study a slightly higher psychosocial disability score may have resulted in slightly lower quality of life scores. A larger study may be able to match residents on overall and psychosocial subscores and produce a more accurate comparison. This may change the quality of life scores somewhat. However, since the difference in psychosocial subscores on the SIP-NH is the result of one or two questions out of 66, and the effect of level of psychosocial disability is no longer

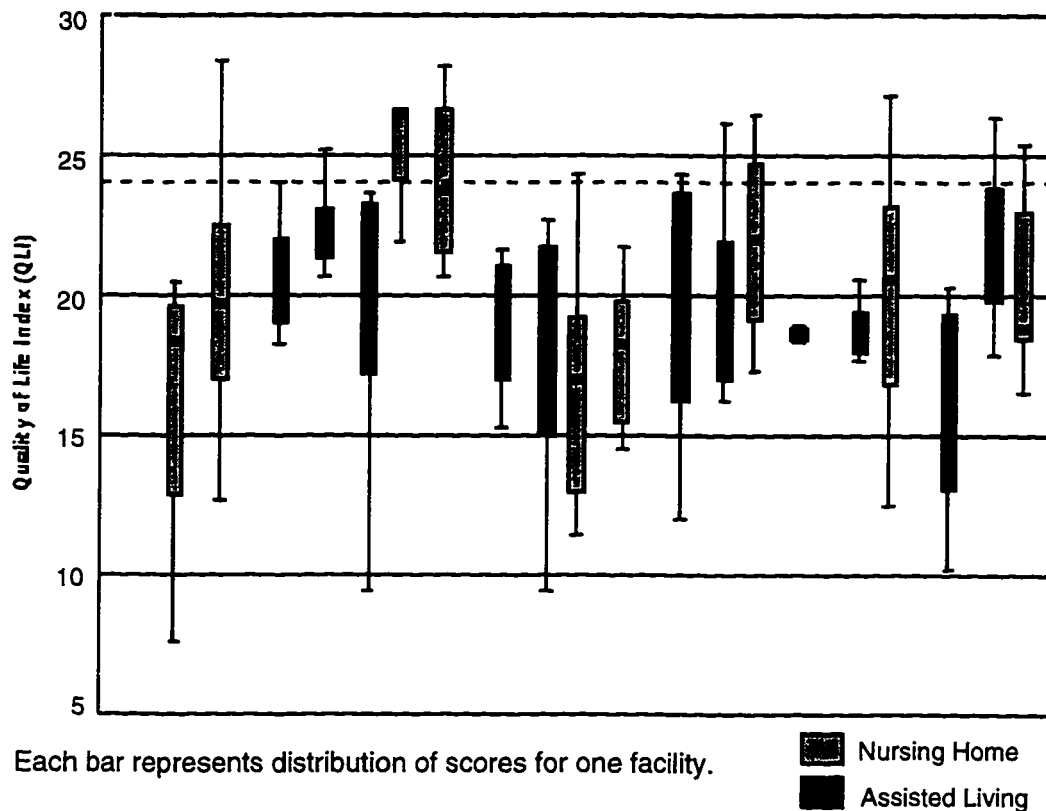
significant when the overall level of disability is controlled for, the difference may be rather small.

### *Selection Bias in Sites*

Selection bias may have occurred in this study because of the three nursing homes which refused to participate. All assisted living sites which were approached consented. It may be that these nursing homes that excluded themselves had reasons for refusal that might have caused respondents to score lower on the quality of life instruments. For example, these nursing homes may have had complaints lodged about standards of care. If the three nursing homes which refused to participate in the study were in violation of standards of care, the possibility exists that the remainder of the nursing homes in the study are better than average; for example, they may have outstanding staff who are particularly caring and are characterized by low turnover. Indeed some anecdotal evidence supports this. Two of the nursing homes, those with particularly high quality of life scores, had a number of staff who had been there more than 20 years, and these two sites have long been considered to be outstanding nursing homes by the community. Turnover in nursing homes is an acknowledged problem and approximately one-half of all nurses' aides and nursing administrator positions turn over within one year (Sherwood, 1991). Although nursing homes in the study appear representative in terms of ownership and percentage of Medicaid-funded residents, they may not be representative of standards of care. Several of the assisted living facilities in the area which are also considered to be outstanding were not included in the random selection.

In crosstabs of the individual facilities by QLI scores of all those who completed the QLI instrument ( $n = 103$ ), the quality of life scores by individual facility were highest for two nursing homes (see Figure 6). Conceivably the three nursing homes which refused participation may have had the three lowest QLI

scores and would have changed the findings of this table. Since the numbers in each site are so small (from 7 to 3 at each site), it is difficult to determine how weak or strong this selection bias may have been.



This boxplot shows the distribution of quality of life scores for each of twenty facilities. Each bar represents one facility. The three facilities with the highest scores, 24 points or higher, are nursing homes.

FIGURE 7  
 QLI by site

In summary, the refusals by three nursing home administrators to participate in the study may have introduced site selection bias. The fact that the QLI scores still cluster about a similar range (as illustrated in Figure 6) suggests that even if this

is the case, it may not be a large influence. Subject selection bias was unavoidable, given the research design, and the possibility of "relative deprivation," to be discussed below, may have affected the perceptions of quality of life in matched respondents so that those in nursing homes expressed a perception of a higher quality of life than might be expected. An examination of potential limitations of the QLI instrument is also warranted.

#### *Instrumentation: QLI*

The Ferrans & Powers quality of life (QLI) instrument is a limitation of this study. Although many quality of life instruments exist, all are thought to have limitations, given the ineffable and highly individual nature of quality of life (Gill & Feinstein, 1994; Pearlman & Uhlmann, 1991). However, the fact that the 64-question instrument correlated with the multiplicative quality of life question ( $r = .52$ ) suggests that the instrument is measuring something that coincides with individuals' perceptions about their quality of life. In addition, an advantage of administering all 102 QLIs personally is the opportunity to witness the thoughtful consideration that respondents give to the questions. Those participating in the interview process gave answers to individual questions which ranged across all six possibilities. It may be hard to imagine how one person could be "very satisfied" with their room and the person across the hall in the same type of room "very dissatisfied," yet such examples were not infrequent, and demonstrate the unique and highly personal aspects of individual perceptions of quality of life. While the QLI may not be measuring perceived quality of life absolutely, it seems to be measuring aspects of life that are closely related to it.

A number of other factors may account for the higher than anticipated quality of life scores in nursing homes. One possibility is that nursing home respondents may not have been totally straightforward in their responses because of the nature of the nursing home setting. It was difficult to obtain total privacy in

the nursing homes, while it was easier to find privacy in assisted living. Therefore, nursing home residents were sometimes aware of the fact that they could (and did) get walked in on abruptly, even with closed and sometimes locked doors. (This also happened once in assisted living.) Nursing home residents may have been more hesitant than assisted living residents to be critical and express negative feelings on the quality of life instrument than assisted living residents for fear of being overheard. More of the respondents in the nursing homes were hard of hearing than those in assisted living. Thus interviews were sometimes louder in nursing homes, perhaps to the extent of being audible (or thought by the respondent to be audible) through walls and closed doors. This could have caused respondents to be less candid.

*Instrumentation: SIP-NH*

The fact that the SIP-NH score and quality of life scores are so similar in matched pairs could mean that they are measuring the same thing. The original "Sickness Impact Profile" (SIP) has been used as a measure of health-related quality of life. Perhaps health as a component to quality of life is particularly important to many older people. Moreover, perception of quality of life may be more closely linked to level of "sickness" than other factors. This could explain why the QLI scores are so similar in the pairs matched on the SIP-NH.

However, most of the questions on each instrument are entirely different. For example, the SIP-NH has quite a few questions about ambulation and dressing; the QLI asks none. The QLI asks about satisfaction with the room, personal appearance, and spiritual life; the SIP-NH asks about none of these. The considerable difference in questions on the two instruments make it unlikely that they are measuring the same attributes.

Level of disability, however, is difficult to measure. Activities of daily living are by no means absolute (Jette, 1996).

Different measures of disability on the same populations produce similar, although not identical, percentages of incidence of disability in a population. For example, Jette found three measures of bed/chair transfers gave population disability percentages of 13.4, 3.0 and 5.5 respectively in three different scaling methods on the same population (n=1818). Since all the respondents in the research for this study were compared on the same instrument, however, the disability scores are as comparable and as accurate as possible.

### *Costs*

Separating out different costs and documenting expenses in both settings is challenging. It was not possible, within time and budgetary restraints, to examine personal checkbooks or family expenditures, although this would be worthwhile in a future study. Nevertheless, cost data in both types of settings were kept as consistent and equitable as possible.

Certain cost inequities between nursing homes and assisted living are possible. Individuals in AL may spend more on discretionary items than residents of nursing homes because they and their neighbors tend to be more able to leave the facility and shop. However, residents in nursing homes may be brought more gifts and necessities from friends, volunteers, and family members, because it is more obvious that they usually cannot shop for themselves.

It would be impractical in this study to document how much financial support in terms of gifts and shopping that assisted living and nursing home residents receive from friends and family members. Yet, by sitting in a room with a respondent, one is struck by the typical display of cards, flowers, and personal possessions. This suggests that friends or family members usually bring items to be used and enjoyed when they visit either type of facility. It is not known if there is a significant difference in the items provided by friends and family to residents in either

setting. In addition, those without family and friends must often "do without" such personal items, regardless of whether or not the resident has the money to spend.

Some other "incidental" costs are exceedingly difficult to disentangle. While the more costly of the assisted living facilities tended to cover more incidentals, such as paper products, residents in these sites also tended to spend a larger amount of their own money on other expenses, such as reading materials and toiletries. Other costs, such as phone and cable TV, were often specified quite clearly in the facility's literature or contract and could be included in this study. Information about such costs was gathered as much as possible in the interviews.

Cable TV, phones, microwave ovens, and small refrigerators were less present in NH, which suggests that less was being spent for them. If these amenities had been more easily accessible, costs for them might have been higher in NH, because more people would have the opportunity to desire and pay for them. There is a difference between being asked if a phone, TV, or refrigerator should remain in one's room, or making the effort to request such an item because the room is without it. This is often the difference between being in assisted living and being in a nursing home. In many nursing homes such amenities can be supplementary items; in assisted living they are usually included, although typically there is the option of saying "no, thanks" to phones, cable TV and the like.

Another consideration is that while cost is usually an inherent difference between the two settings, there is still enough variability so that the most inexpensive nursing home could be less costly than the most expensive assisted living facility. In this study, the individual in the most expensive assisted living site paid \$2560 per month. The cost of the person in the least expensive nursing home was \$2786 per month. The individuals in these two sites scored 20.46 and 19.92 on the SIP-NH respectively.

The most apparent reason that average monthly costs in nursing homes are more than twice the average monthly costs in assisted living for comparable individuals is staff salaries and wages. Nursing homes have a much higher staff-to-resident ratio and staff are usually more highly paid professionals, such as RNs. Nursing home staff, in addition, must adhere to, monitor, and record compliance with more regulations, which also adds to nursing home costs (Regnier, Hamilton & Yatabe, 1991).

Many of these limitations could be minimized in a larger study in a diverse geographic area. Better matching might be obtained, and more complete cost data could be collected. It is possible, however, that the findings from such a study may still be similar to those reported here.

## CHAPTER VI: CONCLUSION

This conclusion will discuss some implications for future research, public policy, teaching, and practice.

### Implications for Future Research

The methodological limitations discussed in Chapter V suggest some directions for future research. A similar study, but conducted with a larger sample from a more diverse geographic area, would provide information that was more generalizable to the total population. For example, there may be significant differences between all types of long-term care in the state of Washington compared to Mississippi, Florida, or New York. Only a study which randomly selected sites from diverse geographic areas could give results that would be applicable nationwide.

It is also evident that this limited study did not measure all variables that may be important in how individuals perceive the quality of their lives. As noted in the modified P-E fit model, additional questions that may provide important information could be: 1) where did you live before you moved here; 2) for how long; 3) why did you move here; and 4) who decided? This could help determine whether or not a person moved from his or her own home, how long the person had lived in the previous setting, what precipitated the move, and whether or not the move was the person's choice. Data on pre- and post-move perceptions would be useful. Following people over a period of time would provide additional data to help determine whether the environment was an important influence, the level of disability, or the type of individual, or combinations of all of these affected perceptions of quality of life.

A longitudinal study would be useful in several other ways. The effect of length of stay could be more accurately determined. More information about an appropriate minimum length of stay period for research could be provided in a longitudinal study of

two or so years. Since the average length of stay was 1.52 years for the nursing homes residents and 1.45 years for assisted living residents, 2 years should include a majority of long-term care residents. These data might help determine how long it takes people to adjust to a move, regardless of type of setting. Three months, which was chosen for this study, was an arbitrary length of time, and a shorter or longer period might be more revealing for this type of matched-pair design.

However, it would be counterproductive to make the minimum length of stay too long, for example as much as a year, since this would exclude many typical long-term care residents. More than half of those admitted to a nursing home stay less than one year (Evashwick, 1996). Individuals could be tracked and comparisons made if they move from one setting to another, for example, the same individuals in assisted living and then in a nursing home.

Personality factors, as noted above, may influence how an individual perceives quality of life. Standardized instruments to determine personality characteristics such as introversion versus extroversion, or dependence versus independence, could be utilized. It appeared possible that outgoing individuals who prefer activity and frequent social contact were more content in nursing homes than those individuals who enjoy solitude and quiet. Measurement of extroversion versus introversion could provide empirical evidence to determine if these observations might be accurate. Some individuals seem to be comfortable, or even pleased, with "being taken care of" by other people who were quickly available when summoned. Others indicated a preference for "being left alone" and doing everything possible for themselves. Measurement of these characteristics of dependence and independence and comparison with satisfaction in different types of sites could be useful in predicting and enhancing congruence.

Measurements of other factors that may contribute to perceptions of quality of life might be number of visits from family and friends per month (personal environment), amount of participation in facility activities, and a brief staff questionnaire to determine attitudes and values of personnel about issues such as privacy (social environment). All of these factors may well influence congruence and perception of quality of life.

Whether or not it has been measured correctly that residents of both types of sites perceive the quality of their lives as similar, individuals' perceived quality of life is not the only factor in overall quality of life. In addition to an individual's perceptions of quality of life, perceptions of staff, family, friends, and society are relevant, contribute to the "social environment" vector toward congruence, are often different from residents, and could be measured in another study. Assisted living might be perceived by those not living there as more desirable, because it does appear more homelike and familiar. But familiarity and a homelike environment are not the only factors in quality of life. The findings of such a future study should be viewed with caution, however. Assisted living may be in a period of positive public perceptions because it is a new and welcome alternative. Just as nursing homes have experienced some negative publicity, assisted living facilities may anticipate media coverage about isolated abuses. It is almost inevitable that well meaning consumers and reporters will discover individuals in assisted living whose premature death or unnecessary suffering will inspire tales of maltreatment. It will be important to remember that, as in nursing homes, maltreatment is not the norm, and a plethora of regulations may not be the cure. Overgeneralizations are tempting, especially to the media and busy legislators. Due primarily to its recent development, data are lacking about assisted living and additional research is needed. It would be prudent to base decisions on much more than just a few studies. Greater understanding of assisted living as an option for nursing-

home eligible residents is needed, and has public policy implications as the nation seeks to meet the needs of the increasing older population.

#### Implications for Long-term Care Policy

Although the older population has increased, the "bed" count in nursing homes has decreased. Financing is being diverted into less restrictive and less expensive options: home care, adult day care, and assisted living. The data of this study suggest that, for some individuals of comparable disability, assisted living saves money and does not compromise quality of life. If persons of comparable functional ability perceive the quality of their lives to be similar in nursing homes and in assisted living, public policy might support the least costly choice. The federal budget is more at the forefront than is usual. Lobbyists are under closer scrutiny and restrictions. The least costly options may have the most support by policy makers.

A potential negative consequence of this is that persons who really need the environment of a nursing home may be inappropriately placed in assisted living. Another potential problem for the future is that residents who need nursing home care, with a decrease in licensed beds, may not find a site available other than assisted living. At least two major providers of long-term care in Seattle have already converted double and triple occupancy nursing home rooms into private assisted living apartments. This is financially feasible because of the less trained, less highly paid, and fewer staff in assisted living, as well as the cost associated with numerous and stringent regulations and personnel to apply and monitor these regulations in nursing homes. These assisted living quarters also attract new occupants more rapidly than nursing home rooms and thus can be more profitable, since vacancies are costly to providers. The increase in assisted living and decrease in nursing home capacity in

proportion to the older population implies that policies should monitor and perhaps regulate this process.

But if this process is regulated, another policy implication is that as regulations of assisted living increase, the cost probably will go up. Assisted living may then become more restrictive to staff and residents and less affordable. More restrictions may be reflected in a lower perceived quality of life. Whatever regulations are instituted for assisted living facilities, care must be taken to avoid unnecessarily limiting creativity, individuality, economy, and personal choice. Standards should allow for as much flexibility as possible. Serious study of potential regulations and the implications of implementation is warranted. What one person considers desirable may not be the same for another person. Should standards be rigid or flexible, numerous or few?

In addition, more older people are purchasing long-term care insurance policies, many of which will provide for some types of assisted living (Wiener, Illston & Hanley, 1994). How will this affect the marketplace, the regulations, the availability of assisted living, and long-term care policies?

The fact that as residents age in place, assisted living may increasingly house a more disabled population requiring more costly care should also be taken into account, as discussed below.

#### *Incidence of Disability and Policy*

Recently revised projections of disability, which indicate decreasing incidence, also have policy implications (Manton, Corder & Stallard, 1993). It has been demonstrated in the National Long-term Care Survey (NLTC) that since 1982, when the survey began, there have been declines in the disability rates of 1 to 2 percent every year. A recent analysis using Manton's latest figures from the 1994 NLTC found that older people are even more robust and less disabled than had been previously anticipated (Kolata, 1996). Therefore, the need for congregate

long-term care may be less than has often been anticipated, which has implications for long-term care.

Several reasons may account for this decline in disability rates. Better education and higher income tend to be related to lower disability rates, and the older population is increasingly better educated and more prosperous (Jette in George & Binstock, 1995). Health care, rehabilitation, home safety, and environmental modifications are thought to have been effective in the prevention of disability (Fries, 1989). This study suggests that the average nursing home resident is more disabled than the average assisted living resident. Therefore, because of *less* projected disability, we may anticipate a *greater* need for additional assisted living facilities than for nursing homes, because the older population requiring care in the future may be less disabled than in the past. It also suggests that public policy that invests in increased disease prevention, health promotion, and accessible environments could decrease the future need for long-term care (and cost) proportionate to the projected increase in the older population.

#### Implications for Teaching and Practice

Depending on the student, learning goals suggested by this study could be: 1) to understand some pragmatic assessment tools for frail older people; 2) to understand quality of life measurement; 3) to be aware of the spectrum of long-term care possibilities; 4) to understand potential advantages and disadvantages of different long-term care settings; 5) to gain skills in enhancing P-E fit. The findings relate to this last learning goal in several ways. Both in teaching students and applying these findings to practice, understanding and applying the notion of P-E fit could be useful.

This study suggests that maximum quality of life in the two different settings studied depends on much more than level of disability, age, and length of stay. It appears necessary to

consider understanding other factors such as personality and preference, history and choice, and cost and to seek a good match with the physical, personal and social environment of the facility, if congregate care is needed. Because nursing homes and assisted living can be very different (especially in cost), or have very similar qualities, it is important to take account of the particular facilities available, not just the categories of long-term care. And all individuals are not alike, even if they are of the same level of functional ability. Students, families, and professionals should be encouraged to consider the multiple aspects of the individual and the setting, the "P" and the "E", to maximize the possibilities for the greatest congruence, the best "P-E fit."

Some ways to implement inclusion of sufficient criteria to suggest a move or to advocate "aging in place" would be to develop specific tools and use existing instruments to measure level of disability, environmental barriers, personality and personal preferences, and cultural factors. More and more, public and private agencies are providing assessment, case management, and assistance in locating high quality congregate living. But again, what one person considers desirable may not be the same for another person. It must be the person who is actually going to live in the environment who must have the power of selection. Acknowledgment of the highly personal and individual nature of quality of life, and the best setting to maximize it, needs to be instilled in those who work with older people, those who teach them, and those who create and implement policy regarding long-term care. It is also crucial to recognize the importance of an individual's selection of a particular long-term care residence.

Whatever the reasons affecting these results, it is clear that in this study of 43 matched pairs from 20 selected sites, with comparable levels of functional ability, individuals expressed similar perceptions of the quality of their lives regardless of type of long-term care site. That costs are higher in nursing homes

than in assisted living facilities for comparable individuals is also clear, but it is important to interpret this finding with caution. As discussed, this is a specific long-term care population of the same level of functional ability, not the typical long-term care population. Projections for the future older population confirm that both assisted living and nursing homes will be needed. And it is not suggested that those in nursing homes who made up the matched pairs could simply be relocated to assisted living without sacrificing quality of life. These findings have implications that suggest considerations for enhancing the best fit between individuals and environments that can increase the possibilities for the greatest quality of life at the end of life. Some frail older people will always need the care and environment of a nursing home. Some frail older people may find their perceptions of quality of life increased in assisted living.

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## APPENDIX A

### SICKNESS IMPACT PROFILE (SIP)

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I am going to read a number of statements. Please respond

TRUE if the statement describes you today

or respond

FALSE if the statement does not describe you today,  
does not apply to you, or  
only partially applies to you.

Please listen carefully to each statement. Some of the statements are very similar and differ only by words such as "some" or "most".

If you respond TRUE, that a statement does describe you, I will then ask you if it is true because of your health.

#### DEFINITION OF HEALTH

By health we mean both how you feel emotionally, as well as how you feel in your body. For this study, health includes conditions people sometimes think of as "just getting older," such as loss of hearing or slowing down in the ability to do things. By health we also mean chronic illnesses, such as heart problems, arthritis or diabetes; and conditions connected to being disabled, such as amputations.

**FOR NH, RCF OR OTHER LTCF RESIDENTS, OR HOSPITAL PATIENTS**

Also, for purposes of this study, if you respond TRUE, that a statement does describe you, and if the reason it describes you is because you are in a (nursing home /hospital), then you should respond, Yes, it is related to your health.

Ask the first question in first box, enter 1 if true or 2 if not true. If the answer is not true (2), immediately enter a 7 in the second box. Ask the second question only if answer to first question is true (1). "Is that true because of your health or because you are in a nursing home?" Then in the second box enter (1) if related to health or (2) if not related to health. Use (8) code if subject does not answer.

First Box:

Second Box:

1=True  
2=Not True  
8=Don't Know

1=Related to health or 2=Not related to health or 8=Don't know/no answer  
7=Not asked, Enter this only if answer in first box is = 2 or = 8.  
8=Don't know, this may only be entered if answer in first box is 1 or 2.

## SLEEP AND REST

These first statements describe your sleep and rest activity. Please respond TRUE if the statement describes you today. Respond NOT TRUE if the statement does not describe you today, does not apply to you, or only partially applies to you.

- |     |   |
|-----|---|
| 001 | 10.4 I am sleeping or dozing most of the time-night and day. Is that true or not true?<br>If true, is that related to your health or because you are in a nursing home? |
| 002 | 6 I sleep or nap more during the day. Is that true or not true?<br>If true, is that related to your health or because you are in a nursing home?                        |
| 003 | E.3 I spend much of the day lying down in order to rest.<br>If true, is that related to your health or because you are in a nursing home?                               |
| 004 | S.8 I lie down more often during the day in order to rest.<br>If true, is that related to your health or because you are in a nursing home?                             |

## EMOTIONAL BEHAVIOR



005

4. I act nervous or restless. Is that true or not true?  
If true, is that related to your health or because you are in a nursing home?



006

5. I laugh or cry suddenly.  
If true, is that related to your health or because you are in a nursing home?



007

6. I often moan and groan in pain or discomfort.  
If true, is that related to your health or because you are in a nursing home?



008

7. I act irritable and impatient with myself, for example, talk badly about myself, swear at myself, blame myself for things that happen.  
If true, is that related to your health or because you are in a nursing home?



009

8. I say how bad or useless I am, for example, that I am a burden on others.  
If true, is that related to your health or because you are in a nursing home?



010

9. I talk about the future in a hopeless way.  
If true, is that related to your health or because you are in a nursing home?

## BODY CARE AND MOVEMENT

The following statements describe how you move about, bathe, go to the toilet and dress yourself. Please respond true if the statement describes you today. Respond not true if it does not describe you today.

- 011 8.5 I get dressed only with someone's help.  
If true, is that related to your health or because you are in a nursing home?
- 012 7.4 I do not fasten some or all of my clothing, for example, I require assistance with buttons, or zippers, or shoelaces.  
If true, is that related to your health or because you are in a nursing home?
- 013 5.7 I have trouble getting shoes, socks, or stockings on.  
If true, is that related to your health or because you are in a nursing home?
- 014 11.5 I do not bathe myself at all, that is, I am bathed by some else.  
If true, is that related to your health or because you are in a nursing home?
- 015 10 I stand up only with someone's help.  
If true, is that related to your health or because you are in a nursing home?
- 016 12.1 I do not move into or out of bed or a chair by myself, that is, I am moved by a person or mechanical aid.  
If true, is that related to your health or because you are in a nursing home?
- 017 8.6 I hold on to something to move myself around in bed.  
If true, is that related to your health or because you are in a nursing home?
- 018 9.8 I do not maintain balance.  
If true, is that related to your health or because you are in a nursing home?
- 019 12.5 I am in a restricted position all the time.  
If true, is that related to your health or because you are in a nursing home?
- 020 12.4 I do not have control of my bladder.  
If true, is that related to your health or because you are in a nursing home?
- 021 12.5 I do not have control of my bowels.  
If true, is that related to your health or because you are in a nursing home?

## MOBILITY

These next statements describe how you get about the house or outside. Please respond TRUE if the statement describes you today. Respond NOT TRUE if the statement does not describe you today.

- 022 10.6 I stay only within one room. Is that true or not true?  
If true, is that related to your health or because you are in a nursing home?
- 023 8.6 I am getting around only within one building.  
If true, is that related to your health or because you are in a nursing home?
- 024 6.6 I stay home most of the time.  
If true, is that related to your health or because you are in a nursing home?
- 025 5.4 I stay away from home only for brief periods of time.  
If true, is that related to your health or because you are in a nursing home?
- 026 10.9 I am staying in bed most of the time.  
If true, is that related to your health or because you are in a nursing home?
- 027 8.1 I am staying in bed more.  
If true, is that related to your health or because you are in a nursing home?

## SOCIAL INTERACTION

These statements describe your contact with your family and friends. Please respond TRUE if the statement describes you today. Respond NOT TRUE if the statement does not describe you today.

- 028 8 I am avoiding social visits from others.  
If true, is that related to your health or because you are in a nursing home?
- 029 4.3 I am cutting down the length of visits with friends.  
If true, is that related to your health or because you are in a nursing home?
- 030 11.5 I refuse contact with family members, for example, turn away from them.  
If true, is that related to your health or because you are in a nursing home?
- 031 10.2 I isolate myself as much as I can from the rest of the family.  
If true, is that related to your health or because you are in a nursing home?
- 032 8.5 I act disagreeable to family members, for example, I act spiteful, I am stubborn.  
If true, is that related to your health or because you are in a nursing home?
- 033 11.9 I have frequent outbursts of anger at family members, for example, strike at them, scream, thrown things at them.  
If true, is that related to your health or because you are in a nursing home?
- 034 8.4 I often act irritable toward those around me, for example, snap at people, give sharp answers, criticize easily.  
If true, is that related to your health or because you are in a nursing home?
- 035 6.7 I have less interest in other people's problems, for example, don't listen when they tell me about their problems, don't offer to help.  
If true, is that related to your health or because you are in a nursing home?
- 036 5.2 I show less affection.  
If true, is that related to your health or because you are in a nursing home?

## AMBULATION

The next set of statements describe walking and the use of stairs. Please respond TRUE if the statement describes you today. Respond NOT TRUE if the statement does not describe you today.

- 037 9.6 I get around in a wheelchair. Is that true or not true?  
If true, is that related to your health or because you are in a nursing home?
- 038 8.6 I walk only with help from someone.  
If true, is that related to your health or because you are in a nursing home?
- 039 7.9 I get around only by using a walker, crutches, cane, walls, or furniture.  
If true, is that related to your health or because you are in a nursing home?
- 040 5.5 I walk by myself, but with some difficulty, for example, limp, wobble, stumble, or have a stiff leg.  
If true, is that related to your health or because you are in a nursing home?
- 041 4.6 I walk shorter distances or stop to rest often.  
If true, is that related to your health or because you are in a nursing home?
- 042 5.6 I do not walk up or down hills.  
If true, is that related to your health or because you are in a nursing home?
- 043 3.5 I walk more slowly.  
If true, is that related to your health or because you are in a nursing home?
- 044 7.6 I walk up or down stairs only with assistance from someone else.  
If true, is that related to your health or because you are in a nursing home?

## ALERTNESS BEHAVIOR

The next statement also describe your feelings and behavior. Please respond TRUE if the statement describes you today. Respond NOT TRUE if the statement does not describe you today.

- 045 6.4 I make more mistakes than usual.  
If true, is that related to your health or because you are in a nursing home?
- 046 7.0 I forget a lot, for example, things that happened recently, where I put things, appointments.  
If true, is that related to your health or because you are in a nursing home?
- 047 5 I have difficulty doing activities involving concentration and thinking.  
If true, is that related to your health or because you are in a nursing home?
- 048 8.4 I have difficulty reasoning and solving problems, for example, making plans, making decisions, learning new things.  
If true, is that related to your health or because you are in a nursing home?
- 049 9 I am confused and start several actions at a time.  
If true, is that related to your health or because you are in a nursing home?

## COMMUNICATION

Now, I am going to read some statements about how you talk to other people and write. Please respond TRUE if the statement describes you today. Respond NOT TRUE if the statement does not describe you today.

- |     |     |   |
|-----|-----|---|
| 050 | 6.4 | I do not speak clearly when I am under stress. Is that true or not true?<br>If true, is that related to your health or because you are in a nursing home?   |
| 051 | 7.6 | I have difficulty talking, for example, get stuck, stutter, stammer, slur my words.<br>If true, is that related to your health or because you are in a nursing home?  |
| 052 | 8.3 | I often lose control of my voice when I talk, for example, my voice gets louder or softer, trembles, changes unexpectedly.<br>If true, is that related to your health or because you are in a nursing home? |
| 053 | 8.7 | My speech is understood with difficulty.<br>If true, is that related to your health or because you are in a nursing home?   |
| 054 | 9.3 | My speech is understood only by a few people who know me well.<br>If true, is that related to your health or because you are in a nursing home?   |

## RECREATION/PASTIMES

The following statements describe the activities you usually do in your spare time-for relaxation, entertainment, or just to pass the time. Please respond TRUE if the statement describes you today. Respond NOT TRUE if the statement does not describe you today.

- 055 3.3 I am doing fewer community activities. Is that true or not true?  
If true, is that related to your health or because you are in a nursing home?
- 056 3.6 I am going out for entertainment less often.  
If true, is that related to your health or because you are in a nursing home?
- 057 7.7 I am not doing any of my usual physical recreation or activities such as walking, gardening, swimming, or golfing.  
If true, is that related to your health or because you are in a nursing home?
- 058 4.3 I am cutting down on some of my usual physical recreation or activities.  
If true, is that related to your health or because you are in a nursing home?
- 059 5.1 I am doing more inactive pastimes such as, watching TV, playing cards, or reading, in place of my other usual activities.  
If true, is that related to your health or because you are in a nursing home?
- 060 5.4 I am cutting down on some of my usual inactive recreation and pastimes.  
If true, is that related to your health or because you are in a nursing home?
- 061 3.9 I do my hobbies and recreation for shorter periods of time.  
If true, is that related to your health or because you are in a nursing home?

EATING

The following statements describe your eating and drinking habits. Please respond TRUE if the statement describes you today. Respond NOT TRUE if the statement does not describe you today.

- 062 3.7 I am eating much less than usual.  
If true, is that related to your health or because you are in a nursing home?
- 063 11.7 I do not feed myself at all, but must be fed.  
If true, is that related to your health or because you are in a nursing home?
- 064 9.9 I feed myself with help from someone else.  
If true, is that related to your health or because you are in a nursing home?
- 065 7.7 I feed myself but only by using specially prepared food or utensils.  
If true, is that related to your health or because you are in a nursing home?
- 066 3.6 I am drinking less fluids.  
If true, is that related to your health or because you are in a nursing home?

—i

APPENDIX B

Ferrans and Powers  
 QUALITY OF LIFE INDEX \*  
 NURSING HOME VERSION

Part I. For each of the following, please choose the answer that best describes how satisfied you are with that area of your life. Please mark your answer by circling the number. There are no right or wrong answers.

HOW SATISFIED ARE YOU WITH:	Very Dissatisfied	Moderately Dissatisfied	Slightly Dissatisfied	Slightly Satisfied	Moderately Satisfied	Very Satisfied
1. Your health?	1	2	3	4	5	6
2. The health care you are receiving?	1	2	3	4	5	6
3. The amount of pain that you have?	1	2	3	4	5	6
4. The amount of energy you have for everyday activities?	1	2	3	4	5	6
5. Your physical independence?	1	2	3	4	5	6
6. The amount of control you have over your life?	1	2	3	4	5	6
7. Your family's health?	1	2	3	4	5	6
8. Your children?	1	2	3	4	5	6
9. Your family's happiness?	1	2	3	4	5	6
10. Your relationship with your spouse/significant other?	1	2	3	4	5	6
11. Your sex life?	1	2	3	4	5	6
12. Your friends?	1	2	3	4	5	6
13. The emotional support you get from others?	1	2	3	4	5	6

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HOW SATISFIED ARE YOU WITH:	Very Dissatisfied	Moderately Dissatisfied	Slightly Dissatisfied	Slightly Satisfied	Moderately Satisfied	Very Satisfied
14. Your ability to do things for family and friends?	1	2	3	4	5	6
15. Your usefulness to others?	1	2	3	4	5	6
16. The amount of stress or worries in your life?	1	2	3	4	5	6
17. The room(s) you live in?	1	2	3	4	5	6
18. The community setting you live in?	1	2	3	4	5	6
19. Your standard of living?	1	2	3	4	5	6
20. Not having a job (if unemployed, retired or disabled)?	1	2	3	4	5	6
21. Your education?	1	2	3	4	5	6
22. Your financial independence?	1	2	3	4	5	6
23. Your leisure time activities?	1	2	3	4	5	6
24. Your ability to travel?	1	2	3	4	5	6
25. Your potential for a happy future?	1	2	3	4	5	6
26. Your peace of mind?	1	2	3	4	5	6
27. Your personal faith?	1	2	3	4	5	6
28. Your achievement of personal goals?	1	2	3	4	5	6
29. Your happiness in general?	1	2	3	4	5	6
30. Your life in general?	1	2	3	4	5	6
31. Your personal appearance?	1	2	3	4	5	6
32. Yourself in general?	1	2	3	4	5	6

Part II. For each of the following, please choose the answer that best describes how important that area of your life is to you. Please mark your answer by circling the number. There are no right or wrong answers.

HOW IMPORTANT TO YOU IS:	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Slightly Important	Moderately Important	Very Important
1. Your health?	1	2	3	4	5	6
2. The health care you are receiving?	1	2	3	4	5	6
3. Being completely free of pain?	1	2	3	4	5	6
4. Having enough energy for everyday activities?	1	2	3	4	5	6
5. Your physical independence?	1	2	3	4	5	6
6. Having control over your life?	1	2	3	4	5	6
7. Your family's health?	1	2	3	4	5	6
8. Your children?	1	2	3	4	5	6
9. Your family's happiness?	1	2	3	4	5	6
10. Your relationship with your spouse/ significant other?	1	2	3	4	5	6
11. Your sex life?	1	2	3	4	5	6
12. Your friends?	1	2	3	4	5	6
13. Emotional support?	1	2	3	4	5	6
14. Doing things for family and friends?	1	2	3	4	5	6
15. Being useful to others?	1	2	3	4	5	6
16. Having a reasonable amount of stress or worries?	1	2	3	4	5	6
17. The room(s) you live in?	1	2	3	4	5	6

HOW IMPORTANT TO YOU IS:	Very Unimportant	Moderately Unimportant	Slightly Unimportant	Slightly Important	Moderately Important	Very Important
18. The community setting you live in?	1	2	3	4	5	6
19. A good standard of living?	1	2	3	4	5	6
20. To have a job?	1	2	3	4	5	6
21. Your education?	1	2	3	4	5	6
22. Your financial independence?	1	2	3	4	5	6
23. Leisure time activities?	1	2	3	4	5	6
24. The ability to travel?	1	2	3	4	5	6
25. Having a happy future?	1	2	3	4	5	6
26. Peace of mind?	1	2	3	4	5	6
27. Your personal faith?	1	2	3	4	5	6
28. Achieving your personal goals?	1	2	3	4	5	6
29. Happiness?	1	2	3	4	5	6
30. Being satisfied with life?	1	2	3	4	5	6
31. Your personal appearance?	1	2	3	4	5	6
32. Are you to yourself?	1	2	3	4	5	6

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- M.A. 1979, Master of Arts in English Literature, University of Washington.
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