EXAMINATION OF THE PERCEPTIONS OF AN ELDERLY POPULATION IN SUBSIDIZED HOUSING AND THEIR UTILIZATION OF COMMUNITY-BASED HEALTH CARE

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ABSTRACT

Tremendous growth is projected for the elderly population in the coming decades with regard to size and diversity. This research examined the perspectives of low income well individuals age 60 and older living in congregate subsidized urban housing. It explored how they perceive their communities, their health care practices, and their health and well-being. This inquiry utilized qualitative phenomenological methods, specifically face-to-face indepth interviews. The qualitative approach was supplemented by quantitative data in the form of standardized health-related quality of life measurement. An evaluation component also investigated the reasons residents used or did not use an on-site nursing service.

The study noted several noteworthy findings, but the need for social interaction permeated all domains. The participants demonstrated an adherence to regular schedules. More than half felt positive about living in their settings and more than a quarter felt neutral about their living situation. More than four-fifths of participants felt that they were in good health or had minor problems. The majority had usual sources of medical care and visited their physicians regularly. None experienced any difficulty in getting the care they needed. As a group, the participants scored lower on health-related quality of life than national norms in the physical domain and about equal in the mental domain. The on-site nursing service was not effective with this population. Recommendations included conducting a comprehensive needs assessment with the actual service users, i.e., the residents, before instituting any service. Such services may include a variety of models, e.g., nursing, social, system navigation.

The public health significance of this inquiry is grounded in public health's more holistic view of health – physical, emotional, social, and community domains – than that of traditional medicine. It is the more inclusive view that will inform the development and institution of housing and health services that are more responsive to the needs of the population, incorporating a variety of services that should better address the needs of an increasingly diverse older population and help to achieve the goals of Healthy People 2010, the first of which charges us with the mission to increase not only the years of healthy life, but the quality as well.

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Most of all, I thank God, who makes all things possible.

1.0 CHAPTER ONE: INTRODUCTION

1.1 STATEMENT OF THE PROBLEM

The American population is aging. The increasing size of the age 65 and older population raises several concerns, including changes in family living arrangements, availability of appropriate housing, promotion of healthy lifestyles, and access to and quality of health care. This paper will examine the perspectives of low income well individuals age 60 and older living in congregate subsidized urban housing, with particular focus on utilization of health services.

1.1.1 Background to the Inquiry

Traditionally, community healthcare service provision for the elderly has been viewed from a clinical/medical perspective, i.e., in-home care for the ill or frail individual. While the healthcare community's increased attention to prevention and wellness is apparent, it is generally discussed with regard to younger populations. Little has been written about such services for the well elderly, and even less about on-site service provision. It is expected that the incidence of certain chronic diseases in the elderly, e.g., diabetes and arthritis, will demand more vigilant monitoring and health maintenance activities. This can be viewed as a normal part of a lifelong continuum of care, with the benefit of prolonging wellness and independence. Further, there is a significant economic benefit in deferring the use of institutional healthcare resources, an important consideration in light of the growing number of elderly (Luskin, 1986).

There has been a trend in recent years toward decentralization of healthcare services for the elderly. A consequence of this development is an increase in independent and uncoordinated state and local policies, especially with regard to services for the elderly, a population that is vulnerable to difficulties related to access. Such problems are likely to increase because policy and organizational healthcare provision decisions are increasingly made at the same level as cost-control decisions (Estes & Linkins, 1997).

Access to continuity of healthcare services remains a problem for the elderly population. There exists a "no-care zone" (Estes, 1993) – a gap between *appropriate* services for the elderly and *available* services for the elderly. On-site provision of services within congregate housing may be an effective means of addressing this issue. However, an examination of the residents' perceptions of the residential situation and their general access to health care is necessary as a foundation for establishing on-site services.

To that end, this study will examine the views of elderly residents of senior subsidized housing in Allegheny County, Pennsylvania. Interviews will include attention to the residents' views of an innovative on-site nursing service, which was implemented at the beginning of the study in two of the four data collection sites. The investigator was included in planning and administration discussions related to implementation of the service. The following history of the on-site nursing service was compiled from the investigator's project staff meeting notes.

The University of Pittsburgh Medical Center (UPMC) Department of Community Initiatives was formed in 1999 to add structure to UPMC's efforts to improve the health status of the community it serves. The Department's approaches included developing community partnerships, facilitating program development, and standardizing program evaluation. As a result of this endeavor, in 2001, UPMC Braddock Hospital established a focused outreach program to provide on-site health and wellness services for an elderly population residing in selected Allegheny County subsidized housing sites. A registered nurse provided health management through a holistic program of assessment, intervention, referral, education, and case management. A partnership was formed, which included the UPMC Department of Community Initiatives, UPMC Braddock, the University of Pittsburgh's Graduate School of Public Health (GSPH), and the Allegheny County Housing Authority (ACHA). The program was funded via contract from ACHA to UPMC Braddock.

Implementation plans for this outreach and evaluation effort began in February of 2001. By March 2001, four sites were selected: Site D, Site C, Site J, and Site B. The study sites were set up in a matched pairs design as follows:

Pair 1

Intervention: Site D
Comparison: Site C

Pair 2

Intervention: Site B
Comparison: Site J

The selection and matching processes will be discussed in more detail in the Methodology section of this document. Intervention objectives were intended to be based upon selected focus areas of Healthy People 2010. Each objective was discussed along seven dimensions: screening objectives, measurement tools, health education, disease state management, follow-up, benchmarks, and community resources. The intervention was originally intended to be comprised of the on-site nursing service. The nurse was scheduled to be on site for four to six hours per day, two days a week at Site D (the smaller of the intervention sites) and three days a week at Site B. The plan was to conduct initial nursing assessments prior to opening on-site offices and re-assessments after approximately one year of service. Assessments were to include medical history, vital signs (heart rate, blood pressure, and respiratory rate), self-reported height and weight, and standardized scales measuring depression, dementia, and substance abuse.

During early discussions, it was decided to include an activities component that would be separate from the intervention. This component was to be provided by the Activities Therapy Department at UPMC Braddock and it was to be slowly phased in, being implemented at intervention sites first and comparison sites last. Unfortunately, the ACHA required the activities component to be initiated without delay at all sites, including the comparison sites. In the fall of 2001 and spring of 2002, the Department of Occupational Therapy (University of Pittsburgh's School of Health and Rehabilitation Sciences) supplemented the activities component by providing once or twice weekly occupational therapy activity sessions. Activities included games, movement, crafts, horticulture, safety awareness, and baking. The focus was on gross and fine motor skills, cognition, self expression, safety, problem solving, health and wellness, and self-esteem. The activities sessions did not include planned trips and outings.

One main difficulty related to implementation of the nursing service at all selected sites was the unanticipated difficulty in securing a vacant apartment to use as the office. Apartments were designated as offices and then rented as to potential tenants, making it necessary to begin the process again. At both intervention sites, the office also had to be moved after the initiation of the service.

The nursing service was first implemented at Site D in the spring of 2001. By July, there were eight to ten office visits a day at this site; however, these clients were usually the same group of people. The number of regular clients was a little over one quarter of the residents. By March of 2002, over a third of the residents were regular office visitors. Site D residents were less enthusiastic about formal activities, e.g., diet and exercise education, than about gathering in nurse's office. The residents only rarely participated in outside activities and trips. An unanticipated finding was that many residents were not elderly, but rather considered disabled because of substance abuse, and thus approved for residence at the ACHA senior communities.

Intervention was initiated at Site B in the summer of 2001; however, because of difficulties in securing office space, initial interactions consisted of nursing assessments done door to door. Office space for regular visits was not available until December 2001. In the fall of 2001, designating another intervention site was considered, but there were no other sites that were as good a match, and none of the other sites had office space available either. The residents at first resisted the nursing service because they thought that it would replace their regular physicians. The nurse spoke at a tenant council meeting to rectify this misconception. The residents at Site B were less participatory in the nursing service than those at Site D, with only about six percent of the residents visiting regularly (compared with over a third at Site D). It also was noted that this group of individuals was much more active with outside social activities and outings.

Initial pre-service assessments were conducted at the smaller comparison site, Site C, in the fall of 2002 through the fall of 2003. Almost a third of the residents at Site C participated. The nurse met with resistance from the tenant council president about conducting initial assessments at the other comparison site, Site J. A small number of assessments, a little over ten percent of the residents, were done at Site J through fall of 2003.

In June 2004, the service contract from ACHA was scheduled to be re-bid. UPMC Braddock was not successful in the bid and the contract was awarded to another agency. Nursing services were significantly cut in terms of time and content. As a result of this exogenous change, this study was re-structured to concentrate on the qualitative component, which focuses on the perceptions of individuals residing in senior subsidized housing. Except for issues directly relevant to the on-site nursing service, discussion will not differentiate between intervention and comparison sites.

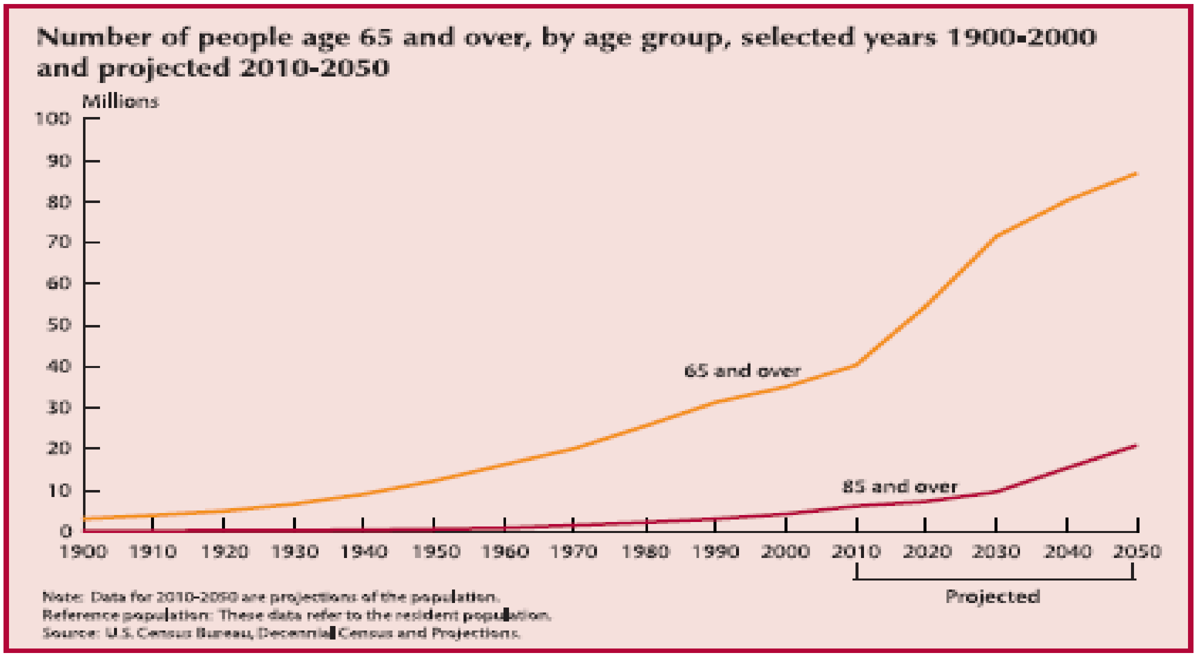
A social construction orientation will be applied to characterize the residents' perceptions of their realities, beliefs, and world views in the community (Patton, 2002). A utilization-focused evaluation approach will be used to investigate a healthcare delivery process where elderly residents of subsidized housing have access to preventive care, non-emergent disease state management, activity and social programming, and health education from on-site health professionals.

1.1.2 A Snapshot of the Elderly Population

1.1.2.1 The Elderly Population in the United States

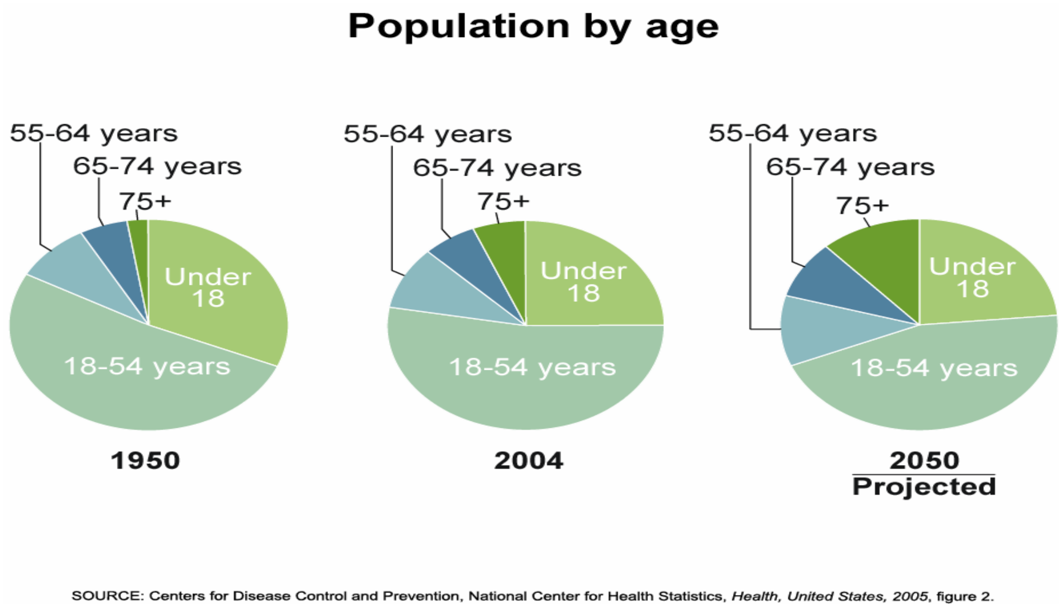
There are approximately 40 million individuals age 65 and older in the United States. Life expectancy for this population is 16.6 years for men and 19.5 years for women (National Center for Health Statistics, 2006). The US population age 65 and over is expected to nearly double in size in the next 25 years. By 2030, almost 20 percent of Americans, or approximately

72 million people, will be 65 years or older, and by 2050, this population is expected to total approximately 87 million. Individuals age 85 years and older (the "oldest-old") constitute the fastest growing subgroup of the U.S. population. This will be especially apparent after 2030 as the Baby Boomers enter this age category (Federal Interagency Forum on Aging-Related Statistics, 2004). Figure 1 illustrates the growth of the older population for both the overall 65 and older age group and the oldest-old age group. Figure 2 shows the increase in older age groups as proportions of the total US population. In the 65 and older age group, 58 percent are women. This proportion increases to 69 percent in the 85 and older group. Older women are two times as likely to live alone as are older men.


Number of people age 65 and over, by age group, selected years 1900-2000 and projected 2010-2050

Note: Data for 2010-2050 are projections of the population.
Reference population: These data refer to the resident population.
Source: U.S. Census Bureau, Decennial Census and Projections.

Figure 1. Growth of the age 65 and over and 85 and over populations



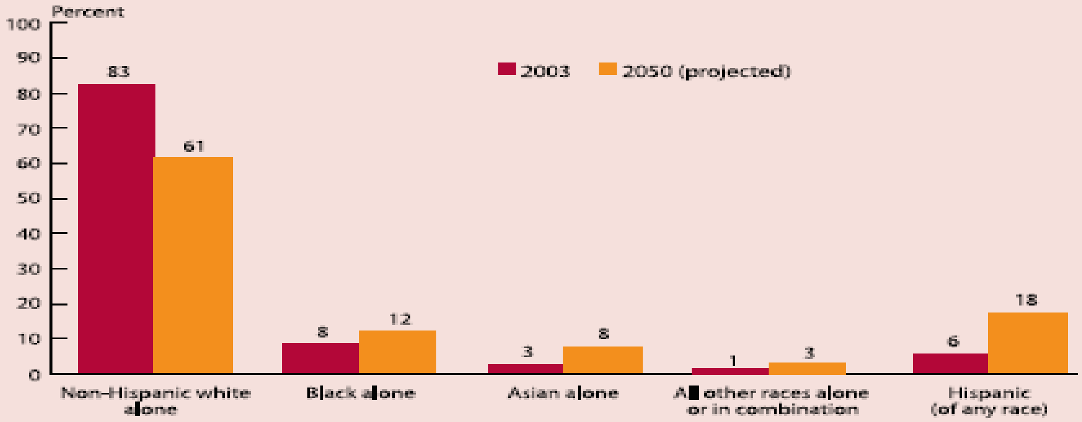
Population by age

SOURCE: Centers for Disease Control and Prevention, National Center for Health Statistics, *Health, United States, 2005*, figure 2.

Figure 2. Changes in the relative proportions of the 65-74 and 75 and older age groups

The US Census Bureau projects an increasingly diverse population, including in the older age groups (Federal Interagency Forum on Aging-Related Statistics, 2004). From 2003 to 2050, the proportion of non-Hispanic whites will shrink from 83 percent to 61 percent of the older population in the US. The proportion of African-Americans will grow from 8 percent to 12 percent, Asians from 3 percent to 8 percent, and Hispanics from 6 percent to 18 percent. Figure 3 shows the 2003 and projected 2050 diversity in the age 65 and over population. Services and resources utilized by elderly individuals will need to be more adaptable to accommodate the needs of this diverse population.

Population age 65 and over, by race and Hispanic origin, 2003 and projected 2050



Note: The term "non-Hispanic white alone" is used to refer to people who reported being white and no other race and who are not Hispanic. The term "black alone" is used to refer to people who reported being black or African American and no other race, and the term "Asian alone" is used to refer to people who reported only Asian as their race. The use of single-race populations in this report does not imply that this is the preferred method of presenting or analyzing data. The U.S. Census Bureau uses a variety of approaches. The race group "All other races alone or in combination" includes American Indian and Alaska Native, alone; Native Hawaiian and Other Pacific Islander, alone; and all people who reported two or more races.

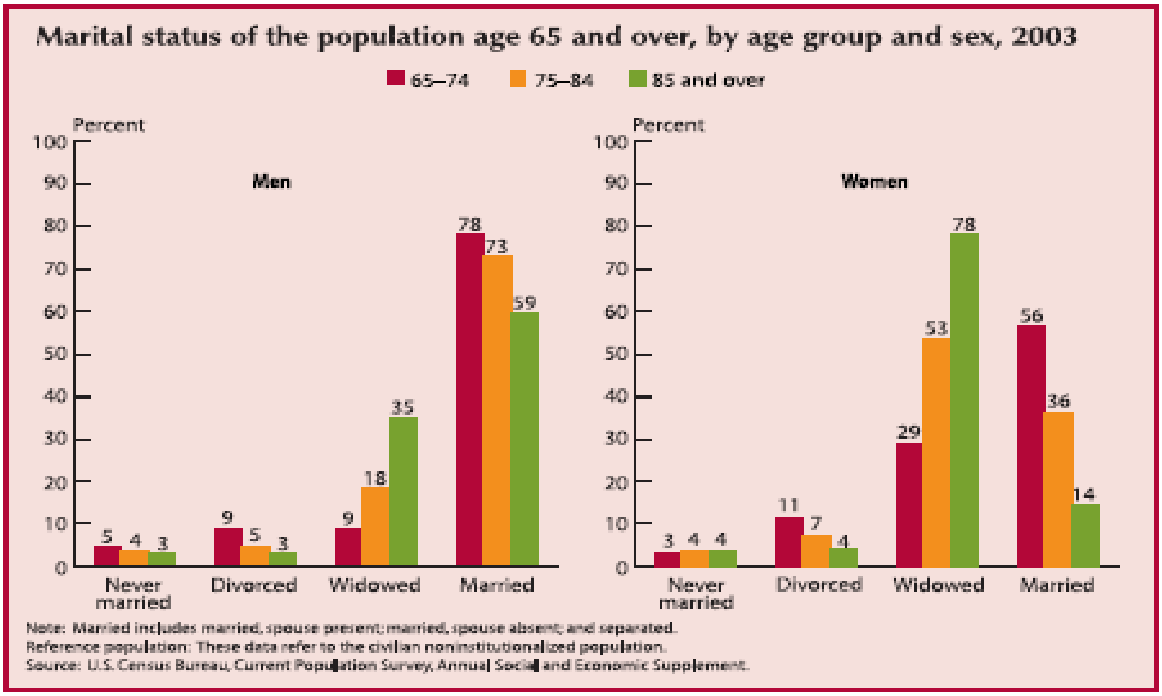
Reference population: These data refer to the resident population.

Source: U.S. Census Bureau, Population Estimates and Projections, 2004.

Figure 3. Diversity of the age 65 and over population, 2003 and projected 2050

Improvements in medical technology, treatment interventions, and disease prevention have contributed to an improvement in the health of older Americans; however, many are disabled and suffer from chronic conditions. The proportion with a disability fell from 26.2 percent in 1982 to 19.7 percent in 1999. But in the 2000 census, 14 million people age 65 and older reported some level of disability, primarily associated with a high prevalence of chronic conditions such as arthritis or cardiovascular disease.

The U.S. Census Bureau describes changes in the American family that have serious implications for future aging, particularly with regard to living arrangements and with the availability of individuals to assist with routine, acute and chronic healthcare. In the age 65 to 74 group, 78 percent of men are married, compared to only 56 percent of women. Even among the oldest-old (85 and older), the majority of men, 59 percent, are married. Figure 4 shows the marital status of men and women age 65 and over in 2003. The increase in divorce rates has changed family structure and composition. Some researchers suggest that in the future, fewer children and more stepchildren may make family support for older people less available. Only 1.6 percent of older men and 1.5 percent of women age 65 and older were divorced in 1960; by 2003, those proportions had increased to 7 percent of older men and 8.6 percent of older women. As an illustration of the trend continuing, for people in their early 60s in 2003, 12.2 percent of men and 15.9 percent of women were divorced (US Census Bureau, 2006).

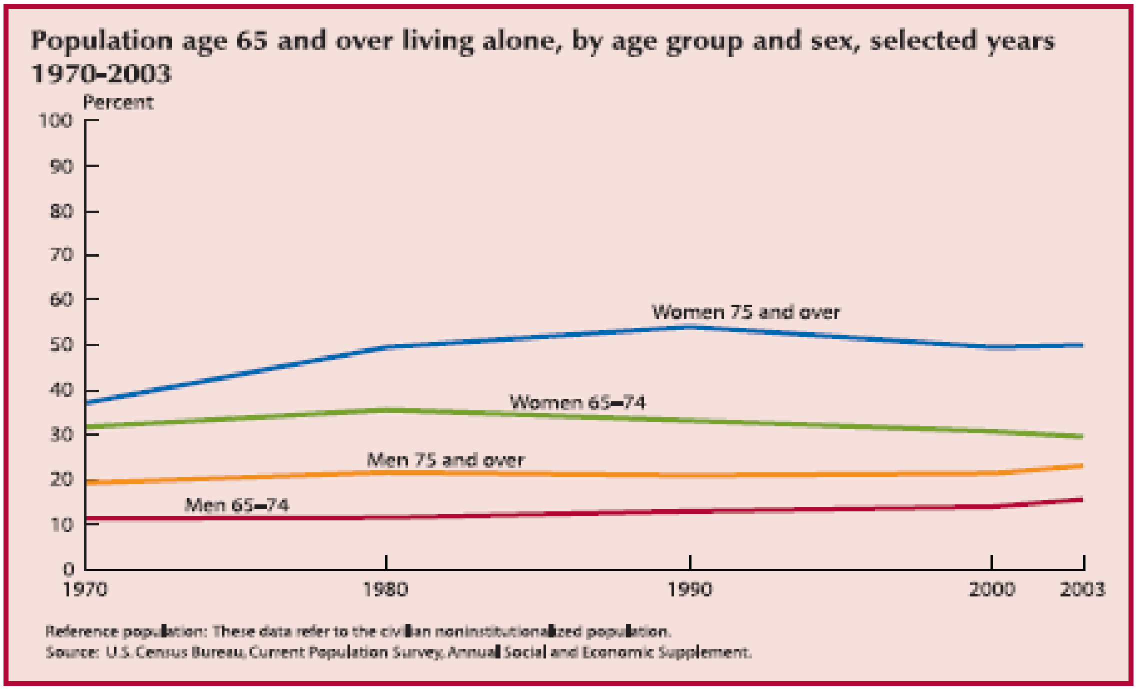


Note: Married includes married, spouse present; married, spouse absent; and separated.
Reference population: These data refer to the civilian noninstitutionalized population.
Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement.

Figure 4. Marital status, age 65 and over 2003

According to the Federal Interagency Forum on Aging-Related Statistics (2004), the status of living arrangements for older individuals is linked to income and health status. The likelihood of living alone increases with age for both men and women. However, the proportion is higher for women in all senior age groups. Refer to Figure 5 for an illustration of this trend.

In 2003, 30 percent of women age 65 to 74 lived alone and 50 percent of women age 75 and older lived alone. For men, 16 percent age 65 to 74 and 23 percent 75 and over lived alone. There is an increased risk of poverty for elderly people who live alone when compared to those who live with a spouse. Sixteen percent of elderly men who live alone and 21 percent of elderly women are below the poverty level. In contrast, only 5 percent of their married counterparts are below the poverty level.


Population age 65 and over living alone, by age group and sex, selected years 1970-2003

Reference population: These data refer to the civilian noninstitutionalized population.
Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement.

Figure 5. Proportion of individuals living alone, age 65-74 and 75 and older

In a 1999 study, Gill, et al., noted that environmental hazards were common in the homes of community-living elderly individuals, although slightly less frequent in age-restricted housing. Additional risk factors included female gender, non-white race, low income, arthritis and cardio-vascular disease (Gill, Williams, Robison, & Tinetti, 1999).

The proportion of income spent on housing is a concern for older Americans because as it increases, there is less income available for other expenses, including health care. Although

Medicare is the primary source health insurance for older Americans (Federal Interagency Forum on Aging-Related Statistics, 2004), non-covered costs associated with care also must be considered, including medications, transportation, co-pays, and preventive care. When looking at the income of older people divided into five categories, people in the lowest category spent 40 percent of their income on housing. As illustrated in Figure 6, the proportion of income spent on housing has increased in all categories since 1987 (Federal Interagency Forum on Aging-Related Statistics, 2004).

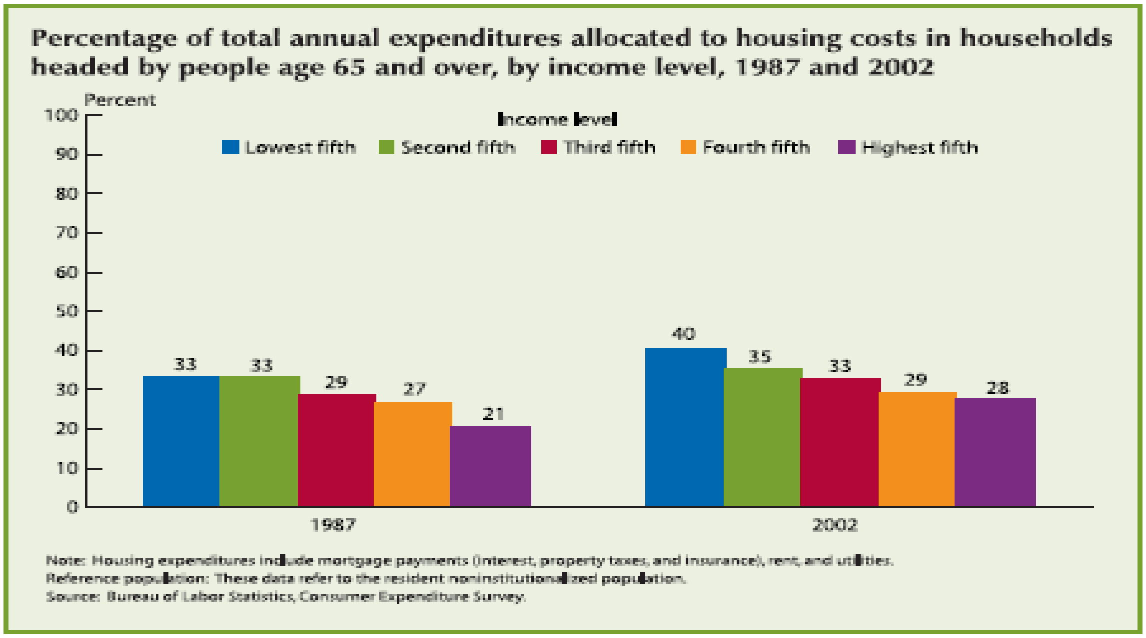


Figure 6. Annual expenditures allocated to housing costs, age 65 and over, 1987 and 2002

1.1.2.2 The Elderly Population in Allegheny County and Pittsburgh

The states with the highest proportions of people age 65 and older are Florida (with 17.6 percent), Pennsylvania (with 15.6 percent), and West Virginia (with 15.3 percent). As the state with the second highest concentration of older residents, potential problems associated with an aging population are of particular concern in Pennsylvania (US Census Bureau, 2006). With regard to counties in Pennsylvania, Allegheny County has one of the highest concentrations of people age 65 and over. In the 1990s, older individuals constituted 16.4 percent of the Allegheny County population (Musa et al., 2003). In a 2004 report, age 60 and over individuals constituted 22 percent of the Allegheny County population, which is the highest in Pennsylvania and the third highest in the nation. Between the 1990 and 2000 Censuses, the greatest increase was in the 85 and older population, a 36.5 percent increase (Onorato, Flynn, Cherna, Morrison, & Denova, 2004).

The Allegheny County Area Agency on Aging (ACAAA) conducted a needs assessment process of elderly Allegheny County residents using multiple avenues of information gathering from 2002 through early 2004. The following needs were among those identified by the needs assessment (Onorato et al., 2004):

- Improved access to information about available services, including awareness of services, access points, technology needs (automated telephone systems, web sites), and proactivity with regard to obtaining services
- Contact with homebound elderly, including identifying isolated individuals, establishing contact and building trust with high risk individuals, and creating formal systems to assure regular contact
- Improved home maintenance services, including securing and paying for timely and reliable services, maintaining safety and livability in the home, and provision of day-to-day upkeep services.

In *The State of Aging and Health in Pittsburgh and Allegheny County*, Musa, et al. (2003), describe marital status and living arrangements of the age 65 and over population in Allegheny County. When compared with proportions from Pennsylvania and the United States, it should be noted that individuals in Allegheny County are more likely to live alone, thus having less spousal support than the population at large. The proportions are even more striking for the urban population in Pittsburgh. Table 1 summarizes these descriptors.

Table 1. Marital status and living arrangements, individuals 65 and older

Descriptor	Pittsburgh	Allegheny County	Pennsylvania	United States
Married older people	44.3%	52.7%	54.9%	56.0%
Widowed older people	38.8%	35.3%	33.9%	32.4%
Older people living alone	36.7%	31.4%	29.3%	28.2%

Source: The State of Aging and Health in Pittsburgh and Allegheny County, 2003 (Musa et al., 2003)

The health status of older people in Allegheny County is worse than national figures, but that is likely a function of the large proportion of the 85 and older population. In Pittsburgh, 44 percent of individuals age 65 and older report at least one disability, compared to a national proportion of 41.9 percent. As with the national population, individuals who live alone and those who lack social support have worse health (Onorato et al., 2004). Almost a quarter of older people in Allegheny are not able to do heavy housework.

1.1.3 Older Americans' Utilization of Health Services

One of the initial intents of the on-site nursing service initially implemented was to decrease the hospitalization rates for high rise residents by monitoring and early detection of hypertension, heart rhythm irregularities, and other symptomatic medical problems. In 1992, the hospitalization rate for Medicare enrollees was 306 per 1,000. By 2001, the rate had increased to 365 per 1,000. During the same time period, the average length of stay decreased from eight to six days (Federal Interagency Forum on Aging-Related Statistics, 2004). Further, skilled nursing facility admissions increased from 28 to 69 per 1,000.

The American Association of Homes and Services for the Aging (AAHSA) describes several levels of aging services in the United States (Table 2).

Table 2. Aging services in the United States

Type of Facility	# of Facilities in US	Selected Cost Information
Nursing homes	18,000	Average daily rate for a private room is $203, or $74,095 annually
Licensed assisted living residences	32,886	Average private pay monthly base rate is $2,905, or $34,860 yearly
Licensed continuing care retirement communities (CCRCs)	2,240	Monthly expenses per resident for a non-profit CCRC is $2,672, or $32,064 annually
Senior housing residences	21,203	
Affordable senior housing sponsors	6,000	
Adult day centers	3,500	Average daily cost is $56
Home health agencies	7,530	

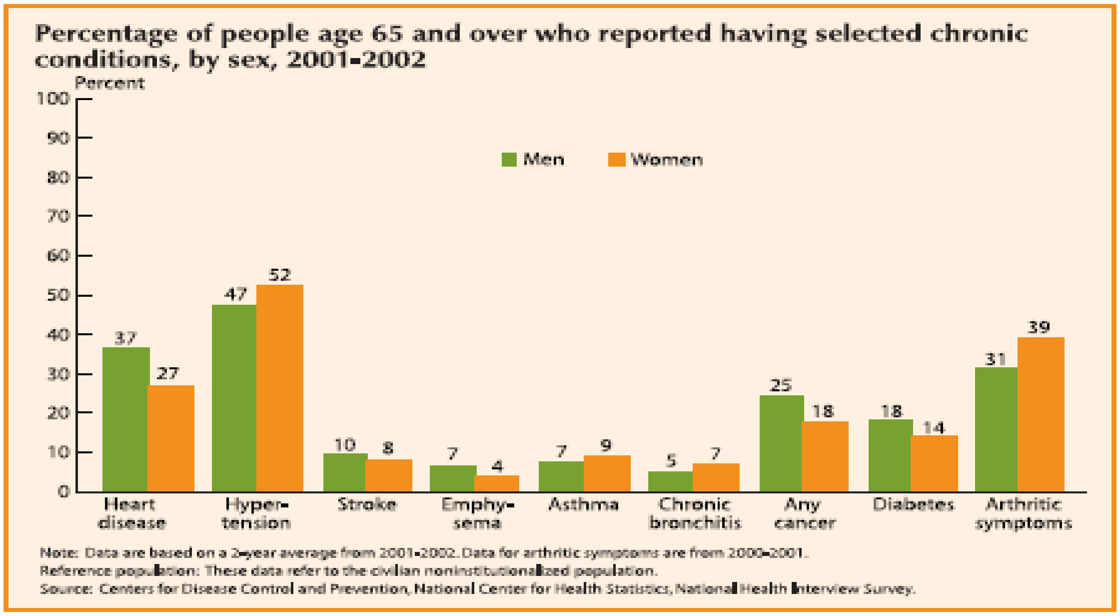
(American Association of Homes and Services for the Aging, 2006)

According to AAHSA, there will be 12 million older Americans in need of long-term care by the year 2020. At age 65, a person has at least a 40 percent lifetime risk of entering a nursing home (American Association of Homes and Services for the Aging, 2006). The National Center for Health Statistics (NCHS) reports that 25.5 percent of noninstitutionalized individuals age 65 and over are in only fair or poor health (2006).

The NCHS also reports that 35 percent of noninstitutionalized individuals age 65 and over have at least one chronic medical condition that limits their activity (2006). According to the US Administration on Aging (AoA) FY 2003 Annual Report, 80 percent of older adults have a chronic medical condition, not all of which limit their activity. The most common chronic conditions and the proportion of older Americans affected are (Administration on Aging, 2003):

- Arthritis – 48%
- Hypertension – 37%
- Hearing Impairments – 32%
- Heart Disease – 15%
- Diabetes – 10%
- Major Depression – 5-10%

Women suffer from higher prevalence of hypertension and arthritis than men, but men report higher levels of heart disease and diabetes. Figure 7 illustrates the relative reporting of several chronic conditions for men and women. Prevalence of some chronic conditions appears to be increasing. For example, from 1998 to 2002, the percentage of individuals reporting hypertension increased from 47 to 50. In the same time period, the percentage of individuals reporting diabetes rose from 13 to 16 (Federal Interagency Forum on Aging-Related Statistics, 2004).


Percentage of people age 65 and over who reported having selected chronic conditions, by sex, 2001–2002

Note: Data are based on a 2-year average from 2001–2002. Data for arthritic symptoms are from 2000–2001.
Reference population: These data refer to the civilian noninstitutionalized population.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey.

Figure 7. Reported chronic conditions, age 65 and over, 2001-2

According to the Federal Interagency Forum on Aging-Related Statistics (2004), older Americans increased their physician visits and consultations between 1992 (11,359 visits per 1,000 Medicare enrollees) and 2001 (13,685 visits per 1,000 Medicare enrollees). However, the National Center for Health Statistics (2006) reports that 3.4 percent of noninstitutionalized individuals age 65-74 and 2.9 percent of noninstitutionalized individuals age 75 and over do not have a usual place of care for health services.

The Federal Interagency Forum on Aging-Related Statistics (2004) reports on community housing with available services, which include meal preparation, laundry and cleaning services, and help with medications. As of 2002, two percent of the Medicare population age 65 and over lived in community housing with at least one service available. Interestingly, five percent lived in long term care facilities. The percentages increases with age, e.g., seven percent of individuals age 85 and over live in community housing with at least one service and 19 percent lived in long term care facilities. The services available are described in Table 3. However, it should be noted that the percentages reflect the reported availability of services, not the actual utilization of services. Also of note is that 53 percent of residents report that fees are charged for at least some of the services.

Table 3. Availability of services in community housing for the elderly

Service	Percentage of residents reporting access to service
Meal preparation	86%
Housekeeping/Cleaning	80%
Laundry	68%
Help with medication	47%

It has been shown that increased age is associated with poorer functional status (Wensing, Vingerhoets, & Grol, 2001). The presence of functional limitations increases from regular community to community housing with services to long term care facilities. However, while the majority of older individuals live in regular communities, more live in long term care than in community housing with services. This observation would seem to contradict the idea of a continuum of care, where increasing services are required as functional limitation increases (or function decreases) and the number of individuals requiring great care decreases.

1.2 PURPOSE OF THE STUDY

This study will investigate the perceptions of people age 60 and older living in congregate urban low income housing, with particular attention to their view of their community and their health-seeking behavior. It is an exploration of the perceptions of the relevant population and their utilization of available health services with a systematic evaluation of the appropriateness of an on-site nursing initiative at two of the sites. Healthcare utilization includes clinical intervention, prevention and health promotion activities, and interpersonal interaction.

Objectives include:

1) To describe the world view of elderly residents in subsidized housing communities with respect to their insights about living in congregate independent housing and about their communities
2) To determine the perceptions of elderly residents of subsidized housing with respect to their self-reported health status and their perceptions about healthcare utilization
3) To explore associations between perceptions and actual utilization of both conventional healthcare delivery and on-site nursing
4) To discover associations among residents' perceptions and health-related quality of life
5) To ascertain residents' preferences with regard to on-site healthcare provision

The elderly face healthcare challenges that stem from, among other things, transportation barriers, trust issues, lack of participation in prevention and health promotion activities, and lack of awareness of health threats and their amelioration. Elderly residents of subsidized housing also may face isolation and a decreasing scope of universe. This research will describe how members of this population perceive their community, healthcare patterns, and quality of life and whether the provision of on-site health services effectively meets their needs. If members of the growing elderly population are to remain independent as long as possible, more responsive means of healthcare delivery must be developed. This research will explore an innovative pattern of on-site healthcare delivery and its function and utility within a clearly defined community. The findings have implications for access to and utilization of healthcare for the elderly population.

A subsidiary component of this research will explore the process of conducting a utilization-focused evaluation of a community-based health service. According to Patton (1997), “The real world doesn’t operate under textbook conditions. Effective evaluators learn to adapt to changing conditions. This requires situational responsiveness and strategic, contingency thinking…” The healthcare delivery protocol addressed in this project has been challenged by exogenous changes, most specifically related to political dynamics between the healthcare provider and the county housing authority (ACHA). Yet there remains the need to employ appropriate and useful evaluation to determine program effectiveness and to provide guidelines for enhancing service delivery processes.

1.3 SIGNIFICANCE OF THE STUDY

This study has implications in several domains. Public health professionals tend to look at the populations they serve in a more holistic way than do traditional medical practitioners. It is the more inclusive view that will inform the development and institution of housing and health services that are more responsive to the needs of the population. For health care providers, study findings are expected to convey a range of preferences older individuals may have. Health programs often are instituted without such input from the populations they serve. Awareness of the variety of perspectives, enhanced by the illustration of the views and utilization of a particular service, will enable health care providers to recognize the individuality of the people they serve. It also is important to consider the significance of the study for the older population, now and in coming years. Awareness of their satisfaction with living arrangements, quality of life, and health seeking behavior may contribute to the institution of a broader range of options.

The US Census Bureau predicts rapid growth in the size of the elderly population in the next several years (He, Sengupta, Velkoff, & DeBarros, 2005). This growth will be due to the large Baby Boomer cohort reaching retirement age as well as changes in health maintenance and care that will increase longevity. (NB: It will be interesting to see if recent predictions to the contrary related to childhood obesity will change the longevity projections in the longer run.) Thus, it is important to examine living arrangements and supporting health services that may allow the older population to live in the community as long as possible. Further, a variety of available services should better address the needs of an increasingly diverse older population.

The Federal Interagency Forum on Aging-Related Statistics (2004) notes that 53 percent of individuals living in community housing if services were available could continue to live there if they needed "substantial care," although "substantial care" was not defined. The disproportionate utilization of traditional institution-based health services may be in part attributed to lack of alternate, and possibly more appropriate, nontraditional services (Moneyham & Scott, 1997). With the increasing number of elderly people, nontraditional (in the United States) services, such as on-site nursing, associated with residential arrangements should be investigated. Such services may help to alleviate financial demands on a stressed Medicare system. For example, in 2003, the number of visits to hospital emergency departments by persons age 65 and over was 17.5 million (McCaig & Burt, 2005). A smaller number of persons age 65 and over, 13.1 million, visited hospital outpatient departments (Middleton & Hing, 2005). Also in 2003, the number of visits to physician offices by persons age 65 and over was 227.5 million (Hing, Cherry, & Woodwell, 2005). This study also will examine whether individuals in this age group had difficulty getting to their physicians' offices and if so, whether an on-site nursing service is a viable option in monitoring their health.

An interesting hypothesis noted by Gill, et al., (1999) is that disability, rather than being a personal characteristic, is a construct defined by the gap between a person's functional capacity and the demands placed upon them by their environments. Thus, independence may be prolonged by appropriate adaptations to the residential environment. An initial supposition in planning this study was that on-site nursing was an example of such an adaptation with particular relevance for health-seeking behavior and early detection and treatment of medical problems.

The ACAAA reports that 65 percent of the homes of the elderly in Allegheny County were built over 40 years ago (Onorato et al., 2004). Gill, et al. (1999), noted that environmental hazards, while common in the homes of community-living elderly individuals, were less frequent in age-restricted housing. For these reasons, such housing may be an important consideration as part of a continuum of options for the elderly.

In addition to the size of the population, several social and economic developments of note are projected. It is likely that future older Americans will be better educated than the current older population. Higher education levels are associated with better health and socio-economic levels. It is hoped that increased access to health information and programs will contribute to improved health indicators. Women will be more likely to have been employed, increasing the proportion of females having their own retirement income. However, the persisting inequity in median income will likely translate into lower median retirement income levels for women. Another projection is that continuing research in common chronic diseases, as well as in causes and treatment for disabilities, will have biomedical implications for aging

Americans. The US Census Bureau predicts that such research may produce longer life through better prevention and treatment (He et al., 2005).

The significance of this study in relation to these factors is centered in the fact that there will be a great need for housing for the older population in the coming years. Older people will be healthier, thus not "ready" for long term or skilled care in the same proportion as they are now. The notion of having a choice about living arrangements is congruent with ethical concepts of autonomy and self-determination. However, environmental safety and health needs for this population may necessitate supportive services. This study investigates how people currently feel about their senior communities and their utilization of one particular health service, on-site nursing.

1.4 RESEARCH QUESTIONS

1) How do elderly residents in subsidized housing communities perceive their communities, the on-site healthcare services, their health and well-being, and the relationship between those domains?
2) What are the extent and patterns of healthcare utilization in this population?
3) Are certain health perceptions associated with patterns in healthcare utilization? What is the nature of the association and the patterns?
4) How would the residents' health-related quality of life be characterized?

2.0 CHAPTER TWO: REVIEW OF THE LITERATURE

2.1 OVERVIEW

The literature review for this study (short title, “the Senior Subsidized Housing Study”) encompasses writings in the two broad domains of the study – community on-site health delivery and the world view of low-income urban elderly individuals in subsidized housing. With regard to community on-site health delivery, literature was examined in the areas of health care utilization by elderly individuals, self-assessed health status, the relationship of health to choice of living arrangements, and access to care by this population. An examination of concepts related to community and community health partnerships follows. The discussion then focuses on actual community-based health delivery, including examination of nurse-led programs, as in the Senior Subsidized Housing Study. Not all concepts discussed can be clearly “assigned” to one domain or the other. For example, the discussion moves to address issues related to trust in the health care provider and the system, which certainly can be viewed both in terms of health care provision and perceptions of people receiving care. The next topic, examination of health-related quality of life and its subtopic area of social support, also draws meaning and implication from both domains. This leads us to then consider issues related to senior housing and relevant safety concerns. The challenge of organizing this review of the literature lies in the complex and intricate associations among these topics. For example, the human experience of barriers to access cannot be totally separated from health-related quality of life and community-based health delivery cannot be untangled from senior housing issues. For the sake of presenting the information, this multidimensional conceptual world must be presented in a linear way, but awareness of the interwoven nature of the topics is encouraged.

In preparing this review, a vast body of literature was examined. It was rare to find literature that addressed topics congruent with those in the Senior Subsidized Housing Study. For example, access related to access to health care by minorities is common, and there is a smaller but substantial body of literature on access by cognitively or physically impaired elderly people, but discussion related to access and the well elderly is scarce. Another example is that in examining senior housing, much of the discourse is focused on adaptive housing and assisted living, but much more rarely on senior housing for elderly individuals who do not require more formal in-home health services. Thus, the literature was reviewed with the intent of drawing on concepts that, while not totally congruent to the Senior Subsidized Housing Study concepts, can still be viewed as applicable. Similarly, many articles on issues in the elderly population emanate from other countries, where there are extremely different health care delivery systems and cultural perspectives (and apparently more commitment to addressing the needs of this population!). As with the not-quite-congruent topic areas, this literature was reviewed for concepts that could be relevant in this country and for the population in the Senior Subsidized Housing Study.

2.2 HEALTH CARE UTILIZATION BY THE ELDERLY

2.2.1 Service Utilization

While utilization was discussed in Chapter I (Statement of the Problem: Older Americans' Utilization of Health Services), we will revisit it briefly here. In 2003, approximately 906 million visits were made to physician's offices in the United States or about 3.2 visits per person across age groups. The most visits were made by infants less than one year old and adults greater than 65 at 6.6 visits per person in each group, which is almost double the average, in each of those groups ("QuickStats: Annual rate of visits per person to physician offices, by patient age group," 2005). A similar disproportionate use of inpatient services was shown in the 2002 National Hospital Discharge Survey. During the past three decades, an increasing proportion of hospital care has been for people aged 65 and over. In 2003, while 12 percent of Americans were 65 years of age and older, this group accounted for 45 percent of days of hospital care and 38 percent of hospital discharges. According to the Centers for Disease Control and Prevention, and illustrated in Figure 8, older Americans, especially those age 75 and over, accounted for the greatest number of "bed days" – the days spent as an overnight patient in a hospital or days on which a person was kept in bed for more than half a day because of illness or injury ("QuickStats: Average number of bed days during the preceding 12 months among persons aged ≥18 years, by age group - United States, 2003," 2005).

Women use primary care services more than men. Women are more likely to have visited a physician within the past year than men and are less likely to be hospitalized, suggesting a relationship between inadequate primary care and sentinel event hospitalizations. Women also participated in preventive care and scheduled follow-up visits more frequently than men (Franks, Clancy, & Naumburg, 1995). Because of the predominance of women in senior subsidized housing sites, it would seem logical that primary health care programs would be well received at these sites.

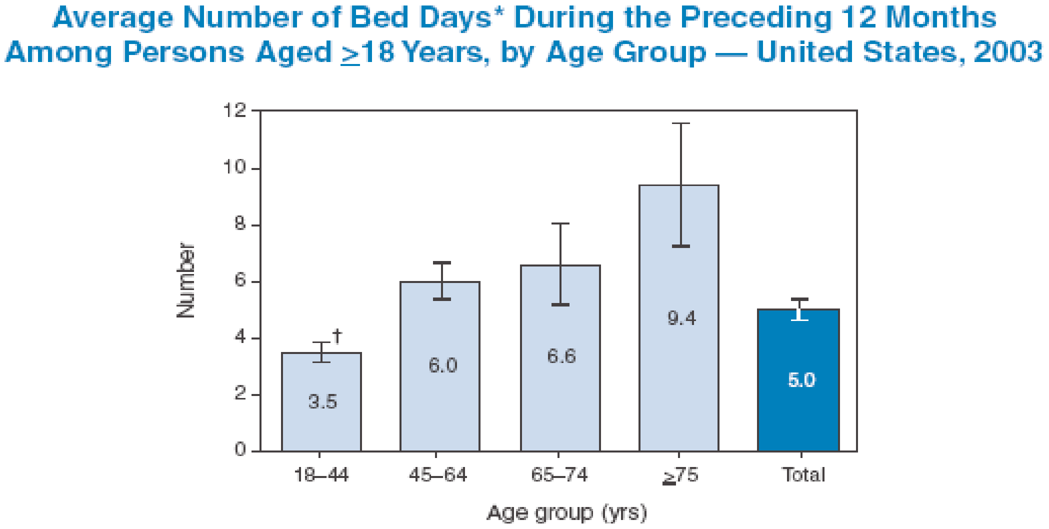


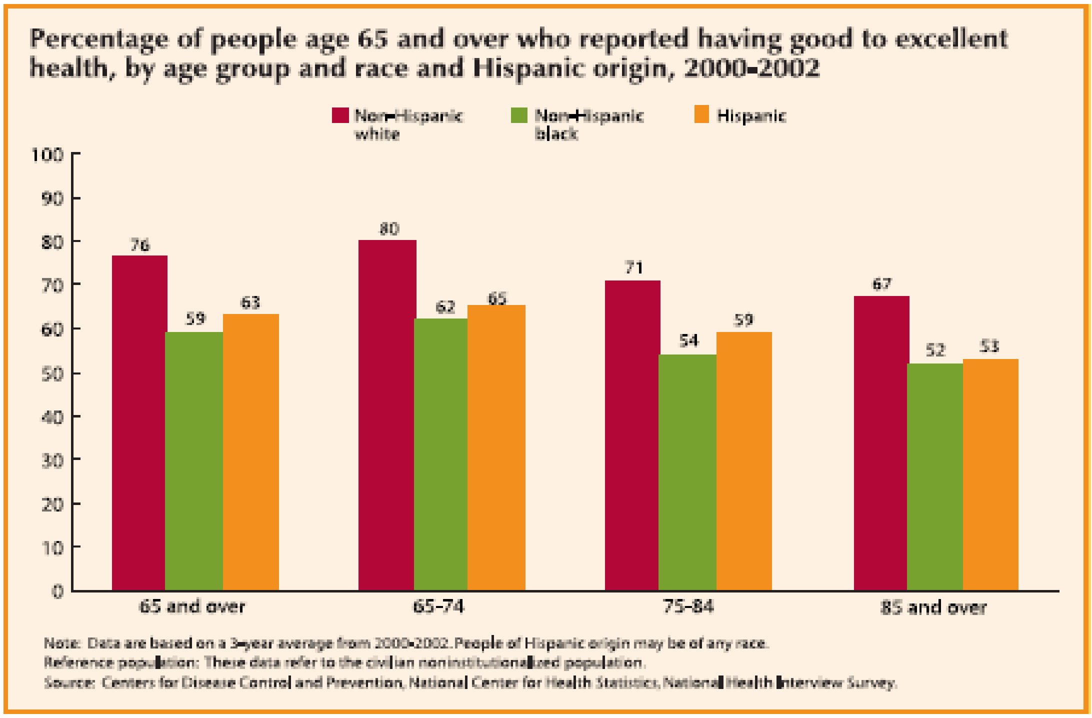
Figure 8. Number of hospital bed days for Americans
(Source: Morbidity and Mortality Weekly, 54(32), August 19, 2005, p. 803.)

Older adults living in rural areas have a greater number of health complaints than their urban counterparts. However, rural elderly people do not use significantly more services and do not report more unmet health needs than elderly urban residents (D. Clark & Dellasega, 1998). Also, chronic conditions, more common among older people, have a negative impact on their independence and function (Gallagher & Truglio-Londrigan, 2004). One study showed that when older adults believed that they could lose functional independence, they were more likely to participate in a positive health behavior such as physical activity (Mihalko, Wickley, & Sharpe, 2006). In that study, a brief multicomponent cognitive-behavioral intervention increased interest in a physical activity program.

A key intention of the modern health care provision network is to delay older adults' movement from independence to assisted care. Cheek, et al., suggests that entry into the system be viewed not as an event, but rather as a process. In that way, multiple points of intervention are possible (Cheek, Ballantyne, Roder-Allen, & Jones, 2005). Several factors can facilitate this approach: training of health professionals to foster independence in their clients, development of and access to information about services and living arrangements, avoiding seeing acute medical events as entries into acute care (it is not a one-way street), and optimizing continuity of care in the community.

2.2.2 Self-Assessed Health Status

People's self-assessed health status is important to consider because such perceptions predict future health and serve as proxy measures for the perceived symptom burden of acute and chronic conditions (Benyamini, Leventhal, & Leventhal, 2003; "Measuring Healthy Days: Population assessment of health-related quality of life," 2000). Functional impairment has been associated with lower self-assessed health status (Mozes, Maor, & Shmueli, 1999). In the older population, self-assessed health status rated as good, very good, and excellent is associated with lower overall risk of mortality. In 2002, 73 percent of people age 65 and older rated their health as good to excellent. It should be noted however, that this percentage is inversely related to age, i.e., as age increases, the percentage of people reporting good to excellent health decreases. But even in the oldest-old age group (85 and over, more than half of individuals of all races report good to excellent health (Federal Interagency Forum on Aging-Related Statistics, 2004). Figure 9 presents a graphic representation of this information.


Percentage of people age 65 and over who reported having good to excellent health, by age group and race and Hispanic origin, 2000-2002

Note: Data are based on a 3-year average from 2000-2002. People of Hispanic origin may be of any race.
Reference population: These data refer to the civilian noninstitutionalized population.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey.

Figure 9. Self-assessed status in the elderly population

When interpreting self-assessed health status in older individuals, it is important to do so in the context of the person's age, gender, and health. Within a two-year period, the majority of older people are likely to be in the same health state, although a considerable proportion changed in both directions. Men are more likely to transition to the ends of the spectrum, i.e., excellent health status or death (Paula Diehr & Patrick, 2001). Also, people with serious conditions or symptoms tended to rate their health as poor and people with only minor symptoms rated their health as very good, i.e., in the presence of significant ill health, people assessed their health from a negative frame of reference, and people without significant health problems had a positive frame of reference (Benyamini et al., 2003).

Perception disability also should be considered in the context of self-assessed health status. In a study of adults aged 72 and older, termination of driving, receiving home health services, and anxiety about health contributed to perception as being disabled. Having a strong social network was associated with lower perception of being disabled (Kelley-Moore, Schumacher, Kahana, & Kahana, 2006). It can be seen that this perception has roots in physical, social, and emotional domains.

2.3 ACCESS TO HEALTH CARE FOR ELDERLY ADULTS

2.3.1 General Issues in Access

The issue of access has been a source of public health discourse for decades. Considering this issue is consistent with the second overarching goal of Healthy People 2010, "Eliminate health disparities," (Healthy People 2010, 2005). Access to health care can be considered along several dimensions: availability, accessibility, acceptability, and achieved care (Wallace, Villa, Enriquez-Haass, & Mendez, 2001). Other views of access to health care present different, although congruent, dimensions – having a usual source of health care, health insurance coverage, change in usual source care (indicator of lack of continuity in care), distance to care (Corbie-Smith, Thomas, Williams, & Moody-Ayers, 1999), and built environment (Does the built environment influence physical activity? Examining the evidence, 2005).

A 1975 study from the University of Chicago introduced the symptoms-response ratio as a social indicator of access to health care. This model compares the number of visits to health care providers, in response to symptoms that actually occur, to the number of visits that are appropriate for the symptoms, as ruled by a panel of physicians (Taylor, Aday, & Anderson, 1975). Syme (2004) points to the need to instill a sense of empowerment, or "control of destiny" as a first step in addressing inequalities rooted in social class. Yoo, et al., also emphasize the importance of empowering community members and suggest mutual clarification of factors that both reinforce and challenge facilitation of community empowerment. They offer a six-step process to facilitate community empowerment: entrée into the community, identification of issues and community leaders, group agreement of issue priority, development of strategy based on model appropriate for the community, implementation of action plan with group debriefing after each step, and informed transition of responsibility to community leaders (Yoo et al., 2004).

In a 1996 Agency for Health Care Policy and Research study, almost 18 percent of Americans had no usual source of health care and approximately 12 percent had changed their usual source of care within the last year. Nearly 12 percent of families had difficulty in obtaining health care or reported instances where family members did not receive needed care. Hispanics and the uninsured were less likely to have a usual source of health care and tended to experience more barriers in seeking care (Weinick, Zuvekas, & Drilea, 1997). Males were significantly more likely than females to lack a usual source of health care. Individuals who perceived their health status to be poor were more likely to have a usual source of health care, but even so, over 10 percent do not (Weinick et al., 1997). It is important to look at access issues for other segments of the population as well to become aware of group-specific needs.

According to Weinick, et al. (1997), individuals with a usual source of health care are more likely to receive preventative care and also are more likely to receive treatment for hypertension. Compared to adults age 18-64, young children and elderly adults (65 and older) are more likely to have a usual source of health care, although this is by no means universal – 9.2 percent of individuals age 65 and over do not have a usual source of care. Greater likelihood of coverage in these two age groups is logical because state children's health insurance programs and Medicare provide coverage for these populations. Weinick also concluded that among families who had recently changed usual source of health care, the most common reason, almost 40 percent of the time, was due to reasons related to distance to the care site. Thus, a care site located in the individual's community would seem a reasonable solution to this problem.

Inability to afford health care is a common reason for lack of access to care (Weinick et al., 1997). A 1994 study showed that disadvantaged patients are more likely to lack a regular source of care, especially if they lack insurance and lack transportation. Further, these same factors, plus less than high school education, are predictors of delayed medical care (Rask, Williams, Parker, & McNagny, 1994). Alarmingly, Sinay (2002) suggests that health plans may intentionally limit access for groups with low income and poor health, including those aged 80 and older, because of high use of services.

Caution must be taken to not oversimplify issues related to access. Donabedian (1973) notes that access should be assessed by people's use of a service, not just by the presence of a health care institution. Taking this concept a step further, Diehr, et al., pointed out that the effectiveness of programs intended to improve access of low income individuals to health care often is measured by program utilization rather than by the more important outcome of improved health. In fact, Diehr's study showed no improvement in health resulting from a program in which low income individuals were provided with fully prepaid health care in their community (PK Diehr, Richardson, Shortell, & LoGerfo, 1979). However, it should be noted that measurement was undertaken after only one year of enrollment in the program.

The Prevention Institute in Oakland, California, presents an interesting approach to addressing health disparities and access at the community level. The Institute developed a "toolkit for health and resilience in vulnerable environments" (THRIVE), which is an assessment tool intended to enable communities to augment factors contributing to improved health outcomes and reduced disparities. Davis, Cook, and Cohen (2005) note that “standards of population health are overwhelmingly affected not so much by medical care as by the social and economic circumstances in which people live and work.” The THRIVE approach was developed in the context of racial disparities, but the principles are relevant for disparities related to age and socio-economic level as well. Table 4 illustrates the THRIVE factors that may be applicable for the urban low income aging population in this study.

Table 4. THRIVE factors relevant for communities with senior subsidized high rises

Cluster	Factors
Built Environment Factors	Safe places for recreational activity Obtainable safe, reasonably priced, and healthy food Safe affordable housing Accessible and safe transportation Absence of environmental pollutants
Social Capital Factors	Trust Cohesion Willingness to take action to benefit the community Community engagement Behavior norms
Service and Institution Factors	Local government Health care Social services Public safety Community-based organizations and coalitions Faith-based organizations Arts institutions
Structural Factors	Racial relations Economic opportunities Marketing practices

The implications of the THRIVE approach for the Senior Subsidized Housing Study revolve around the clarification of four clusters of community factors through which disparities can be reduced. The drawback of the THRIVE approach is that while it helps communities to become aware of factors that contribute to health and to identify problem areas in the community, it does not in and of itself dictate ways to address weaknesses. It is up to the community to develop interventions and to provide the commitment and resources needed for improvement.

2.3.2 Access and Research

The question of access is reflected in problems related to inclusion in research. In the 1990s, questions began to be raised in the research community about the relative exclusion of certain groups as study subjects (Cotton, 1990). It should be noted, however, that Kaluzny et al., refuted the belief that minorities were unwilling to participate in research, attributing the disparity to difficulties in access (Kaluzny, Brawley, Garson-Angert, & al., 1993). Most research subjects were middle-aged white men, excluding groups generally seen as experiencing problems related to access – poor and minorities.

This view also challenges investigators to consider inclusion of women, children, and elderly individuals in research whenever possible. The movement to broaden inclusion in scientific study grew out of drug studies where group differences in drug responses, metabolism, and risk profiles posed a risk for patients who were from groups not adequately represented in drug trials. However, group inclusion in public health and social-behavioral studies is equally important. Without it, the ethnocentric (and “age-centric”) views of the establishment will be assumed, perhaps erroneously, to be appropriate for all groups. Currently, human subjects review processes encourage researchers to reflect the population composition of the site or domain where the research is being conducted.

2.3.3 Access Issues in the Elderly Population

Consideration of issues related to access goes hand in hand with the concept of health care disparities. It should be noted that well documented racial and socioeconomic health disparities increase in older populations. For example, in older age groups, minorities and socioeconomically disadvantaged groups are three times more likely to experience disability than other groups (Schoeni, Martin, Andreski, & Freedman, 2005). The Schoeni, et al., study does not account for the influence of environment on a person's level of disability or for the effect of earlier life experiences. The investigators recommend a combined approach to address age disparities, including long term medical, behavioral, and environmental interventions. Identifying disparities is only a first step – socioeconomic factors are interwoven with issues of disparity and barriers to access (Bhopal, 2002).

In a 1996 Seattle study of adults age 62 and older who resided in subsidized public housing, approximately half indicated that they had difficulty accessing health care and sixteen percent said that they had been denied care (Malmgren, Martin, & Nicola, 1996). Problems accessing care were associated with lower monthly living expenses and with lack of transportation. Barriers to access may be in the areas of a) financial problems, e.g., high co-payments; b) difficulties related to the provider, e.g., referral problems; and c) personal challenges, e.g., lack of health care provider cultural sensitivity (Sinay, 2002).

The National Center for Health Statistics (NCHS) investigates access to health care for elderly adults, 65 years of age and over in the United States by examining the following factors:

- regular source of care
- place of care
- main reason for no usual source of care

- unmet health care needs
- utilization of clinical and preventive services

According to NCHS, of elderly persons with a regular source of care, 91 percent describe their usual pace of care as a private physician. Only one percent indicated that the hospital emergency room was their usual source of care. For individuals having no usual source of care, the most common reason (47 percent) was "Do not need doctor." Twenty-three percent of this group indicated lack of availability, knowledge, or inconvenience of care (*National Center for Health Statistics*, 2005).

A Medicare study showed that elderly individuals in HMOs have better access to health care than those in fee-for-service plans. However, racial/ethnic disparities persist, especially in fee-for service delivery systems (Wallace et al., 2001). This study did not account for selection bias in terms of the insurance plan chosen, i.e., whether differences were due to the insurance plans or to unmeasured characteristics of the subjects that informed their choices.

2.4 COMMUNITY PARTNERSHIPS

2.4.1 Community

The concept of 'community' often is difficult to define. The geographic aspect of the definition is the simplest approach, but more elusive concepts must be considered. Membership in a group, e.g., a health plan, or a common experience, e.g., having a specified medical condition, may be the delineating feature. However 'community' is characterized, the common interest or need of its members is of critical relevance. Kang (1995) points out that "a community exists when individuals share a locale and engage in patterned social interaction, share common identity, participate in interdependent activity, and work toward shared goals and collective action."

2.4.2 Facilitating Collaborative Community Partnerships

Roussos and Fawcett (2000) provide a comprehensive review of the principles of building and maintaining collaborative partnerships, which are a valuable strategy for improving community health. They discuss several challenges to successful implementation of community partnerships: 1) engaging the community members who are most in need of the service; 2) collaborating with community leaders from other disciplines; 3) sharing "risks, resources, and responsibilities;" 4) dealing with internal and external conflict; and 5) maintaining resources and continuity of leadership long enough to be successful.

Several types of linkages are possible in community partnerships. But effective collaboration should be the goal. A continuum of linkages is as follows: networking, cooperation or alliance, coordination or partnership, coalition, and collaboration (Hogue, 1994). For more detail on this continuum, refer to Appendix A: *Chandler Center for Community Leadership Continuum of Collaboration: Range of Choices of Community Based Linkages*.

A community-based coalition has been defined as "a group of individuals representing diverse organizations, factions, or constituencies within the community who agree to work together to achieve a common goal" (Butterfoss, Goodman, & Wandersman, 1996). Butterfoss, et al., suggests that choosing capable leaders is a key consideration in implementing health programs. Additional recommendations include: positive organizational climate, participatory decision-making, promoting networks extending beyond the coalition committee, maximization of the benefits of membership to increase satisfaction, and active committee member participation beyond mere meeting attendance.

2.4.3 Community-Academic Partnerships

Levine, et al. (1994), propose that one method to alleviate disparity in both service provision and research participation is through community-academic health center partnerships to provide care for underserved populations. This is feasible because underserved populations often are found in the same geographic locations as academic health centers, i.e., urban/inner city areas. Levine notes that the success of these partnerships is enhanced by the establishment of novel forms of health care provision that are decentralized and that provide health promotion and prevention services based on the needs of the specific population. Another example of community-academic health center partnership is Connecticut's Partners in Caring Model, in which senior nursing students, under supervision of an onsite clinical instructor, provide health maintenance services for elderly individuals (Bernal, Shellman, & Reid, 2004). The authors note several essential principles to this model that are applicable to other community partnerships:

- "Develop partnerships based on a solid personal and professional relationship
- Entry into new communities has to be guided by sound principles of fieldwork
- There must be continuous opened communications and mutual planning
- The mission and goals of the partnership have to be clear and based on a strong mutual commitment to the population served
- Partners should be committed to assimilating changes while keeping the core values of the program intact
- There needs to be a commitment to evaluation

- The continuation of the partnership requires persistence and perseverance by all parties involved"

A key first step in developing a community-academic partnership is to establish an open dialogue. In 1999 in Dayton, Ohio, this dialogue took an interesting form: a community forum entitled "The History of Health in Dayton" (Lemkau, Ahmed, & Cauley, 2000). Lemkau, et al., also discussed reciprocal learning as a fundamental concept in such partnerships. Collaboration is essential. Collaboration is characterized by a team approach, nonhierarchical interaction, and working toward common goals (Henneman, Lee, & Cohen, 1995). Involvement of individuals with in-depth knowledge of the community *and* individuals with skills in community partnership processes, research, and evaluation is necessary for effective community partnerships. Katz (2004) makes the following observation: "Here, then, is our shared dilemma – and our shared challenge. Community leaders may be able to make differences they don't know how to measure. And academic researchers may know how to measure differences they don't know how to make! Each of us without the other is like the proverbial sound of one hand clapping."

Barriers to the effectiveness of community-academic partnerships include lack of trust and respect; inequitable distribution of power and control; conflicts associated with differences in perspective, priorities, assumptions, values, beliefs, and language; conflicts over funding; conflicts associated with different emphases on task and process; time-consuming process; and who represents the community and how community is defined. These barriers may be addressed by the following factors: jointly developed operating norms at all levels of planning; identification of common goals and objectives; equality in value of community and academic contributions; democratic leadership; respect for diverse cultural perspectives; presence of community organizer; involvement of support staff/team; researcher role, skills, and competencies; flexibility in research and evaluation processes; history of positive working relationships; identification of key community members of various levels (Israel, Schulz, Parker, & Becker, 1998; Katz, 2004).

2.5 COMMUNITY-BASED CARE FOR THE ELDERLY POPULATION

2.5.1 Community-Oriented Primary Care

The term 'community-oriented primary care' is at one time both widely understood and frustratingly imprecise. Several definitions exist (Abrahamson, 1988; Nutting, Wood, & Connor, 1985; Rhyne, Bogue, & Kukulka, 1998). According to Mullan and Epstein (2002), community-oriented primary care is "a continuous process by which primary care is provided to a defined community on the basis of its assessed health needs through the planned integration of public health practice with the delivery of primary care services." This type of healthcare provision reflects the perception that a healthcare system should responsive to the needs of the community and flexible in its response. It has a responsibility to all members of the community, whether or not they seek care in the system (Epstein, Gofin, Gofin, & Neumark, 2002).

The first documented occurrence of community-based health service delivery was in the 1940s when Sidney and Emily Kark, South African physicians, lived with and provided service for the Zulu people of the South African province of Natal. The Karks implemented surveillance and delivery systems in collaboration with tribal leadership. The model they developed combined public health and primary care practices and has influenced community health interventions around the world. H. Jack Geiger, a medical student who trained with the Karks, was instrumental in developing the neighborhood health center concept in the United States in the 1960s. By 2002, there were over 750 community health centers in this country (Mullan & Epstein, 2002). Another significant milestone in community-based health intervention is the North Karelia, Finland, project, launched in 1972 and intended to address the area's high risk of cardiovascular disease: from 1972 to 1992, deaths from cardiovascular disease declined 55 percent for men and 68 percent for women. Based on the North Karelia model, in the 1970s, the Stanford Three Community Study was initiated in the United States, using media-based intervention targeting the community at large. At the end of this study, community members demonstrated significantly lower levels of cholesterol and saturated fat (Sorensen, Emmons, Hunt, & Johnston, 1998).

Mullan and Epstein (2002) describe a community-oriented primary care process consisting of six components:

1) Community definition
2) Community characterization
3) Prioritization
4) Detailed assessment of selected health problem(s)
5) Intervention
6) Evaluation

They also offer critical recommendations for program administration. The care process should be led by a team consisting of both provider and community representatives. There should be ongoing participation of the community in program decision-making (the extent of which should depend on the nature of the service provided). Although general health care may be provided, one problem at a time should be prioritized so that resources can be focused.

Finally, the process should be continuous and cyclical, addressing relevant and mutually agreed upon priorities in a timely manner. Challenges to actual program implementation include getting community members to attend and arrive on time, preventing individuals from dominating group sessions, providing meeting space large enough to accommodate wheelchairs and other adaptive devices, balancing gender (most older attendees are women), and developing culturally-relevant content (Gerson, Dorsey, Berg, & Rose, 2004).

2.5.2 Evolution of Emphasis: From Treatment to Prevention

In the last several decades, there has been an increasing emphasis on disease prevention and health promotion in health care delivery. This approach necessitates an expansion of health professionals' practice patterns from an individual orientation to a broader community or population interface (Dixon, 1999). An on-site program can combine elements of both approaches. In a review of diet and weight loss studies, Yancey et al., found that interventions were taking place at increasingly more "upstream" levels. To define this concept, the following are listed in increasingly upstream levels: individual, interpersonal, institutional, community, and policy (Yancey et al., 2004). In another study, a preventive occupational therapy program resulted in improved outcomes in health, function, and quality-of-life domains for a group of independent individuals aged 60 and older who lived in senior subsidized housing (F. Clark et al., 1997). It seems reasonable that the principles informing the implementation of programs like these extend to other heath promotion issues, including community-based programs for the elderly. Million-Underwood, et al., note that a nursing care provider with immediate access to high risk populations, including community-based health care settings, has a unique opportunity to address the need to reduce cancer mortality through prevention, screening, treatment, and research programs (Million-Underwood, Sanders, & Davis, 1993).

The elderly population has specific needs of with regard to community health outreach. In the current environment of disease prevention and health promotion, older individuals need information about reducing risk factors, screening and early detection, healthy lifestyle, and safe and age-appropriate activities. For individuals with chronic conditions, these needs include self-care of chronic conditions; multiple drug management; education about chronic conditions, treatments, and resources; independence and general self-care; brokering of support services; monitoring of chronic conditions and guidance as to when to seek traditional medical care. Also of importance is the set of needs related to coping with multiple losses – loss of former roles, loss of functional ability, and loss of family and friends (Moneyham & Scott, 1997). New York's Oxford Health Plan has an interesting multidimensional outreach curriculum, which was established according to parameters defined by its members. They include several structured programs: 1) Medication Management, which is intended to educate older adults about the appropriate, compliant, and safe use of prescribed medication; 2) Sleep Well-Feel Well, in which attendees learn about healthy sleep habits and participate in biofeedback-driven relaxation techniques; 3) Healthy Eating, a health promotion program centered on maintaining good nutrition; and 4) Walking Club, an exercise program in which community members attend quarterly meetings to identify places to walk in the neighborhood and set up regular walking outings (Butin & Montgomery, 1997). It is interesting to note that although studies have shown a correlation between mental health and health-related quality of life, most health promotion programs for the elderly have focused on physical rather than mental/emotional interventions (Drewnowski et al., 2003).

In many cases, such as the program being examined in the Senior Subsidized Housing Study, a local hospital may be sponsoring the community-based care. There are mutual benefits to a hospital-sponsored community outreach program: 1) individuals who previously may have experienced isolation can feel connected to a health care system, and 2) benefits for the sponsoring institution include reinforcement of its presence and leadership role in the community, expressing its commitment to the health care needs of the elderly population, and broadening its revenue base (Haworth, 1993).

2.5.3 Challenges to Implementation in the Community

It should be noted that although community-oriented primary care is an increasingly accepted method of service delivery, it is not the prevalent mode of health service provision in the United States. At a more "macro" level, several of its features present barriers to its more widespread implementation. For one thing, its inherent characteristics of ongoing discussion and shared decision-making are not features of traditional paternalistic medical practice. Further, from a financial perspective, community participation requires a commitment of time, energy, and monetary resources that presents a challenge to an already stressed healthcare system. Another financial challenge is the intrinsic seeking out of problems that require additional expenditure of resources to address them rather than seeking "cheaper" avenues of program implementation. From a practical standpoint, in previous decades, practical and specific techniques for implementation of community-oriented primary care have been scarce (Mullan & Epstein, 2002).

Another caveat is that there is a dearth of discussion in the body of community-based care literature that specifically separates effects of the interventions from ongoing traditional individual medical care.

2.5.4 Nurse-Managed Primary Care

A recurring theme in nursing literature is that the concept of caring is central to the profession (Scotto, 2003). Thus, it is reasonable to consider the practices and potential benefits of primary care where the principle intervention is provided by nurses as in the on-site service being examined in the Senior Subsidized Housing Study. Further, there is growing body of literature dedicated to community- or population-based nursing services. Principles of the discipline of community health nursing often are applied to such practices. There are six characteristics of community health nursing: "1) it is a field of nursing, 2) it combines public health with nursing, 3) it is population-focused, 4) it emphasizes wellness, 5) it involves interdisciplinary collaboration, and 6) it promotes clients' responsibility and self-care" (Spradley & Allender, 1996). Dixon (1999) notes that in order to optimize practice in the community setting, the nursing discipline must encourage improvement in interdisciplinary collaboration and community involvement. A good example of a nurse-managed service is one created by Middle Tennessee State University and implemented in a local senior center. Positive features of this program included 1) a high quality professional source of health information channeled through group activities, 2) continuity of care provider, 3) comfort with a familiar care provider, and 4) accessible care in a familiar setting (Gerson et al., 2004).

Nurse-managed centers tend to be in locations that are convenient and accessible for the target populations, which are usually groups whose health care needs are not fully being met in the current delivery system, e.g., the elderly population (Neff, Mahama, Mohar, & Kinion, 2003). A challenge to the implementation of nurse-managed care settings is the difficulty in funding them because services are often not directly reimbursable by third-party payers (Moneyham & Scott, 1997). In some cases, programs have been implemented in which supervised student nurses provide on-site services to the elderly (Kick, 1976; Klinedinst & Klinedinst, 2005; Krout & Pogorzala, 2002). This approach often is referred to as "service learning" (Erickson, 2004). The literature about collaborative (resident and student) on-site programs also has relevance for other health care disciplines, such as the occupational therapy student program conducted at two of the sites in the Senior Subsidized Housing Study.

2.6 TRUST

2.6.1 Trust in the Health Care Provider

Trust, a central component of the physician-patient relationship (Thom & Campbell, 1997), has been defined as "a reassuring feeling of confidence or reliance in the physician or the physician's intent." Various definitions of trust have common themes emphasizing "the optimistic acceptance of a vulnerable situation in which the truster believes the trustee will care for the truster's interests" (Hall, Dugan, Zheng, & Mishra, 2001). Trust includes dimensions related to competency, compassion, maintenance of privacy, reliability, and communication (Pearson & Raeke, 2000). Because changes in the health care system have threatened this trust, it is increasingly important to explore the role of trust not only in the physician-patient relationship, but in the broader dyad of healthcare professional and patient. Awareness of maintained strengths and emerging weakness in provider-patient trust will enhance the relationship. A complicating factor is the distinction between interpersonal trust and social trust, which involves confidence in collective institutions. Gilbert (1998) points out that that a foundation of interpersonal trust is a prerequisite for the more complex forms of trust.

While there is abundant documentation of studies about patient satisfaction, a construct that would seem closely related to trust, there are far fewer empirical data addressing trust in the health care setting. Other instruments measure perceptions about physicians, e.g., Inandi's scale (Inandi, Sahin, & Guraksin, 2002), but do not specifically address trust. An earlier instrument, Rotter's Interpersonal Trust Scale (Rotter, 1967), measures trust in general, but is not specific to the healthcare setting. Anderson and Dedrick recognized the paucity of formal measures of physician-patient interpersonal trust and developed the Trust in Physician Scale, the first validated interview tool to assess the patient's trust in his physician (Anderson & Dedrick, 1990; Pearson & Raeke, 2000). However, it should be noted that the development of this instrument was based on studies conducted with samples consisting only of males. Thus, its generalizability to the elderly population, which has a greater proportion of females, was not established. In a 1999 study, Thom, et al., further validated the Trust in Physician Scale in a population of both male and female general primary care patients in a community setting (Thom, Ribisl, Stewart, & Luke, 1999). They showed a correlation between trust and length of physician relationship as well as between trust and adherence to treatment. Limitations of the 1999 study were that it was undertaken in a single geographic area and that the physician subjects were self-selected.

In 1998, Safran et al., published the Primary Care Assessment Survey (PCAS) (Safran, Kosinski, & Tarlov, 1998). Both the Trust in Physician Scale and the PCAS measure trust over the entire term of the relationship and the PCAS addresses trust within the context of different insurance and managed care situations. Kao et al.'s Patient Trust Scale even more thoroughly assesses trust in today's reimbursement and managed care settings by addressing the impact of physician cost-consciousness and payment method (Kao, Green, Zaslavsky, Koplan, & Cleary, 1998). Kao et al. determined that patients who had a choice of physician, longer relationship with the physician, and trust in their health plan were more likely to have trust in their physicians (Kao, Green, Davis, Koplan, & Cleary, 1998). In a study by Grumbach et al., diminished trust in the primary care physician was associated with difficulty in obtaining referrals (Grumbach, Selby, & Damberg, 1999). Another issue is the relationship of trust to rating of care received. When community-dwelling elderly people in Texas were surveyed, it was found that those who were skeptical about their care, tended to rate that care lower (Borders, Rohrer, Xu, & Smith, 2004).

Another important question related to patient trust is whether trust in the health care provider is associated with improved health outcomes. Safran and Taira, et al. (1998), used the PCAS to investigate this question. They defined essential elements of the primary care relationship: accessibility, continuity, comprehensiveness, integration, clinical intervention, interpersonal treatment, and trust. Although trust was a strong correlate with satisfaction with physician and adherence to treatment (the latter arguably a proxy measure of health status), an independent relationship between trust and health status was not demonstrated. Sinay (2002) suggests that satisfaction with the healthcare provider has important implications for health-related behavior, including treatment compliance and likelihood of changing providers.

Interestingly, while the literature reveals some attention to describing and even measuring trust, little appears to be written about interventions that can be shown to successfully improve trust in the physician-patient relationship. Thom et al., did a study investigating whether a one-day workshop to improve physician skills in building and sustaining patient trust, but after measurement with the Trust in Physician Scale, no significant differences were found (Thom & Campbell, 1997). Dula (1994) provides suggestions for improving trust in the health care system, including understanding of historical foundations of mistrust and reduction of disparities, but this article is a sociological perspective rather than an interventional study.

2.6.2 Trust and the Minority Population

A significant body of literature about the concept of trust addresses issues related to minority perceptions, which involves interpersonal, institutional, and social domains of mistrust. According to Corbie-Smith et al. (1999), African Americans lack trust in doctors, scientists, and the government. Concern has been raised with regard to ethical conduct of practitioners when working with low-income or minority patients/subjects and exploitation of these participants in research. Participants commonly misunderstand the informed consent process and document, viewing it as relinquishing their rights and legally protecting the practitioners. Dula (1994) notes that the Tuskegee syphilis experiments of 1932-1972, in which a government study investigated the effects of untreated syphilis in 400 African American men, are often cited as a basis for mistrust. She also attributes mistrust to disparities in access, even in view of the disproportionate incidence and prevalence of chronic disease among African Americans. Thus, mistrust is a barrier to minority and low-income individuals participating in research. Also, Million-Underwood, et al. (1993), notes a prevailing belief among African Americans that participation in research is only for those with the disease or condition being studied.

2.6.3 Trust in Nurses

Trust has been noted to be a facet of the nurse-patient affiliation (Giordano, 1997). Visiting a nurse rather than a physician for regular care may be more conducive to enhancing trust in the health care dyad. In nursing settings, trust can be examined in two contexts: the work environment and the nurse-patient relationship (Johns, 1996). The work environment context revolves around nurses' perceptions in the job setting and relates to communication and assumptions about the organization. While this is an important issue, it is not relevant for the Senior Subsidized Housing Study. However, trust in the nurse-patient relationship is more relevant here. It is an important part of nurse-patient interaction, and is associated with patient acceptance of treatment and patient empowerment. While the literature addresses defining the concept of trust in this context and provides different trust-building strategies, there is a scarcity of scientific studies specifically addressing the objective measurement of patient trust of nurses and other non-physician health care providers. Interestingly, there is a scale to measure the converse, nurses' trust of patients (Wallston, Wallston, & Gore, 1973, 1978).

2.6.4 Limitations of Research on Trust

With the public's increasing concerns about the changing health care system, trust in health care providers is an ever more important, yet more fragile, component of the provider-patient relationship. However, there is little written about: 1) empiric measures of trust (with the exceptions noted above); 2) trust in specific nonphysician health care providers and non-insurer institutions; and 3) interventions shown to increase trust. Further, many of the investigations involve specific patient populations, e.g., male Veterans Administration patients, and self-selected subjects. Much of the discourse on this topic is esoteric and abstract, and little addresses trust in health care provider by members of the community-living elderly population in the Senior Subsidized Housing Study.

2.7 QUALITY OF LIFE

2.7.1 Understanding the Concept of Health-Related Quality of Life

With this topic, we address the first overarching goal of *Healthy People 2010*, “Increase quality and years of healthy life” (*Healthy People 2010*, 2005). Quality of life is mentioned frequently in health literature. However, care must be taken to separate discourse that refers to a rather amorphous quality, e.g., unmeasured general satisfaction or well-being, from literature that is focused on a defined and empirically measured construct. For example, in an interesting article noting that physical activity benefits health and quality of life because it reduces the risk for chronic conditions and death (Dishman, 2003), quality of life is part of the title of the article, yet no formal measurement is discussed. The same is true for another article, which discusses spirituality and quality of life (also in the title) (Baker, 2003).

The Senior Subsidized Housing Study addresses the concept of health-related quality of life, which most sources indicate is a multidimensional construct (Drewnowski et al., 2003; Naughton & Shumaker, 2003). It comprises those factors valued by patients, including: “their resultant comfort or sense of well-being; the extent to which they were able to maintain reasonable physical, emotional, and intellectual function; and the degree to which they retain their ability to participate in valued activities within the family, in the workplace, and in the community'' (Wenger & Furberg, 1990). It is obvious from this definition that “quality” is very subjective, is dynamic, and is based on the individual’s own preferences and values. An added perspective is that health-related quality of life is the “value ascribed to a person's life, by the individual or society, as a result of his or her own health, and influences such as personal behavior, medical care, health policy, or larger social forces.” Another definition of health-related quality of life is "those aspects of self-perceived well-being that are related to or affected by the presence of disease or treatment" (F. Clark et al., 1997). In some cases, the definition encompasses life expectancy, i.e., it is the value of the individual's life for the duration of that life (Mozes et al., 1999). Another source notes that health-related quality of life includes the level of physical function needed to live independently, mental function, and overall life satisfaction (Drewnowski et al., 2003).

In general, dimensions of health-related quality of life include, but are not limited to "physical functioning, psychological functioning, social functioning and role activities, and individuals' overall life satisfaction and perceptions of their health status" (Naughton & Shumaker, 2003). Some of these domains may not be relevant in cases where health-related quality of life is measured with regard to relatively minor or short-term illnesses or injuries. In other cases, additional dimensions, such as cognition or spirituality, may be relevant. The three key domains (physical, psychological, and social) are influenced by a person's perceptions of health, which include experiences, expectations, beliefs, and world views. Each domain is measured both objectively (actual function or biomedical health status) and subjectively (perceptions of health). The subjective interpretation translates the objective measures into quality of life experienced (Testa & Simonson, 1996).

A key concept is that health-related quality of life accounts for distinct differences in outlook and capacity in individuals that may have the same physical function and disease/condition status (Guyatt, Feeny, & Patrick, 1993; Testa & Simonson, 1996). A single definition of health-related quality of life has yet to be widely accepted, although most definitions include the idea of multidimensionality. Measuring health-related quality of life for research and health services delivery is further complicated because the term has very different meaning for each individual.

The Centers for Disease Control and Prevention (CDC) represents several constructs related to health-related quality of life and their relationships as illustrated in Figure 10 ("Measuring Healthy Days: Population assessment of health-related quality of life," 2000).

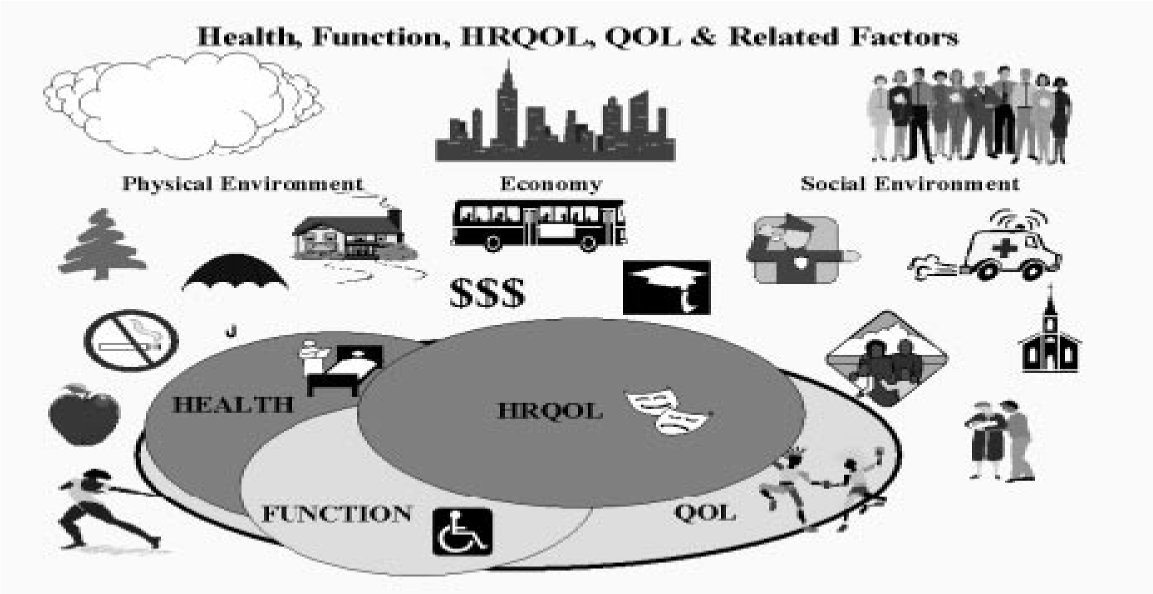


Figure 10. CDC representation of health-related quality of life
(Source: Measuring Healthy Days, CDC, November 2000, p.6.)

The CDC defines health-related quality of life as "an individual's or group's perceived physical and mental health over time" ("Measuring Healthy Days: Population assessment of health-related quality of life," 2000). Note that the CDC views this construct not only from an individual perspective, but also from a community perspective. Since environmental and population characteristics affect longevity, this has important implications for local health planning. Differences in health-related quality of life at the county level are related to such population socioeconomic and health status indicators as poverty level, proportion of residents not completing high school, unemployment, disability level, and mortality (Kanarek, Sockwell, & Jia, 2000).

The CDC examined the perceptions of adults in a surveillance effort from 1993 until 2002. The findings indicated that adults in the United States reported worsened perceived physical and mental health from 1993 until 2001. Older adults reported lower quality in physical health and younger adults reported more problems with regard to mental health. Rather than administering a separate quality of life instrument, the surveillance used four items designated as CDC HRQOL-4 or the Healthy Days Measure, which were embedded in two major population-based longitudinal surveys, the Behavioral Risk Factor Surveillance System (BRFSS) surveys and the National Health and Nutrition Examination Survey (NHANES) (Kobau, Moriarty, Zack, Holt, & Donehoo, 2005; "Measuring Healthy Days: Population assessment of health-related quality of life," 2000). The items were:

- Would you say that in general your health is excellent, very good, good, fair, or poor? (self-rated health)
- Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good? (physically unhealthy days)
- Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good? (mentally unhealthy days)
- During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities, such as self-care, work, school, or recreation? (activity limitation days)

Another observation is that the word ‘health’ in health-related quality of life often operationally refers to functional ability, which is related to self-assessed quality of life (Mozes et al., 1999). Care should be taken to look at health-related quality of life as discrete from health status. In a 1999 study, it was shown that people see the two constructs as distinct. When rating their quality of life, individuals give greater emphasis to mental/emotional dimensions and when rating their health status, they give greater emphasis to physical dimensions (Smith, Avis, & Assmann, 1999). In some cases, the concept of quality is combined with traditional biomedical measures, e.g., the Centers for Disease Control and Prevention’s years of healthy life (also known as quality-adjusted life years), a health measure combining the effects of mortality with information about morbidity and disability (Trauer & Mackinnon, 2001).

2.7.2 Quality of Life in Older Individuals

One should not assume that older people have a poorer health-related quality of life. If self-assessed number of unhealthy days is used as a proxy, adults aged 55-64 years have worse quality than adults aged 65 years (Zahran, Moriarty, Zack, & Kobau, 2003). When considering quality of life for older people, generic and even population-specific measures often do not address factors of greater relative importance for that group. The domains or dimensions are more universal (Trauer & Mackinnon, 2001). Further, some measures, especially those that involve weighting relative importance of various areas of life, may not be easily understood by people with mild cognitive impairment and for individuals over age 75 (Dempster & Donnelly, 2000).

Factors, or determinants, of successful aging are both intrinsic and extrinsic. Intrinsic determinants are mainly biological; extrinsic determinants include social and environmental factors. Health-related quality of life measures primarily assess these extrinsic factors. However, most health promotion strategies addressing such extrinsic factors as physical function and nutrition neither measure health-related quality of life nor incorporate methods to improve it (Drewnowski et al., 2003). When seniors were asked what affected their quality of life, they identified the following factors: access to information, health care, housing, income security, safety and security, social contacts and networks, and transportation (Bryant et al., 2004). Note that both health and socio-economic factors were identified.

2.7.3 Measuring Quality of Life

Why should quality of life be measured? A major consideration is the move away from defining health in terms of the presence of disease and toward a more holistic and positive definition that takes into account the multiple aspects of a person's life and outlook. Assessment of health-related quality of life is congruent with the World Health organization's 1948 definition of health as not only the absence of disease and infirmity but the presence of physical, mental, and emotional well-being (Testa & Simonson, 1996). Conventional ways of assessing health and health care are challenged. By considering health-related quality of life, we move beyond the traditional measures of morbidity and mortality and allow for generation of a magnitude of additional data that can inform decision-making and the development of interventions and even policy. Traditional measures address diagnosis and disease-relevant outcomes; the more holistic view broadens the view of outcomes and addresses health-related quality of life and life expectancy (Kaplan, 2003).

In a clinical setting, assessing quality of life focuses attention on the patient rather than the disease and can facilitate communication between the patient and the health care provider

(Higginson & Carr, 2001). Health-related quality of life measures are better indicators than mortality rates in cases where there is a chronic condition that seldom causes death, e.g., arthritis ("Health-related quality of life among adults with arthritis," 2000). Further, health-related quality of life reflects the broader consequences of disease or injury, beyond the commonly measured biomedical indicators. It also can generate insights into health behavior and motivation ("Measuring Healthy Days: Population assessment of health-related quality of life," 2000). In research, assessment of health-related quality of life can provide useful outcome measures in the evaluation of medical and service delivery interventions (Testa, 2000).

2.7.4 Role of Social Support

Social support may be more important for older people than for younger adults in terms of improving their quality of life. A study reported in 2005 defined social support as real or perceived resources provided by others that enable a person to feel cared for, valued, and part of a network of communication and mutual obligation. This study examined social support and health-related quality of life and showed an association between better health-related quality of life and the following social practices: “visits with friends or relatives, having close friends for emotional support, and the perception of help being available if sick or disabled” (Keyes et al., 2005). In another study, it was found that even within a community of older individuals, the “younger old” may provide an important social resource for the “older old” (Kloseck, Crilly, & Mannell, 2006). A 2000 study of individuals aged 60 to 80 years noted that they “viewed loneliness as a natural occurrence of aging and a consequence of loss” (Gerson et al., 2004). Thus, it is important to consider social support as much as other more tangible resources.

Informal social support is that which is provided by family, friends, and acquaintances; this type of support may be a source of information and may influence help-seeking behavior. Formal support comes from public, private, and governmental agencies and from community organizations; this type of support provides more tangible resources and assistance (Gallagher & Truglio-Londrigan, 2004). Knowledge of the availability of both kinds of support is important in making informed decisions that affect quality of life. An on-site service would seem to be an effective combination of the older person's knowledge of available informal support and a health care professional's (if adequately trained) knowledge of available formal support.

Helgeson (2003) differentiates between structural measures of support (quantitative indicators of the mere existence, number, and interrelatedness of social relationships) and functional measures of support (qualitative indicators of the resources provided by people within a social network). She describes two hypotheses regarding the relationship between social support and quality of life. The 'main effects' hypothesis proposes that there is a linear relationship between the two constructs, i.e., the more social support a person has, the better the quality of life regardless of the amount of stress the person experiences; this hypothesis is relevant for structural measures of support. The 'stress-buffering' hypothesis presents the idea that the degree of relatedness between social support and quality of life depends on the person's level of stress; this hypothesis is relevant for functional measures of support because high levels of stress necessitate the mobilization of support resources to mediate quality of life.

2.7.5 Quality of Life Literature

There is a large body of literature on health-related quality of life. However, the majority of the literature on health-related quality of life as an empirically defined construct tends to be focused on measurement, i.e., the validation and use of certain instruments and methods of administration. Discourse on describing this construct in the older population and on methods to improve it is rare.

2.8 SENIOR HOUSING

Older individuals often move, sometimes involuntarily, to what they perceive as more supportive housing because they have difficulty maintaining their larger family homes and also in financial requirements of upkeep, e.g., heating bills and taxes (Garrett, 1992; Golant, 2003). Other reasons include desire for safety/security and desire to not be a burden on one's family (Kingston, Bernard, Biggs, & Nettleton, 2001).

Cannuscio, et al., provides a thorough discussion of several options for senior living arrangements, which can be viewed along a continuum of different levels of support for the resident. At the "totally independent" end of the continuum, of course, is living in one's own home in a non-restricted community. The next step is a gated community, which still is an independent living situation, but adds a sense of security and safety. Interestingly, Cannuscio reports that there is little empiric support that living in a gated community guarantees safety (Cannuscio, Block, & Kawachi, 2003). A step further along the continuum is planned care environments, which often have a vertically integrated structure. This does not refer to an actual building structure, but rather to the linkage of various options, including retirement apartments, personal care living, intermediate care, skilled nursing, and long term care settings. These communities allow individuals to select the appropriate living arrangements and to remain within the same community as level of required care changes. The next level is assisted living, which is an independent environment with some personal and health-related assistance (Cannuscio et al., 2003). At the “most dependent’ end of the continuum would be intermediate and skilled care settings. Unfortunately, Cannuscio’s model does not specifically include senior subsidized high rises like the sites for the Senior Subsidized Housing Study. However, they appear to be analogous to the gated community, where the actual living arrangements are independent, but there is the security of restricted access.

There has been the observation that senior housing initiatives have been focused more on the “bricks and mortar” and not enough on the needs, including service needs, of the residents (Golant, 2003). Older individuals who live alone in public housing need particular attention because they are more likely to experience poor health, social isolation, decrease in independence, and functional challenges (Gerson et al., 2004). Service coordinators (individuals hired to recognize older tenants’ needs, to help them in securing services, and to monitor service delivery) may be especially helpful (Golant, 2003). Golant also notes that many housing owners, sponsors, and management firms are not aware of how to address the needs of older tenants or even that they do not believe that doing so is part of their job. From the perspective of the directors/managers of congregate housing organizations, there are several themes that emerged from a recent study: 1) Benefits of providing services to meet the needs of elderly residents outweighed possible problems; 2) Significant costs are associated with providing services, including financial expenditures, demands on time, and more abstract costs relating to the potential loss of the residential nature of the site; 3) There is variability in service features and processes across sites; and 4) There may be organizational challenges in merging housing and health care model in terms of goals and practices (Sheehan & Oakes, 2006).

This is becoming increasingly important as individuals who moved into senior housing years ago as the active functionally independent "young old" are now in need of services to remain in the community. At first, services in congregate senior housing paralleled services in traditional community homes, with individual case managers and service providers. As the number of service recipients in a single site increased case management became more efficient when organized at the site level rather than the individual level, with case managers and providers serving groups of people at the site (Mollica, 2003).

In one study, well-being of older urban adults was associated with living in well-maintained neighborhoods that are primarily residential in character and that are located outside the center of the city (Chapman & Beaudet, 1983). Another study (of particular validity because it was a national study with 3,000 elderly subjects in 153 sites selected via probability sample) showed that the factors of quiet neighborhoods, small-medium sized communities, and low crime risk were associated with increased satisfaction and activity (Lawton, Nahemow, & Tsong Min, 1980). Lawton, et al., concluded that increased attention to intervening in environmental characteristics may have more useful outcomes that trying to change individual behavior.

The concept of social capital, "the resources available to individuals and groups through their social connections to their communities" (Cannuscio et al., 2003), provides additional guidance for design and location of senior communities. This concept is relevant for senior housing communities because older individuals are at greater risk for being isolated and losing their social ties; the availability of social capital allows them to retain the greatest possible level of independence. For this reason, Cannuscio recommends that senior living facilities be integrated with the surrounding communities. Some words of caution in terms of health sciences research on social capital is that measures have not been tailored to the elderly population and that interventions focused on increasing social capital are rare (Moore, Shiell, Haines, Riley, & Collier, 2005).

Since physical activity has important health benefits for older individuals (Crowley, 1996), the extent to which a senior housing complex facilitates it is relevant to successful aging. Older individuals are more likely to engage in physical activity in the presence of sidewalks, enjoyable scenery, and appropriate terrain (Drewnowski et al., 2003). Access to senior centers and wellness programs was also recommended to facilitate physical activity.

Faith-based organizations also have been instrumental in addressing the housing needs of low-income elderly residents in their communities. Several factors and services have been recommended to address these needs: spiritual care, nurses who provide resource information, short-stay shelters for seniors in transition, service referral, and the availability of therapy (Artis, 2005; Williams, 2005).

Much of the literature on senior housing focuses on housing issues in the context of cognitive impairment, particularly dementia (Wahl, 2005). Discussion of assisted living services also is well represented. Wahl recommends that some proportion of senior housing research in the United States be redirected toward addressing the growing diversity in the elderly population. In the literature that actually does address independent congregate living for the well elderly, the recommendations aimed at improving the community, and thus improving the residents' well-being, are varied and seem to be related to the investigators' perspectives. However, most recommendations can be viewed in the domains of location, social support, access, and safety.

Another important void in the literature is related to the notion that for the vast majority of older residents, the move to senior housing is a momentous step away from the home they have known most of their lives. Little appreciation is evident for the attachment individuals often feel for the home and its contents and how difficult it must be to leave them. Kasner (2005) presents a thought-provoking discussion of this issue. He describes the “lifecourse” perspective, in which a person’s home and its contents represent the person’s life and serve as anchors to past roles. Objects in the home represent various life events and have the power to spark vivid memories. He notes that a home that has been occupied for a long time, and its physical organization, represent a person’s identity and life story; he illustrates this with a description of a woman who has to leave her home as navigating through it one more time, corresponding to her course through life. This has implications not only for the difficulty older individuals must have in leaving the home itself, but also because they usually are moving to a much smaller space and are forced to give up familiar and cherished objects.

2.9 SAFETY

2.9.1 Safety and the Living Environment

One additional relevant topic should be discussed – safety in the living and community environments. Safety within the home is a concern for older people, and many live in potentially hazardous settings (Carter, Campbell, Sanson-Fisher, Redman, & Gillespie, 1997). Falls are the major concern and the risk increases with age. Increased risk of falling is associated with hazardous living environment, lack of social support, lack of exercise, and poor footwear, as well as a range of biomedical factors, e.g., dizziness, arthritis, and cognitive impairment (Huang, Gau, Lin, & Kernohan, 2003). Of people aged 65 and older living in the community, 30 percent fall each year; of those over 80 years old, 50 percent fall each year (Barbara Resnick & Junlapeeya, 2004). It has been found that for individuals age 72 and older, nearly all homes have at least two potential environmental hazards. Examples of environmental hazards in the home include dim lighting, lack of grab bars, unsafe stairs, electrical hazards, and unstable chairs. Other research has identified dimly lit kitchens and clutter at entryways (or backyards) as high risk factors (Huang, 2004). For the elderly population, age-restricted housing is slightly less hazardous than general community housing. However, in age-restricted housing, disabled people were not at less risk than people who were not disabled (Gill et al., 1999). Risks to safety in the home may be 1) intrinsic, i.e., characteristics of the individual such as chronic conditions or medications a person may be taking; or 2) extrinsic, i.e., environmental factors such as poor lighting or lack of smoke alarms (Cresci, 2005; Barbara Resnick & Junlapeeya, 2004).

People may not even be aware of the risks in their own homes even if they are informed about ways to reduce hazards. Risk assessment for oneself may be more subject to error than risk assessment for others (Harvey, Twyman, & Harries, 2006). However, researchers are not in agreement about the reliability of self-assessment – Morgan, et al. (2005), believe that the self-assessment home hazard tool they tested, the Home Environment Survey Home Checklist, is reliable. The skill of interior design experts may provide valuable information to improve home safety for independent-living older adults (Aud, 2006). Residents of senior subsidized housing also may be apprehensive about safety risks of concern to the general population, e.g., fire, especially with regard to their ability to avoid or escape such dangers. The rate of injury from house fires is highest for individuals who are elderly, minority, and have a lower income (Istre, McCoy, Osborn, Barnard, & Bolton, 2001), an apt description of many senior subsidized housing populations. A commitment to installing and maintaining such devices as smoke detectors and fire alarms as well as education about routes of escape (and actual drills) is necessary but may not totally alleviate fears, which are not always based in logic.

2.9.2 Safety and Crime

Safety also can refer to security or protection from crime. Addressing this issue begins with housing design and layout, e.g., entryways not conducive to break-ins, burglar alarms, lighting (Cozens, Hillier, & Prescott, 2002). Safety concerns in urban environments often limit travel outside of the home to necessary trips. Individuals are concerned about violent crime, drug trafficking, and general public safety. In a study of urban African American individuals aged 62 and older, it was noted that fear of crime, both inside and outside the home, reduced subjective well being and limited their mobility (Bazargan, 1994). Another study showed that fear of crime has a strong effect on psychological well-being, but although elderly people may express fear of crime, they were not *total* ”prisoners in their homes” (Lawton & Yaffe, 1980). Despite physical environment conducive to outside activities, e.g., sidewalks, public transportation, individuals remain close to home (*Does the built environment influence physical activity? Examining the evidence*, 2005). This has implications with regard to the location of health care provider sites. In communities where people do not feel safe outside the housing facility, on-site services may provide an important source of monitoring, education, and preventative health care.

3.0 CHAPTER THREE: METHODOLOGY

Discussion of the methodology of the Senior Subsidized Housing Study will outline the theoretical foundation of the inquiry, the context of the study, and the research design and procedures. The exploratory component of this study primarily utilized qualitative phenomenological methods to understand the views of the residents supplemented by quantitative data in the form of standardized health-related quality of life measurement, demographics, and health outcomes in some cases. The evaluation component also used qualitative methods to investigate the reasons residents used or did not use the on-site service supplemented by quantitative measures related to program utilization.

3.1 THEORETICAL FOUNDATION

3.1.1 Social Construction

The theoretical foundation for the Senior Subsidized Housing Study is social construction. Social construction is particularly relevant for exploring perceptions in the elderly population. Often, aging is inappropriately defined by the natural life course, i.e., from a biological point of view. If that were the case, individuals of the same age and with the same medical and social conditions would age the same. But we have seen in the real world that people cope with aging in markedly different ways, and their actions and behaviors diverge in unexplained ways. Many times people with what we perceive as serious limitations are more active and have a better outlook than we expected. It is reasonable that their construction of their reality has an effect on their health maintenance behavior and on how they age.

In the social construction paradigm, individuals invent or construct what they know and believe to be true about the world; it refers to constructing knowledge not reality, but what is perceived as real *is* real in its consequences and implications for social interaction (LeCompte & Schensul, 1999; Patton, 2002). Thus, what is important in this study is not the actual conditions in the housing sites, but rather, the realities constructed by the residents about these domains and the social processes that give rise to their common understandings of the world. Patton (2002) provides a set of guiding questions for engaging in research guided by social construction: "How have the people in this setting constructed reality? What are their reported perceptions, 'truths,' explanations, beliefs, and world view? What are the consequences of their constructions for their behaviors and for those with whom they interact?"

Data collection in the social construction paradigm must address several considerations. The investigator must become aware of his/her perceptions and not allow them to color the inquiry. Social construction captures multiple perspectives rather than a single reality. Respondent subjectivity is not only accepted, but expected. Perspectives are explored within the context of the respondent's social environment.

3.1.2 Program Evaluation

Investigation of the on-site nursing service at two of the sites is driven by the principles of utilization-focused evaluation. In this framework, primary intended users or constituents play a major role in defining the program requirements and in shaping program improvement processes (Patton, 1997). In the planning stages, the evaluation component of the Senior Subsidized Housing Study was intended to be both summative and formative in nature. The first step was to determine whether the residents used the service. Then the evaluation was intended to determine whether the program was effective, with the "bottom line" question being whether the program should be continued, i.e., summative evaluation. If the program was determined to be effective, formative evaluation strategies were intended to inform program modifications to improve its utilization and effectiveness. Residents' perceptions and needs with regard to the service were to provide the needed information. However, the comprehensive on-site nursing service was discontinued partway through the data collection process. Further, the anticipated health outcomes data were not available. Therefore, the focus of evaluation shifted to collecting data on program utilization and residents' perceptions about it. This information will be used to inform the future development of on-site nursing programs if such programs are deemed necessary at senior congregate housing sites, i.e., depending on site-specific needs assessments.

This utilization-focused evaluation provided a good example of conducting evaluation in a real-life community-based health service setting. The healthcare delivery protocol under study in this project faced several challenges, including design issues (inability to randomly assign intervention, self-selected sample), implementation issues (loss of office space, lack adequate health outcomes data), and discontinuation of the service. Such situations are not unheard of in the "real world." When it became clear that health outcomes data that were anticipated were not forthcoming, it was recognized that the richness of the interview data would provide useful information about how such a service could be developed. Therefore, the residents' reasons for use and non-use of the service, as well as their discussion of health care needs, will be used to construct a model for on-site services in congregate urban senior subsidized housing.

3.2 CONTEXT OF THE STUDY

Senior communities often are viewed from an isolated perspective. Ideally they should be integrated into the surrounding neighborhood and should be considered an integral part of the larger politically defined community (Cannuscio et al., 2003). Residents of congregate housing should feel a sense of cohesion with the community and a sense of belonging to a distinct component within the society at large. Unfortunately, this is not always the case, but it is something to strive for; thus, discussion of the communities in which the study sites are located is warranted. The relationships of the sites to their respective communities are important considerations. When elderly individuals move to a congregate housing site, they should not feel isolated from the larger politically defined community or neighborhood. Consequently, the "health" of the community, whether positive or negative, is experienced in the congregate housing site as well. For example, in a community with a high crime rate, residents in congregate housing are not insulated from safety concerns. Conversely, in areas that support preventive health interventions, congregate housing sites may benefit from the availability of health promotion activities. Further, this sense of solidarity with the community helps to maximize the elderly person's social capital, which, as pointed out in the literature review, allows them to retain the greatest possible level of independence.

All geographic information was compiled from U.S. Census Bureau data, Southwestern Pennsylvania Commission data, and data from an electronic resource for municipal information

(*2000 Municipality Census Data Sheets*, 2007; *Comprehensive Information for Pennsylvania Counties and Municipalities*, 2007; *Summary File 3*, 2007). Population data are summarized and supplemented in Table 5: *Community Profiles* (at the end of this section). The study sites are located in Allegheny County in western Pennsylvania, in the metropolitan Pittsburgh area. This county covers 745 square miles, with 730 of that being land and 15 being water. It has 130 municipalities with independent governance, the highest in Pennsylvania. Allegheny County has a population of 1,281, 666. In the county, 13.2 percent of households have someone living alone who is 65 years of age or older; this age group accounts for 17.8 percent of the population. The county seat is Pittsburgh, the only Second Class city in the county. The study sites are managed by the Allegheny County Housing Authority (ACHA). All sites report having 24-hour emergency maintenance service available and all have safety features of electronic access and security camera systems. The ACHA's mission statement is:

> "… to provide decent, safe and sanitary housing for eligible low-income families and senior citizens in Allegheny County. A major goal of the ACHA is to provide a product that is comparable to private non-assisted rental housing in terms of amenities and services. The ACHA strives to change the negative image of public housing by being creative in our thinking, promoting the positive aspects of public housing, involving residents in decisions that effect them, using innovative designs to change the traditional face of public housing, and implementing various programs that enable families to progress on the road to self sufficiency."

Site D is located in the borough of Wilkinsburg, a small municipality of 2.3 square miles with a population of 19,196. The proportion of households having someone living alone who is 65 years of age or older is 12.5 percent; this age group accounts for 15.8 percent of the population. The per capita income is $16,890, with 18.7 percent of the general population being below the poverty line including 14.2 percent of individuals age 65 and older. The senior high rise is a seven story building with 48 units. It was opened in 1971 and underwent comprehensive modernization in 2006.

Site C is located in Clairton, a Third Class city of three square miles with a population of 8,491. The proportion of households having someone living alone who is 65 years of age or older is 18.5 percent; this age group accounts for 24 percent of the population. The per capita income is $14,608, with 19.5 percent of the general population being below the poverty line including 14 percent of individuals age 65 and older. The senior high rise is an eight story building with 78 units. It underwent comprehensive modernization in 1998.

Site B is located in the borough of Blawnox, a small municipality of 0.4 square miles with a population of 1,550. The proportion of households having someone living alone who is 65 years of age or older is 19.1 percent; this age group accounts for 21.9 percent of the population. The per capita income is $19,858, with 8.7 percent of the general population being below the poverty line including 5.6 percent of individuals age 65 and older. The senior high rise is an eight story building with 90 units. It was opened in 1981 and has not undergone comprehensive modernization.

Site J is located in the township of Penn Hills, a municipality of 19.3 square miles with a population of 46,809. The proportion of households having someone living alone who is 65 years of age or older is 13.2 percent; this age group accounts for 19.7 percent of the population.

The per capita income is $20,161, with 7.5 percent of the general population being below the poverty line including 6.2 percent of individuals age 65 and older. The senior high rise is a seven story building with 95 units. It has not undergone comprehensive modernization. This is the only one of the study sites that has a senior center, Penn Hills Senior Citizens Center, located adjacent to the property.

Table 5. Community profiles

		Pair 1		Pair 2	
	Allegheny County	Wilkinsburg	Clairton	Blawnox	Penn Hills
Study site	All	D	C	B	J
Population 65 and older, number	228,416	3,039	2,038	340	9,231
Population 65 and older, % of total	17.8%	15.8%	24.0%	21.9%	19.7%
Households with individuals 65 and older, number	160,123	2,228	1,445	278	6,555
Households with individuals 65 and older, % of total	29.8%	24.4%	38.9%	32.4%	33.6%
Households with individuals 65 and older living alone, number	70,829	1,145	688	164	2,579
Households with individuals 65 and older living alone, % of total	13.2%	12.5%	18.5%	19.1%	13.2%
Proportion of individuals 65 and older with disability*	38.7%	48.2%	45.8%	43.4%	36.7%
Per capita income	$22,491	$16,890	$14,608	$19,858	$20,161
Individuals 65 and older below poverty line, number	19,520	406	264	18	547
Individuals 65 and older below poverty line, % of older population	9.0%	14.2%	14.0%	5.6%	6.2%

* Of civilian noninstitutionalized population

3.3 RESEARCH DESIGN

The Senior Subsidized Housing Study employs a 2x2 matched pairs design in selecting the sites (matching process is illustrated in Appendix B: *Senior Subsidized Housing Study Matching Process*). The sites are matched on racial composition, age, and income. Gender was not considered in the matching process because all sites reflected the predominately female distribution of the general population in the elderly age group. Random assignment of the clinical services within each pair was not feasible given program priorities of the original program sponsor, UPMC Braddock, and the funding organization, ACHA. The original intent also was to keep the comparison sites “pure,” i.e., to have no services (nursing or activities) during data collection and then to phase them in at a later date. However, ACHA directed that an activities program be instituted at all sites. The unit of analysis for data collection is the individual resident. Aggregate measures at the site level also will be examined.

The Senior Subsidized Housing Study uses a combination of qualitative and quantitative approaches, which provides both meaningful and systematic data that complement each other. The Office of Behavioral and Social Sciences Research of the National Institutes of Health (NIH) notes the increasing acceptance and appeal of this mixed methods approach ("Qualitative methods in health research: Opportunities and considerations in application and review," 1999). This study uses what NIH describes as a parallel model in which qualitative methods, in this case indepth interviews, are conducted in tandem with other methods.

3.3.1 Recruitment

Several methods of recruitment were employed. The method selected depended on whether the sponsoring organization had a presence at the site, i.e., implementation of the on-site nursing service or establishment of the activities program, or whether the tenant council was amenable to project personnel speaking at one or more tenant council meetings to solicit participation. In all cases, official informed consent was obtained and documented by the investigator at the beginning of each interview. Since the subject (or participant) population was well elderly individuals, no proxy consent process was necessary. In all cases, potential study subjects were assured that their participation in all or in any part of the study was voluntary and that all information will be kept confidential.

At Site D, the on-site nurse agreed to ask residents to participate. With the approval of the University of Pittsburgh's Institutional Review Board (IRB), she asked individuals for permission to share their contact information with the investigator, which included asking them to sign an authorization to share this information with project staff. The investigator then contacted the residents by telephone with more detailed information about the project and their participation. All residents who had originally agreed to share their contact information then agreed to participate in the study. The strength of this method of recruitment is that the nurse had an established trustful relationship with the residents, thus enhancing their comfort with the interview. The drawback is that the resident may not provide completely honest answers to interview questions related to the nurse, e.g., trust in the nurse, or the on-site service. Every effort was made to assure the participants that the interview was confidential and also that the nursing service and the research effort were completely separate.

Site C did not have the on-site service. However, the sponsoring organization's activities program was in place and the activities director agreed to propose participation to the residents and ask them to sign the authorization to share contact information. Again, all residents who shared contact information agreed to the interview when contacted by the investigator.

For Site B and Site J, recruitment was accomplished through the tenant councils. The contract for services to these sites was won by another sponsoring organization by the time this wave of interviews was conducted. The new service provider was not approached to assist with recruitment because the service had changed so dramatically, most notably with regard to intensity. To illustrate, the original sponsoring organization had provided comprehensive services to Site B three full mornings per week; the new service agreement only included the nurse's presence for two hours per week. Further, no office records were kept in the new plan, i.e., blood pressure readings were recorded on cards given to the residents. Thus, the decision was made to approach the residents directly through tenant council meetings. At Site B and Site J, initial meetings were held with tenant council presidents. After buy-in from the presidents, the study was presented to the residents at large at regular open tenant council meetings in conjunction with voluntary health fairs. Residents then signed up with the investigator.

3.3.2 Sample

The target population was originally intended to be individuals age 65 and older who were living in the four study sites. However, it was found that a significant proportion of the units in the senior high rises were occupied not by seniors, but by younger individuals with mostly social and psychiatric disorders, and to a lesser extent, physical disabilities. In order to recruit an adequate number of research participants, with the permission of the IRB, the lower age limit was modified to be 60 years of age. The age range of the sample was 60 to 94, with a median age of 75 years. At the two sites with the on-site nursing service, the sample was intended to include residents who utilized this service. Housing guidelines indicate that all residents must be capable of independent living. Thus, these residents constitute an independent and ambulatory population. They had lived at their sites for 1 to 26 years, for an average of 8.4 years. Descriptive information about sample composition is provided in Table 6. The sample was a convenience sample, thus it cannot be generalized to entire population; however, the theoretical knowledge gained will provide insight to inform further research and program development.

Table 6. Sample composition

	Sites	Age range	Mean age at site	Median age, yrs.	Mean age, yrs	Gender	Years at site, range	Years at site, mean
Pair 1	Site "D" (n=9)	60-81	68	73	70.2	M=11% F=89%	3-21	10.2
	Site "C" (n=7)	72-94	75	79	79.9	M=29% F=71%	1-18	8.3
	Pair 1 n=16	60-94		74.5	74.4	M=19% F=81%	1-21	9.4
Pair 2	Site "B" (n=10)	63-89	74	73	74.8	M=10% F=90%	1-26	9.1
	Site "J" (n=7)	62-87	72	77	77	M=14% F=86%	1-10	5.1
	Pair 2 (n=17)	62-89		75	75.7	M=12% F=88%	1-26	7.5
	Total Sample (n=33)	60-94		75	75.1	M=15% F=85%	1-26	8.4

3.3.3 Variables

The following variables were examined:

- Age
- Perception of community
- Perception of living in the high rise
- Subjective health
- Trust of healthcare professionals
- Perception of and utilization of healthcare, both on-site and conventional delivery
- Health-related quality of life
- Health indicators, specifically, blood pressure and blood glucose

Data sources include indepth face-to-face interviews with residents of the senior subsidized housing sites; the SF-8, a standardized measure of health-related quality of life; and limited on-site clinic records.

3.3.4 Qualitative Data Collection

Qualitative data from the primary source, the resident, were obtained through individual face-to-face indepth semi-structured interviews four congregate senior subsidized housing sites (the interview instrument can be found in Appendix C: *Senior Subsidized Housing Study Interview Framework*). These data will serve as the focus of the analysis. This qualitative component was included to provide "richness" to the inquiry; to better understand the residents' environment, needs, and concerns; and to obtain their perceptions and insights to enhance the on-site nursing program. To that end, a phenomenological method of inquiry is most appropriate. In this approach, the human experience of the people being studied is examined in detail. A small number of participants who have direct experience (as opposed to secondhand information) with the phenomenon of interest provides information allowing the researcher to define patterns and relationships of meaning to the lived experience (Creswell, 1994; Patton, 2002). Patton (2002) notes that the phenomenological approach explores "…how human beings make sense of experience and transform experience into consciousness, both individually and as shared meaning." Key concepts and recurrent themes noted by different research participants are bracketed and compared to describe the core meanings – or as Patton notes, essences – of the phenomenon. There is no objective reality, but rather, each individual's interpretation of his experience constitutes his reality. Thus, it is apparent that the phenomenological method of inquiry complements, and indeed enhances, the theoretical foundation of social construction driving the Senior Subsidized Housing Study.

In this study, the constructed realities, or world views, of the residents are explored from the individual and the shared perspectives. The researcher must engage the participants and undertake the analysis with no preconceived expectations or biases. Patton's (2002) guiding question is, "What is the meaning, structure, and essence of the lived experience of this phenomenon for this person or group of people?" Note that the researcher's perspective should not bias the findings.

Questions of validity are often raised with regard to qualitative approaches. Traditional quantitative measures of internal and external validity may be impractical or even meaningless when applied to qualitative methodology. However, that is no reason to abandon the commitment to valid inquiry. Johnson (1997) defines qualitative validity as "the extent to which the data are plausible, credible and trustworthy; and thus can be defended when challenged."

Maxwell (1992) identifies three types of validity in qualitative research, the first two of which are most relevant for the Senior Subsidized Housing Study:

1) Descriptive Validity - The accuracy of what is reported by the researcher (the events, the objects, the behaviors, the setting, etc). For example, what that is reported actually happened; what that was heard or observed is accurately reported.
2) Interpretive Validity - Accuracy in interpreting what is going on in the minds of the participant and the degree to which the participant's views, thoughts, feelings, intentions and experiences are accurately understood by the researcher.
3) Theoretical Validity - The extent to which the theoretical explanation developed fits the data and therefore is credible and defensible.

A practical application of qualitative inquiry that is relevant in health research is evaluation of interventions and programs. This approach can identify weaknesses and strengths and can detect relationships among variables that have an effect on outcomes. It can be instrumental in developing programmatic modifications during formative evaluation (Hutchinson, 2001). Therefore, the residents' perceptions collected through interviews may provide useful information about reasons why they used or did not use the on-site nursing service as well as inform the development of suggestions to improve program utilization.

The Senior Subsidized Housing Study utilizes indepth face-to-face interviewing. The advantage of this form of data collection is that synchronous communication is possible (Opdenakker, 2006). In this way, the interviewer can gather information from nonverbal cues, such as quality and tone of voice and body language. Of course, the disadvantage is that the participant also can receive cues from the interviewer, so the interviewer must be careful to impart no indications of preconceptions, opinions, or biases. The interviewer must employ reflexivity, that is, self-awareness of these mindsets, to avoid allowing them to influence the research participant. Indepth interviewing is particularly useful when the intent is to examine what is meaningful to the individual and open-ended questions, as in this study, encourage individuals to talk about the topic(s) as they perceive them (Sankar & Gubrium, 1994). The substance and extent of the research is thus defined by the participants and not artificially delimited by the range in closed-ended questions.

In the Senior Subsidized Housing Study, interviews were conducted with all residents who initially agreed to participate for a total of thirty-three interviews. Content of discussion was reviewed as the interviews were conducted. When it became apparent that no new concepts were being revealed, it was decided that no additional participants would be recruited.

3.3.5 Quantitative Data Collection

For residents who utilized the on-site service, quantitative data on specific health outcomes were examined from a secondary source, specifically, the clinic record for that individual. However, it should be noted that relatively few of the individuals interviewed from the two intervention sites had health information in the database – only three individuals from one site and four from another had health outcomes recorded. Records were not kept for the other individuals. Thus, because of the limited availability of health outcomes, this information was not useful to the analysis. It was used primarily to provide context and illustration for qualitative findings. The other source of quantitative data was scores from the SF-8, a health-related quality of life measure.

3.3.5.1 General Discussion of Health-Related Quality of Life Measures

There are three types of instruments to measure health-related quality of life. **Generic measures** assess health-related quality of life in a broad range of populations defined in a variety of ways, such as age, race/ethnicity, or level of health. They address at least physical, social, and emotional dimensions of health-related quality of life. Examples include the Sickness Impact Profile and the SF-36 Item Health Status Profile. **Condition- or population-specific measures** assess health-related quality of life in specific age or ethnic/racial groups or in the presence of specific medical conditions. Like the generic instruments, they assess several dimensions, but they also include items particularly relevant to the condition or group being studied. Examples include the Functional Assessment of Cancer Therapy (FACT) and the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ). **Dimension-specific measures** assess only one aspect of health-related quality of life, such as physical functioning. Because health-related quality of life is such a multidimensional construct, this type of measure is rarely appropriate. Examples include the McGill Pain Questionnaire and the Centers for Epidemiological Studies-Depression (CES-D) (Guyatt et al., 1993; Naughton & Shumaker, 2003; Testa & Simonson, 1996).

Sometimes, assessment of health-related quality of life is distilled down to a single question, e.g., "How would you rate your quality of life?" This approach generates little useful information (Guyatt et al., 1993). Conversely, another approach is to administer and validate several multi-item instruments using such techniques as multidimensional scaling (Kemmler et al., 2002).

Usually, scores are calculated within dimensions, allowing separate assessments of different facets of health-related quality of life. Combined scores are simpler with regard to ease of analysis and comparison across groups, but it is difficult to produce a meaningful single score by combining dimensions (Mozes et al., 1999; Naughton & Shumaker, 2003). There continues to be discussion in the field about the importance and validity of various methods of scoring and interpreting some of the more complex instruments, e.g., the issue of weighting scores (Trauer & Mackinnon, 2001).

3.3.5.2 Measurement Issues in the Senior Subsidized Housing Study

The primary quantitative data source in the Senior Subsidized Housing Study is the SF-8 measure of health-related quality of life (provided in Appendix D). The longer SF-36 is the most widely used generic instrument to measure health-related quality of life (Taft, Karlsson, & Sullivan, 2001b). It is comprehensive and well validated, but is complex to score. Even researchers who use it extensively are not in agreement about interpreting its subscale scores (Taft, Karlsson, & Sullivan, 2001a; Taft et al., 2001b; Ware & Kosinski, 2001). The SF-12 is a shorter version of the SF-36. It has comparable reliability and validity when tested with older adults. It can be used as a predictor or outcome measure (B. Resnick & Nahm, 2001). However, in order to reduce the burden on the participants to the greatest extent possible, the newer SF-8 was the instrument of choice. Since the instrument was administered at the conclusion of a long indepth interview, the study team decided to use this eight-item instrument. Each item of the SF-8 measures a domain represented in the SF-36, making it a good choice to represent the range of measurement achieved with the SF-36. One advantage of the SF-8 is that it is scored on the same metrics as the widely used SF-36, allowing comparability across gross groups and with the general population. The SF-8 can be administered in one day, one week, and four week versions. The four week version was used in the Senior Subsidized Housing Study to capture a broad range of perceptions and to avoid contamination of scores by atypical events.

Care was taken to administer the SF-8 consistently. In some cases, visual aids are recommended when administering quality of life instruments to older individuals, e.g., when weighting life areas in the Schedule for the Evaluation of Individual Quality of Life (SEIQoL) or the Modified Patient Generated Index (MPGI) (Dempster & Donnelly, 2000). Although participants did not have to weight responses, since they had to select from five responses for each question in the SF-8, the idea of using a visual aid, a large "flashcard" type of display showing each question and its answer choices, was incorporated to address the possibility of decreased visual acuity and impaired short-term recall. This was consistent across all subjects at all sites. In all cases, each question and its answer choices were read aloud by the investigator while simultaneously being displayed in large clear type.

3.3.6 Data Analysis

The primary analysis focuses on qualitative data obtained via face-to-face indepth interviews with residents of four senior subsidized housing sites. These data were analyzed through a process of identifying, coding, and grouping key concepts and common themes. Atlas.ti, a commercially available qualitative analysis software package, was employed. Health-related quality of life scores (SF-8) will be analyzed using the Minitab statistical analysis package. Primary tests will include ANOVA to explore the relationship between the SF-8 scores (as the response, or dependent, variable) and several independent variables, including housing site, perception of living in the high rise, and subjective health. Independent t-tests will examine group means on the SF-8 categorized by perception of building as a community and quality of relationships with fellow residents. Linear regression will be used to investigate age as a predictor of health-related quality of life scores.

Relationships among qualitative data, process measures, and measurable health indicators will be examined. Findings related to residents' perceptions will be instrumental in developing guidelines for implementation of an on-site nursing service.

3.4 LIMITATIONS OF THE STUDY

3.4.1 Methodological Issues

The sample in the Senior Subsidized Housing Study was a convenience sample, thus limiting the generalizability of the findings. Further, at the sites in Pair 2, the sample was voluntary, i.e., the study was presented to residents at tenant council meetings and attendees volunteered to participate. Therefore, the findings from these two sites may not represent the views of residents who do not attend tenant council meetings. An additional concern is that this study did not reach individuals who are socially isolated.

Another limitation relates to the availability of health outcomes data. The original intent was to supplement the qualitative data by investigating whether individuals who regularly used the on-site nursing service showed improvement in blood pressure and if relevant to their medical conditions, blood sugar and oxygen levels. Ultimately, it was found that the expected data were not available – records were not kept for the majority of the interviewees. A total of only seven residents had health information documented. Of those seven, all had blood pressures and oxygen levels recorded and four had blood sugar levels. Based on the information available, it appears that only three visited the nurse regularly. For that reason, no useful conclusions could be drawn from the health outcomes data.

3.4.2 Evaluation and the "Natural Experiment"

The other category of limitation involves "real world" political and programmatic challenges in service implementation and evaluation. It was hoped that within each pair of sites, the intervention site could be randomly selected. However, because of program priorities, the funding organization designated the sites to receive the intervention. Further, an activities program, independent from the intervention, was instituted at the same time as the on-site nursing service. It was hoped that the activities program could be "rolled in" such that the study sites received it last and data could be collected prior to its implementation. However, it was necessary to implement the activities program almost immediately. The concern was that this program would dilute any effect from the nursing service. To address this limitation, care was taken in the interviews to differentiate the nursing service from the activities program.

Other issues arose during the study. For one thing, implementation of the service was confronted by problems related to location of the offices. At Site D, it was necessary to relocate the nurse's office at least twice, a potential for discontinuity for the residents, although they appeared to adjust to the changes satisfactorily. At Site B, there was significant difficulty in securing the original location for the office. Finally, in the midst of data collection, the contract was awarded to a different service provider and the actual structure and procedures of the on-site service changed dramatically in scope and process.

4.0 CHAPTER FOUR: RESULTS

4.1 OVERVIEW

Results of the data collection, most of which relates to the interviews, are presented in this chapter. Interview results are organized according to interview question within the following interview domains:

1. Routine
2. Scope of universe
3. Social context
4. Perception of environment
5. Character of community
6. Subjective health
7. Access to care and healthcare delivery process

For interview questions involving general dialogue about life in the senior subsidized high rise, the interview findings are presented without regard to whether the sites had the on-site nursing service. Following the interview findings, results of the administration of the SF-8 (measuring health-related quality of life) and utilization of the on-site nursing service, where applicable, will be presented. Dialogue related to health outcomes and use of the on-site nursing service presents a challenge because of the relatively low rate of utilization, which will be addressed later in this chapter.

4.2 QUALITATIVE RESULTS: INTERVIEW

4.2.1 Routine

a. Please describe your typical day

All interview participants were easily able to describe a typical day in their lives. These descriptions were characterized by routine schedules. However, no pattern was apparent in the actual routines either across or within sites. Individuals noted such daily routine activities as getting up at a certain time, taking medications, light housework, preparing meals, and participating in formal group activities. Other than having to take medications at certain times relative to meals, no participants mentioned a need for their schedules to be consistent. Also, none verbalized dissatisfaction with their schedules.

b. Are weekends different from weekdays?

Across all sites, a larger proportion of interview participants, 70 percent, felt that the weekends were different than weekdays. Figure 11 illustrates the responses. This finding was predominant at Site J, where 100 percent of the participants consider the weekends to be different than weekdays. However, the reasons for perceiving a difference varied. Of the twenty-three people who felt that there was a difference, 52 percent said that the weekends were quieter. Several noted that they were boring. One respondent said, “You don’t see nobody.” Another declared, “I hate the weekend! There’s nothing to do.” For the participants who described activities that they engaged in on the weekends, the most common activity, at 43 percent of the individuals who felt that the weekends were different, was attending church. Other activities, in descending order of frequency, were: shopping, visiting family and friends, going out to lunch, and doing cleaning and laundry. Interestingly, all of the participants at Site C (the only site a significant distance away from the metro area) who felt that the weekends were different noted that they were quieter and none indicated that they did any particular weekend activities. Conversely, at Site J, where all of the participants felt that the weekends were different, only one person noted that the difference was that the weekends were quieter.

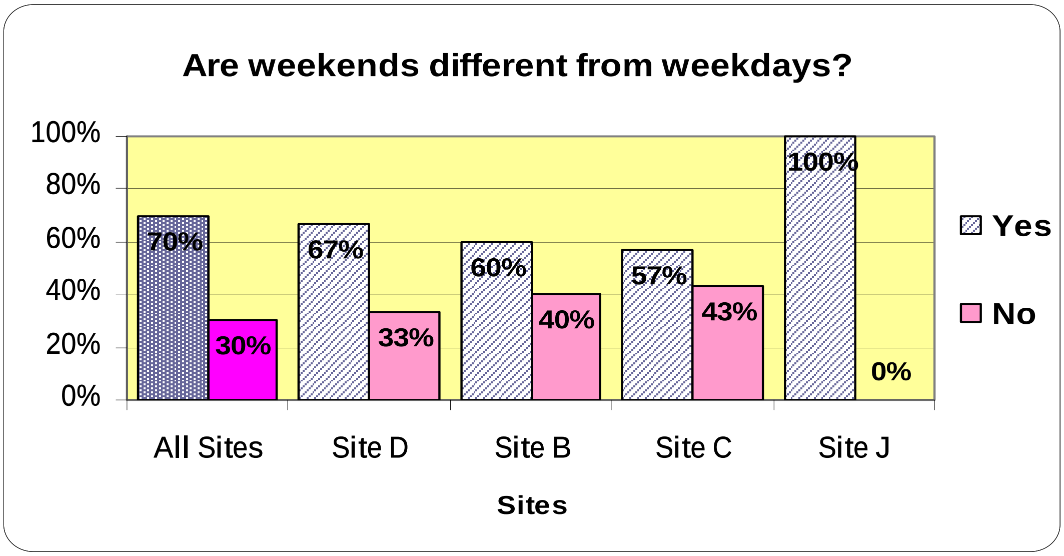


Figure 11. Perceived difference between weekends and weekdays

c. What activities do you enjoy most?

When asked what activities they enjoyed most, 70 percent of the respondents named more than one activity. Across all sites, the most favorite activities, tied for first place, were doing puzzles, playing cards, and talking to and being with other people. Playing games in the activities sessions and doing craft activities were close to the top three, followed by bingo and general participation in formal activities sessions. Several people also mentioned walking or other exercise, watching television, and going to the movies or plays. Less frequently mentioned activities included shopping, knitting/crocheting, reading, and gambling. Birdwatching, writing poetry, sewing, traveling, and volunteer work were mentioned as favorite activities, although infrequently.

d. What activities do you enjoy least?

When asked about their least favorite activities, the most common response – 36 percent (12) of the interview participants – said that they couldn't think of anything they disliked. The next most common response was housework, with 33 percent of participants (11) identifying it as their least favorite thing to do. No other response approached these two in terms of frequency mentioned. Three participants indicated that they did not like bingo, two mentioned that they did not like playing cards, and two did not like sleeping. When asked the reason they did not like sleeping, one lady said that she just never liked to go to sleep and the other said, "I feel like I'm missing something." Other responses, with one mention each, included taking trips, doing nothing, shopping, watching television, and talking on the telephone. One participant said, "I hate being in this building."

e. Investigator observations about routine

On several occasions, the investigator sat in the lobbies of the high rises and chatted informally with the residents. Adherence to a daily routine was very apparent at both sites. The same individuals tended to be there at the same times of day. If someone was not there, the others wondered about it. The daily mail delivery was a much anticipated event, and if the mail carrier was even a few minutes late, people started complaining.

4.2.2 Scope of Universe

a. How often do you spend time away from the high rise?

Participants were asked how many times per week they were away from their high rises. The range of responses was quite wide, from zero to seven times per week. The average number of times per week that the participants spent away was 3.5 across sites. The least number of times away was at Site D, at an average of 2.7 times per week. Interestingly, this site is in the metro area and close to public transportation. The highest average times per week spent away from the high rise was 4.4 at Site J. This site is adjacent to an active senior center, so residents can go there relatively easily. The findings from this data point are summarized in Figure 12.

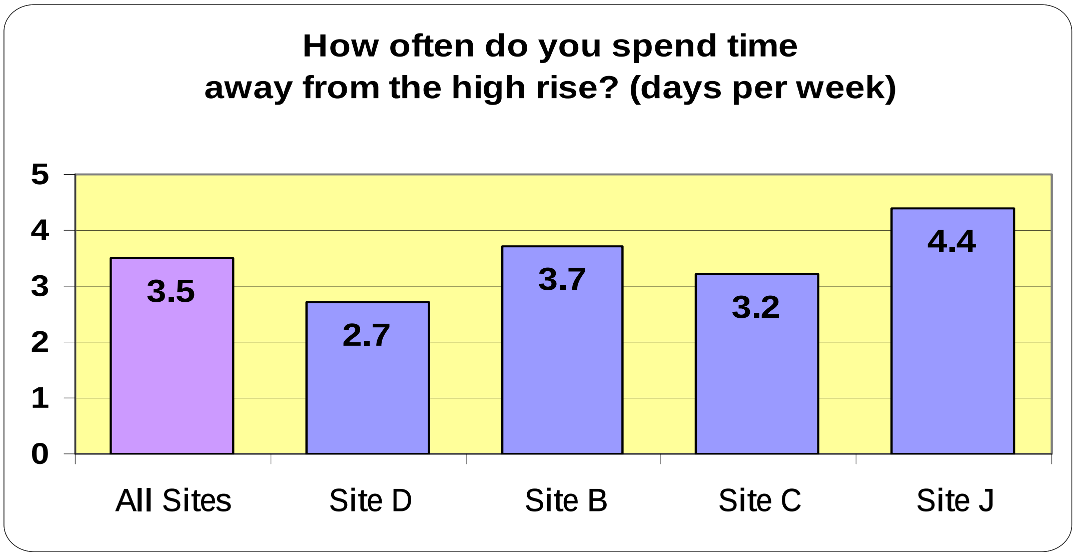


Figure 12. Number of times per week spent away from high rise

b. What do you do when you are away from the high rise?

When asked to describe what they most often did when they were away from the high rise, the most common responses were shopping (21 responses), doctor visits (14), church (9), going out to eat (8), and group activities such as playing cards at the senior center (7). Other less frequently mentioned activities (3 responses each) were going on vacation, taking day trips, and going to entertainment such as movies and plays. Rarely mentioned activities (only one response for each activity) grouped in the 'Other' category include taking walks, sitting outside, going to the beauty parlor, gambling, going to the library, going to the country, taking a class (computer), going to work, and just riding around. These activities are summarized in Figure 13.

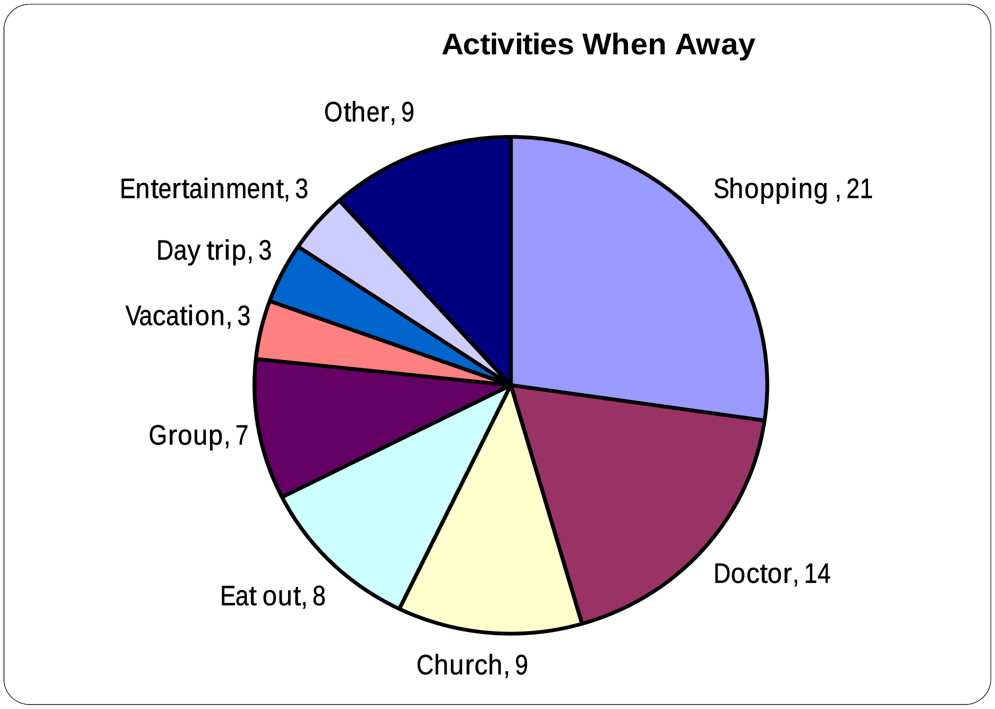


Figure 13. Activities engaged in when away from high rise

c. What is your opinion of the activities that are offered?

In general, interview participants had a positive view of the formal activities sessions offered at the high rises.

"The activities are so much fun!"

"It keeps us busy, it keeps our hands busy. You don't have time to think."

"It got people out of their apartments."

Factors contributing to this positive perspective included having a variety of things to enjoy, winning gifts, and learning from educational sessions. At Site B, participants enjoyed being able to talk and felt that the activities sessions were a way of keeping busy and passing time. At both Site D and Site B, they mentioned enjoying the day trips that were available. At Site C, participants were enthusiastic about the activities sessions and expressed that the sessions were fun. They enjoyed getting together with their neighbors and also felt that it was a way of passing time. At Site J, several participants mentioned enjoying tai chi and theme parties. They also mentioned games, crafts, and exercise sessions.

Approximately 18 percent of the interviewees said that they didn't participate regularly in the activities sessions. One individual did not like the people who attended, but the primary reason for not attending was that they were doing other things:

"I rarely went because I'm out and at 'em!"

"I didn't go down too often. I was going out, doing other things."

Regarding the social aspects of the activities, one lady said, "It doesn't matter to me – I've been through all that." Several individuals (18 percent) noted that the same group of residents attended the sessions and that they wished there was more participation. However, 58 percent of the interview participants felt that socialization was the most important aspect of the sessions:

"The companionship is the most important thing."

"The team games help you work together."

"The best thing is getting together – we laugh and kid around."

4.2.3 Social Context

a. What kind of relationships/ interactions do you have with your fellow residents?

Interview participants were asked to describe the kind of relationships they had with their fellow residents in the high rise. The investigator classified these comments into three categories: negative, neutral, and positive. Negative comments were found only at Site D, a finding that was reflected in the aggregate data for all sites (see Figure 14). Examples of the three categories of comments include the following interview excerpts.

- Negative:

  "Most are a little stand-offish and I don't really try to get to know them."

- Neutral:

  "I've gotten to know people here over the years, but they end up moving away or passing."

  "I guess my relationships here are casual."

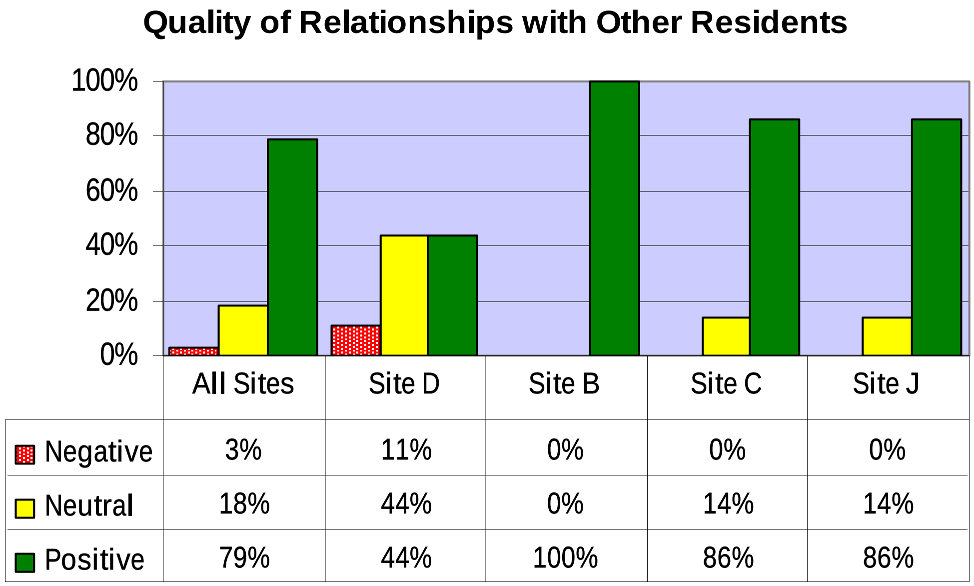
  "It's OK, I guess. But I don't want them in my apartment."

- Positive:

  "I get along good with everyone."

  "It's one big happy family."

  "I'm a friend to everyone. I like everyone."


Quality of Relationships with Other Residents

	All Sites	Site D	Site B	Site C	Site J
▨ Negative	3%	11%	0%	0%	0%
🟨 Neutral	18%	44%	0%	14%	14%
🟩 Positive	79%	44%	100%	86%	86%

Figure 14. Social context within building

More than half of the interviewees at each site made a statement that they got along with or liked everyone, although at Site D, comments made after that statement for one individual made categorization of that person’s perspective more appropriate as ‘neutral.’ Less than half of the interviewees reported having one or more close or special friends in the building. When asked about friends in the building, one lady said, “I’m afraid to get too close – when you’re my age, people keep dying on you. I don’t want to get heartbroken again.” When interpreting the responses to this question, one must keep in mind that people define the concept of “friend” differently. For example, one comment was, “I don’t really have special friends, but I have two ‘church’ friends – two women I go to church with.” Only a few individuals mentioned having primary friendships outside of the building. These data are summarized in Table 7.

Table 7. Friendships

	Get along with everyone	Have one or more close friends in building	Have main friendships outside building
Site D	5 (56%)	2 (22%)	0 (0%)
Site B	9 (90%)	4 (40%)	3 (30%)
Site C	6 (86%)	3 (43%)	1 (14%)
Site J	6 (86%)	3 (43%)	2 (29%)
All sites (totals)	26 (79%)	12 (36%)	6 (18%)

Regarding social relationships, one lady shared some words of wisdom:

"There's so much good in the worst of us
and so much bad in the best of us
that it hardly behooves any of us
to talk about the rest of us."

b. Please tell me about your family

Interview participants were asked, "Please tell me about your family" without guidance as to what content it was hoped they would address. None of the participants was currently married – 18 were widowed, seven were divorced, and eight had never married. These data are summarized in Table 8. Of the 20 individuals who had children (61 percent of the interviewees), 12 mentioned them immediately. The remaining eight mentioned siblings, parents, or spouse first. Seventeen had grandchildren/great grandchildren.

Table 8. Family

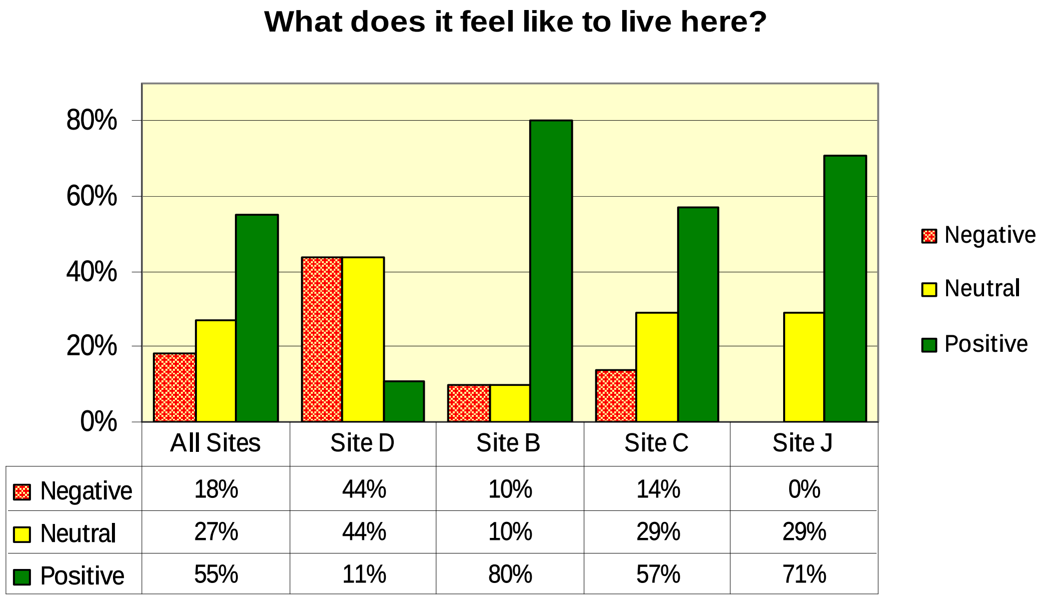
	Widowed	Divorced	Never Married	Children	Grandchildren
Site D	5 (56%)	2 (22%)	2 (22%)	7 (78%)	6 (67%)
Site B	3 (30%)	4 (40%)	3 (30%)	5 (50%)	4 (40%)
Site C	4 (57%)	1 (14%)	2 (29%)	4 (57%)	4 (57%)
Site J	6 (86%)	0 (0%)	1 (14%)	4 (57%)	3 (43%)
All sites (totals)	18 (55%)	7 (21%)	8 (24%)	20 (61%)	17 (52%)

Twenty-one individuals mentioned living siblings. Four described total estrangement from at least one family member and three described only occasional contact with at least one immediate family member. In the opinion of the investigator, four participants seemed to be at risk for social isolation. However, it should be noted that this interview was not designed to capture detail about the social network – further research in this area is recommended to reveal actual prevalence of isolation. For example, one individual who was divorced and had no children described being estranged from her only sibling for 35 years. On the surface, she would appear at risk for social isolation, but she then described a cousin who lived nearby who was in regular contact with her and was very supportive – she said, "He's an angel."

4.2.4 Perception of Environment

a. What does it feel like to live here?

Interview participants were asked to describe their feelings about living at the high rise. The investigator classified their comments into three categories: negative, neutral, and positive. Positive perceptions of living predominated with the glaring exception of Site D, where only 11 percent of the interview participants felt positive. At 80 percent, Site B had the largest proportion of positive feelings, but also had 10 percent negative. Site J had a smaller proportion of positives, but had no interview participants who felt negative. These data are presented in Figure 15.



	All Sites	Site D	Site B	Site C	Site J
▨ Negative	18%	44%	10%	14%	0%
🟨 Neutral	27%	44%	10%	29%	29%
🟩 Positive	55%	11%	80%	57%	71%

Figure 15. Perception of living at high rise

The majority of people who had a negative perception of living in the high rise were at Site D – the main reason for this perception was fear related to younger people with social and psychiatric problems moving into the building and being involved in fights and other disturbances in the hallways. Across sites, other reasons for negative and neutral perceptions were:

- People prying into others’ business (“nosy neighbors”)
- Institutional feeling
- Sense of lost independence
- Feeling of confinement

Reasons given for positive perceptions included:

- Convenience (no steps, near transportation)
- Security (entry security, apartment door alarms)
- Quiet atmosphere
- People nearby
- Independence (two individuals, both disabled, reported this reason)

Examples of the three categories of comments include the following interview excerpts.

- Negative:

  "The best I can say is that it's better than living on the street."

  "Lots of the older people are afraid."

  "It's hell on earth."

- Neutral:

  "It's alright. It's nice in a way, but it's not home."

  "I guess it's OK."

  "It's OK. It's cheaper to live here."

- Positive:

  "It feels like home. I'm comfortable. I love the apartment."

  "If you don't like it here, there's something wrong with you."

  "I love it. It takes all the worry off you."

b. Why did you move here?

When asked about the reasons for moving to the sites, the most common reason was financial. This usually referred to low rent (48 percent of interviewees), but some individuals also mentioned moving because they could not maintain upkeep on their homes (18 percent of interviewees). For 18 percent of the interview participants, the reason for moving was convenience, including close transportation and lack of stairs. For 15 percent the reason was security. These data are presented in Figure 16. The ‘Other’ category includes the building was in their old neighborhoods (six percent), their old apartments were demolished or refurbished (six percent), they wanted to live independently (six percent), they wanted people around (three percent), and they knew someone in the building (three percent).

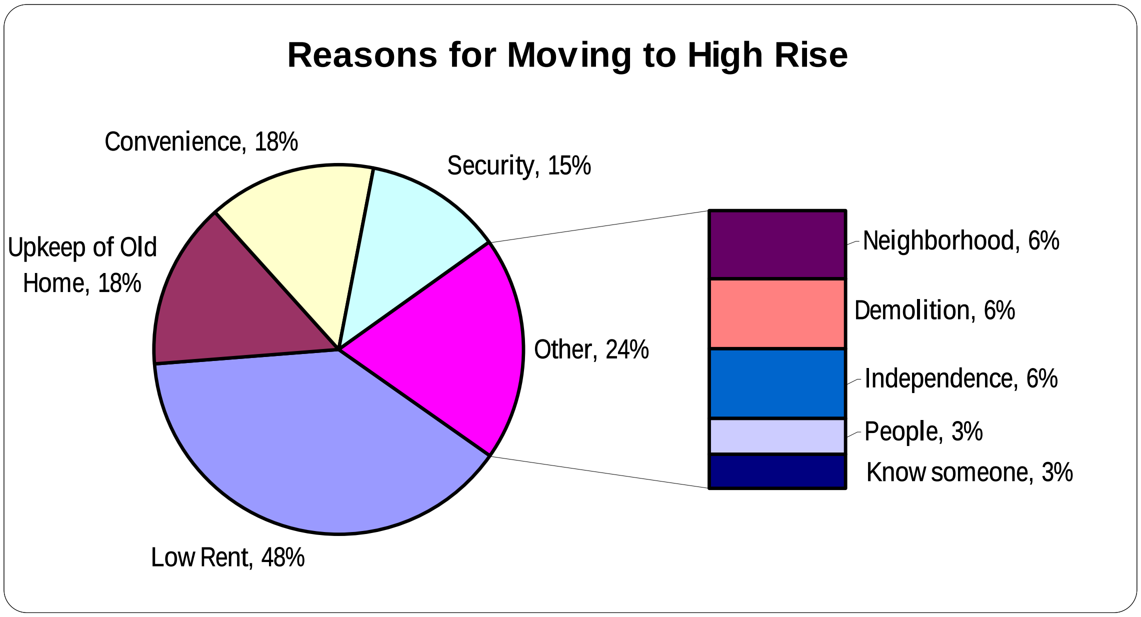


Figure 16. Reason for moving to the high rise

* Percentages total more than 100 because some individuals gave more than one reason.

c. What do you most and least like about living here?

Interview participants were asked to identify what they liked most about their living environment. The responses were very subjective and identified a wide range of factors. The most common thing that people liked most, identified by nine interview participants, was the people/companionship. Next most common, identified by four people, was the feeling of security. Four people said that there was nothing they liked about living at the high rise. Three of those were at Site D where the problems with younger residents were occurring; this comprised 33 percent of the participants at that site. Factors that people liked most about living at the high rise are summarized in Table 9.

Table 9. Positive perceptions of living at high rise (# of responses per factor*)

Response	Site D	Site B	Site C	Site J	All Sites
People/Companionship	2	3	3	1	9
Security		1	1	2	4
Nothing I like	3	1			4
Elevator (no steps)	1	1	1		3
Convenience	2			1	3
No responsibility for repairs		1		1	2
Comfort		2			2
Low rent		1		1	2
Independence/Privacy		1		1	2
Small (easy to clean)	1				1
Space			1		1
Activities/Trips		1			1
Birds outside window				1	1
Don't know			1		1

*Some individuals gave more than one response.

Interview participants then were asked to identify what they liked least about their living environment. The responses again were very subjective and identified a wide range of factors. The most common response, identified by eight interview participants, was that they couldn't think of anything they disliked. Next most common, identified by six people, was the lack of security related to safety; however, it should be noted that all of the safety concerns were from Site D (from 67 percent of Site D interviewees), where previously mentioned socio-behavioral problems had been occurring. Factors that people liked least about living at the high rise are summarized in Table 10.

Table 10. Negative perceptions of living at high rise (# responses per factor*)

	Site D	Site B	Site C	Site J	All Sites
Nothing I dislike	1	2	2	3	8
Lack of security/safety	6				6
Lack of privacy		3	1	1	5
Lack of space		1		2	3
Strangers in building			2	1	3
Rude people	1	1			2
Confinement		1	1		2
Lack of convenience	1	1			2
Lack of parking		1			1
Noise		1			1
Community laundry			1		1
Condition of building				1	1

*Some individuals gave more than one response.

Interestingly, many of the most liked factors are congruent with least liked factors. For example, the space or small size of the apartment was listed as a most liked factor because it was easier to clean, but the lack of space was listed as a least liked factor. Similarly, convenience was mentioned as a most liked factor, yet lack of convenience was mentioned as a least liked factor. Thus, these factors must be interpreted with caution.

4.2.5 Character of Community

a. How would you define community? Is this building a community?

The concept of 'community' can be viewed in terms of a geographic setting or a social network. When asked to define this concept, five individuals defined it as the former, specifically identifying the neighborhood (4) and "the surroundings and the people in it" (1). The remainder of the interview participants viewed 'community' in terms of the social network. The three most common definitions, with six responses each, were 1) when people work together for a common goal, 2) when people get along with each other, and 3) when people have a feeling of togetherness. Four individuals defined 'community' as people looking out for each other. Three noted that in a community, people participate in community activities, e.g., tenant council meetings and activities sessions. Responses that were given by one individual each include: 1) when people care about the same things, 2) when people know each other, 3) when people have the same routine. Four individuals provided more than one definition and four could not formulate a definition.

Interview participants then were asked if their building was a community. Their answers, of course, were based on each person's perception of community. Site D was the only site where the majority of the participants – 78 percent – felt that their building was *not* a community. This finding skewed the across-sites measurement, but even so, across sites, two thirds of the participants felt that their building was a community. These findings are represented in Figure 17.

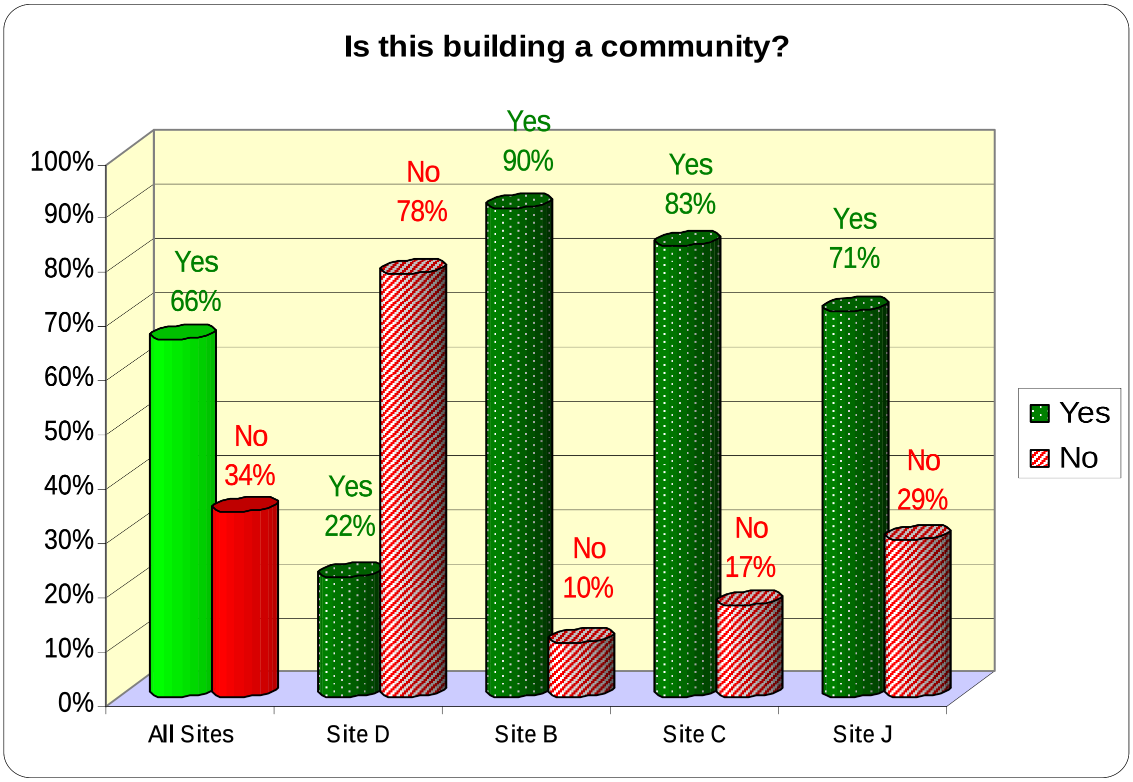


Figure 17. Perception of building as a community

b. How is conflict resolved?

When asked how conflict was resolved, many interviewees provided more than one response. Eight residents said that they did not know how conflict was resolved and that they were not aware of conflict. Several individuals believed that conflicts were not resolved. Of the actual methods for dealing with conflict that were presented, the most common response, reported with more than twice the frequency of any other response, was that people talk it out. Other methods included calling the police or security, going to the building manager, taking the conflict to the tenant council, ignoring or forgetting about the problem, filing a formal grievance/petition, and yelling. Frequencies are reported in Table 11.

Table 11. Methods of dealing with conflict.

Method and example of comment from interviews	Site D	Site B	Site C	Site J	All sites
Talk it out *"Say it out because you have to live with these people, most of us until we die."*	5	6	2	1	14
Call police/security *"Some people call the cops with minor complaints, like someone walking too heavy."*	3	0	1	1	5
Go to building manager *"We complain to the manager."*	1	1	0	2	4
Go to tenant council *"At meetings you can sound off."*	3	1	0	0	4
Ignore/Forget about problem *"I just dismiss it – things aren't going to get better."*	2	1	0	1	4
File formal grievance/petition *"Sometimes people send letters and sometimes they do petitions."*	2	0	0	0	2
Yell *"You hear screaming and yelling. Sometimes you need a referee."*	0	1	0	1	2
Conflicts not resolved *"We haven't figured out a good way to do that."*	1	1	0	2	4
Don't know/Unaware of conflict *"I don't know. I never have conflict with anyone and I don't notice if anyone else is fighting."*	0	2	4	2	8

*Several individuals gave more than one response.

c. How are your opinions expressed to management?

Each of the sites has a building manager who has an office on site. However, each manager covers more than one building, so he/she is not on site every day. Interview participants said that the managers were at the buildings one to three partial days per week. When participants were asked how they expressed their opinions to the management, the most common response, at more than twice any other response, was that they visited the office when the manager was on site. The next most common response was that they called the manager's office, closely followed by calling downtown (Allegheny County Housing Authority), writing a letter/survey/petition, and calling a formal meeting. Five individuals said that they did not know because they never had the need to contact management. Findings are presented in Table 12.

Table 12. Methods of expressing opinions to management

Method and example of comment from interviews	Site D	Site B	Site C	Site J	All sites
Visit manager's office *"You can go to the manager's office and talk to him on the days that he's here."*	0	6	6	3	15
Call manager's office *"I can just call. The managers are nice."*	4	1	0	2	7
Call downtown (ACHA) *"You call downtown and leave a message."*	0	3	0	3	6
Write letter/petition/survey *"Sometimes they do surveys, sometimes letters and petitions."*	4	0	2	0	6
Call formal meeting *"Usually you call a meeting."*	3	0	0	0	3
Don't know – never had need *"I haven't really had anything to go to them about. I would have no qualms."*	1	3	1	0	5

*Several individuals gave more than one response.

Other observations regarding interacting with the building managers include:

"Every two or three years, they change the manager because they don't want her to get too friendly with the tenants and have favorites."

"I could go in and talk to her or call downtown, but you always try the manager here first."

d. How does tenant council reflect your opinion?

All sites had tenant councils consisting of elected officers from the resident population. Tenant councils had monthly meetings open to the resident population. Interview participants were asked to what extent the tenant councils reflected their opinions. Of the participants who provided an opinion, half believed that the tenant councils did a good job at reflecting their opinions (a third of those were individuals who were on the tenant councils). A tenth felt that the tenant councils sometimes reflected their opinions and sometimes did not. Seventeen percent felt that their opinions were reflected rarely or never. A tenth of the participants believed that the tenant councils only reflected the opinions of a single person, e.g., the council president, or a few people, e.g., the officers. Thirteen percent were not sure. These data are presented graphically in Figure 18. Appropriate responses could not be elicited from three individuals; these individuals talked about how much work being on the council and how difficult it was to try to please a lot of people all the time.

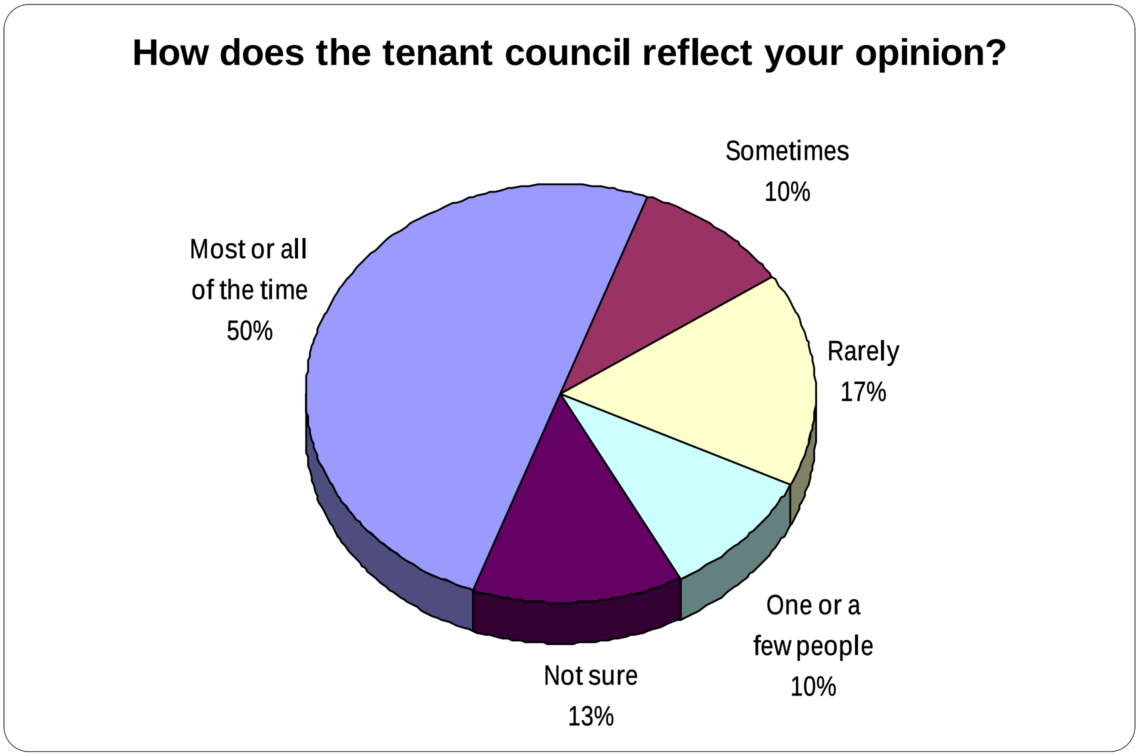


Figure 18. Perceptions of tenant councils' representation of resident opinions

Some illustrative interview comments include the following:

"You can voice your opinion and they try to do what most people want."

"Stand up at the meeting – they'll listen."

"I know I can put my two cents in, but usually I sit there real quiet."

"Most of the time the women take over. I don't have no opinion really – it's an evening and you're with people."

"If we don't have a tenant council, certain benefits will be taken away, like we wouldn't be able to use the community room after 4:00.'

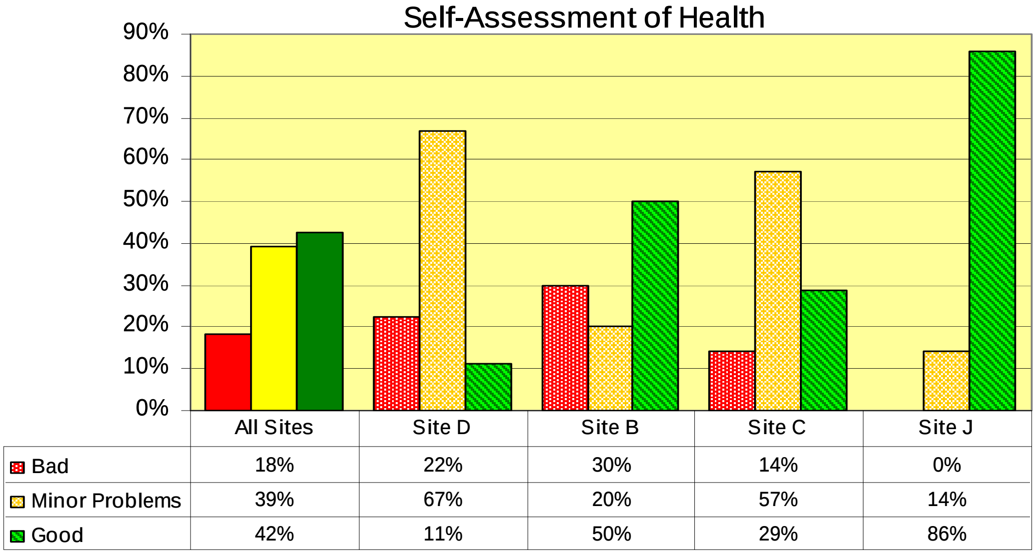
"It's a particular circle of people that listen to each other."

"You can't please everyone, so you have to prioritize, pick and choose."

4.2.6 Subjective Health

a. Please describe your health as it is now.

Participants were asked to describe their health as it was at the time of the interview. Their qualitative assessments were classified into three categories: bad, minor problems, and good. Their responses are presented in Figure 19. Across sites, participants reported minor problems nearly as often as good health (39 percent and 42 percent, respectively). Self-assessed bad health was reported by 18 percent of the participants across sites. Interestingly, the highest proportions of perceived bad health were at the two sites that had the on-site nursing service, Site D (22 percent) and Site B (30 percent). The highest perception of good health was at Site J (86 percent). This site also had no one who reported self-assessed bad health.



	All Sites	Site D	Site B	Site C	Site J
🟥 Bad	18%	22%	30%	14%	0%
🟨 Minor Problems	39%	67%	20%	57%	14%
🟩 Good	42%	11%	50%	29%	86%

Figure 19. Participants' ratings of their health status

Specific health problems are presented in Table 13. All interview participants reported at least one health problem and 28 (85 percent) reported multiple problems, including many individuals who considered themselves to be in good health. For example, one individual described her health as: "It's good. I have high blood pressure and a low thyroid, but I manage them with pills." The most common health problem reported was arthritis, followed by hypertension, and then diabetes. When rates of health problems per 100 individuals were computed, it was found that Site D, which had the on-site nursing service, had the highest rate of health problems (377.8 per 100) and Site J, which did not have the service, had the lowest rate (128.6 per 100).

Table 13. Number of individuals reporting specific health problems*

Health Problem	Site D	Site B	Site C	Site J	All Sites
Arthritis	8	3	5	1	17
Hypertension	5	4	4	2	15
Diabetes	5	4	3	1	13
Heart disease	3	3	3	1	10
Lung disease	4	2	0	1	7
History of stroke	1	0	3	0	4
Depression/Bipolar	2	1	0	1	4
Hypothyroidism	1	1	0	1	3
Urinary tract problems	1	2	0	0	3
Stomach problems	2	0	0	0	2
Other chronic conditions	2	4	1	1	8
Totals problems reported per site	34	24	19	9	86
Rate of health problems per 100	377.8	240.0	271.4	128.6	260.6

*Most individuals gave more than one response.

When asked if they had any concerns about their health, 55 percent of the interview participants across sites said that they had no concerns, broken out as follows:

Site D – 56% had no concerns

Site B – 60% had no concerns

Site C – 29% had no concerns

Site J – 71% had no concerns

Four individuals had nebulous concerns:

"I can't get around like when I was younger."

"Sometimes I feel like I can't make it."

"Some days I'm just tired of being sick."

"I can't say specifically how, but I'm losing ground."

One individual was concerned about having a medical crisis when no one is around. Another raised a concern about the increasing costs associated with health care. The remaining concerns were directly related to the individuals' specific health problems, e.g., anxiety about long term effects or concern about lack of improvement. One individual referred to health concerns as "worriation." Some interesting observations from the interview participants about health concerns include the following:

"I don't worry about it. I let other people worry about it."

"I can't say I have concerns – I just accept it."

"I'm not really concerned. I'm on medications for everything and I do what they tell me."

"I don't worry about it – as long as I'm not in pain."

b. Has your health changed over the past year or two?

In order to assess stability of health status, interview participants were asked if their health had changed within the last two years, and if so, in what way. Table 14 outlines these findings. More than half (61 percent) of the individuals across sites reported stable or improved health. The largest proportion of worsening health was at Site B, which had the on-site nursing service, although it should be noted that only 40 percent of the interview participants had utilized the service. The smallest proportion of worsening health was at Site J (no on-site nursing service), which also had the largest proportion of stable or improved health at 86 percent.

Table 14. Proportion of individuals reporting change in health within last year or two

Health change	Site D	Site B	Site C	Site J	All Sites
No change	56%	20%	71%	57%	48%
Change for the better	11%	0%	0%	29%	9%
Change in both directions	11%	0%	0%	0%	3%
Change for the worse	22%	80%	29%	14%	39%
Stable or improved health	78%	20%	71%	86%	61%

The most common reason that health was said to have worsened was due to worsening diabetes symptoms, followed by increased pain and poorer lung function. Other reasons, with one report each, included onset of a stomach ulcer, development of spinal stenosis, voice hoarsening, and general feeling of losing function.

4.2.7 Access to Care and Healthcare Delivery Process

a. Where do you usually obtain medical care?

All but one interview participant (a Site D resident) had a usual source of care – a regular physician or medical group where they received medical care. When asked the reason for not having regular medical care, this individual said that she felt her doctor was giving her "too many pills" and that she felt like a "guinea pig." She indicated that visiting the on-site nurse was her only source of care.

For the 97 percent of interview participants who have a usual source of care, the reasons they opted for this source are represented in Figure 20. The most common reason was that they had been going there for years and did not have a reason to change. The next two most common reasons, with an equal number of responses, were that they were referred by family members or friends and that the medical practice was close or convenient. Next was that they were referred by another doctor. Less common reasons were that the medical practice took their insurance (including veterans' benefits) and that the individuals liked the staff. The 'Other' category in Figure 20 includes the following single response reasons: the individual used to work there; the partnership had a range of specialists in the same practice; and the individual did not know why she opted for her source of care.

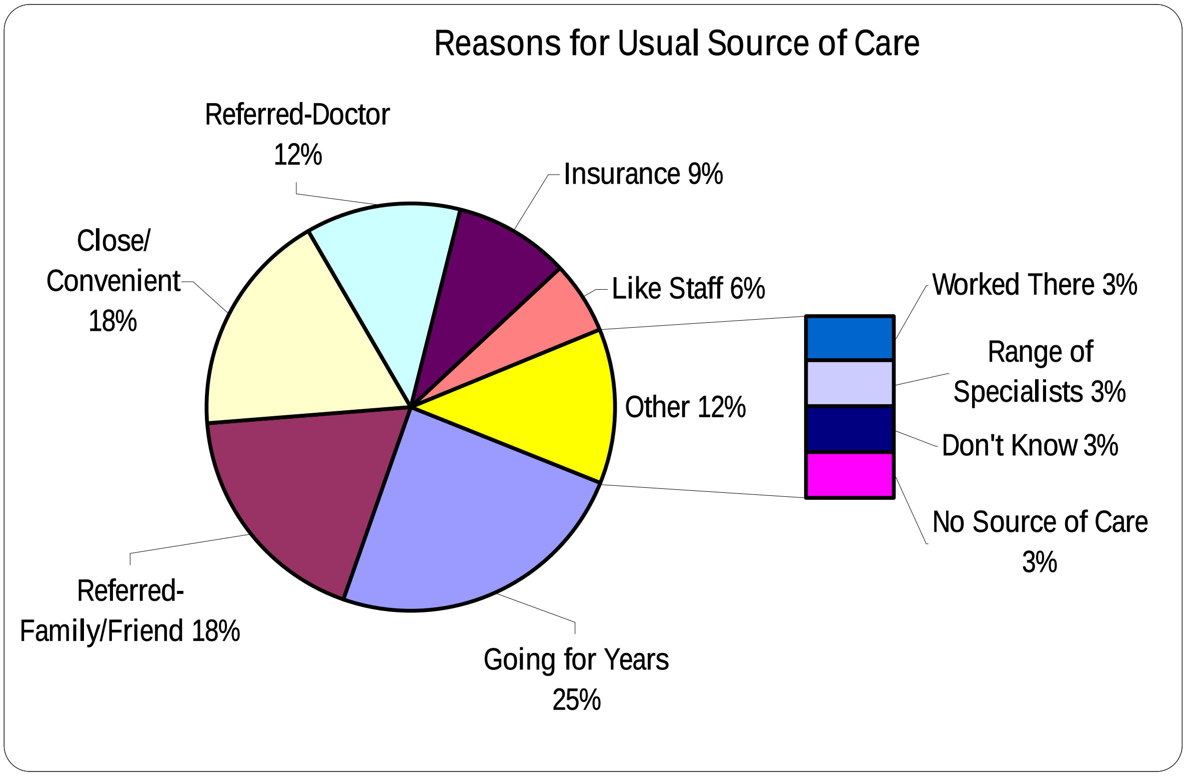


Figure 20. Reasons for opting for usual source of care

b. Satisfaction and Trust

When asked whether they were satisfied with the medical care they received, 31 (94 percent) of the individuals interviewed said that they were satisfied, some enthusiastically. Comments illustrating satisfaction follow:

> *"I'm satisfied. I can get in for my appointment soon."*
>
> *"I'm happy with the care."*
>
> *"He talks to you and explains things."*

Both individuals who were dissatisfied were from Site D. One was the lady mentioned in the previous section who felt her doctor was giving her "too many pills" and felt like a "guinea pig." Another said that there was too much aggravation and that she was "routed around" too much.

When asked if they trusted their health care providers, 29 (88 percent) of the interview participants said that they trusted them. It is interesting that there were two individuals who did not trust their health care providers yet were satisfied with their care. Comments from several points along the trust continuum follow:

> *"I trust them, especially because I've been going to them for over 20 years."*
>
> *"There is a physician assistant who works with him – I like her. She spends a lot of time talking with you, much more than him."*
>
> *"I trust my new doctor. He gives me better care. He started me on vitamins. When I was ill, he fought to get me admitted to the hospital. I don't trust the hospitals, though."*
>
> *"I trust him and his staff. I'm not sure about the arthritis specialist – I didn't like the way he talked to me."*
>
> *"Trust? (hesitation) You should always ask questions. They gave my mom the wrong insulin."*
>
> *"I don't really trust them. I think maybe I'm not getting the whole story. I've started to keep a diary with everything recorded."*

Also of note is that several interview participants mentioned trusting the on-site nurse. None mentioned not trusting her: "I trust (her). She's doing it with love."

c. Do you have any difficulty obtaining the care you need?

Interview participants were asked whether they encountered any problems in getting their health care. They were asked to consider all types of problems, including transportation, difficulty in getting appointments, interacting with staff, etc. None of the participants reported difficulty in obtaining medical care. Several described utilizing Access and OPT (Older Persons Transportation) to get to their appointments. The closest thing to a problem was with one individual who did not like to go anyplace where she had to ride an elevator ("I won't ride in elevators – I fell down a shaft when I was young"), but this was not considered a health care-related barrier.

d. How does living in this community affect how you obtain health care services?

In order to elicit information about the relationship between living in senior subsidized housing and patterns of obtaining health care, interview participants were asked to describe how living in their buildings affected them in terms of access to/utilization of health care. All participants reported that living in the high rise did not affect their access to care or their utilization of services. Representative comments include:

> *"It doesn't make a difference."*
>
> *"It didn't change anything when I moved here."*
>
> *"Living here doesn't make a difference."*

Only one individual (from Site D) mentioned the on-site nursing service: "It doesn't. Having [her] here is convenient, though."

4.3 QUANTITATIVE RESULTS: SF-8 HEALTH SURVEY

4.3.1 Test Administration and Scores

The investigator administered the SF-8 instrument, a measure of health-related quality of life, to interview participants. The same person administered the instrument in all cases, enhancing the consistency of the measure. The investigator read each question aloud while displaying it in large print. Answer choices also were read aloud while being displayed in large print. Results of the test are presented in Table 15. US norms are presented for comparison (Ware, Kosinski, Dewey, & Gandek, 2001). Since the mean age for study participants was 75 years, norms are provided for the total population, ages 70-74, and ages 75 and over (males and females). It can be seen that the combined comparison sites scored better in both physical and mental domains than the combined intervention sites (the two with the on-site nursing service).

Selected information also is presented graphically in Figure 21 to enable quick visual comparison of scores across sites. The average of the national norms for the relevant two age groups (ages 70-74 and ages 75 and over) is used for comparison. It can be seen that Site J, a comparison site, had the best scores in both physical and mental domains. Site C, the other comparison site scored the worst.

Table 15. Mean scores on SF-8 Health Survey

	Physical Summary Measure (PCS-8)	Mental Summary Measure (MCS-8)
US norms, males & females		
Total population	49.20	49.19
Ages 70-74	47.41	52.14
Ages 75 and over	45.46	51.98
Sites with nursing service (intervention)		
Site D	37.34	48.17
Site B	42.49	49.76
Combined intervention sites	40.05	49.01
Sites without nursing service (comparison)		
Site C	33.18	43.86
Site J	51.38	55.11
Combined comparison sites	42.28	49.49
All sites (total study participants)	41.00	49.21

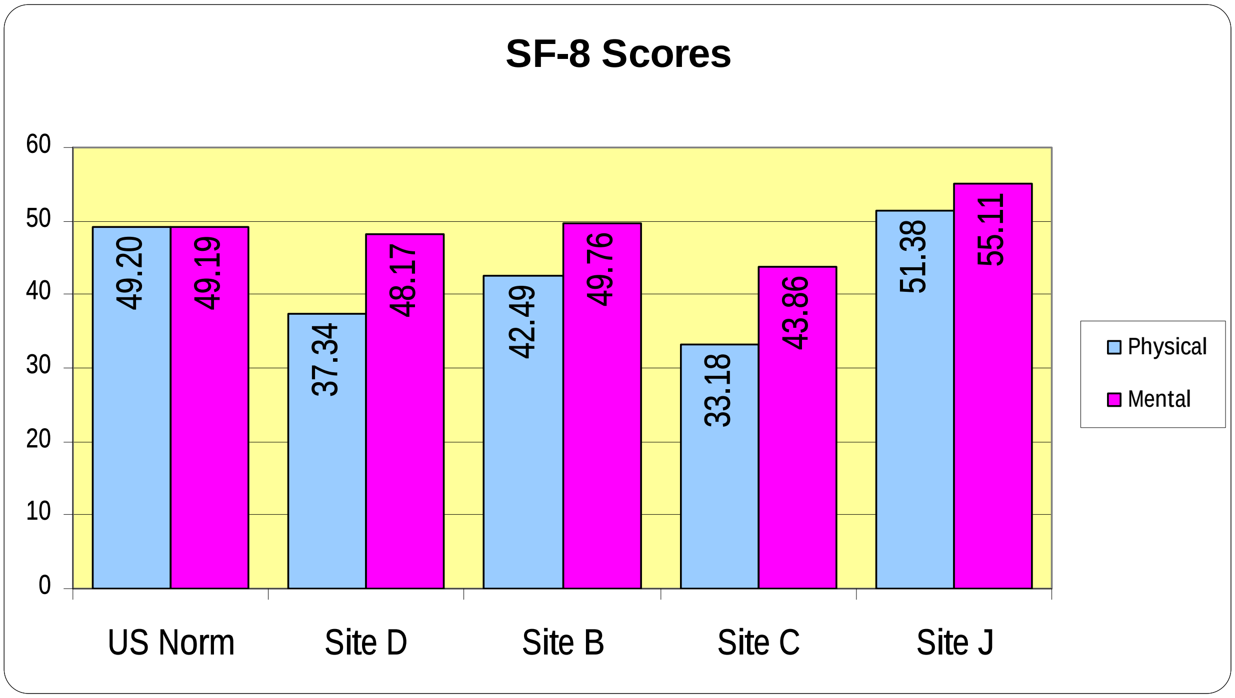


Figure 21. Mean scores on SF-8 Health Survey

4.3.2 Statistical Analysis

Several basic statistical tests were used to better understand the relationships among health-related quality of life and the categorical variables addressed in the interviews. Since SF-8 scores are interpreted in both physical (PCS-8) and mental (MCS-8) domains, analysis was done in both domains as well. Statistical tables can be found in Appendix E. It should be noted that the total sample size was only 33, so there is a risk of Type II error, i.e., not detecting a difference that actually exists. Results are summarized in Table 16.

Table 16. Summary of results of SF-8 quantitative analysis

Question	Test	PCS-8	MCS-8
Is there a difference across sites?	ANOVA	$p = 0.003$	*ns*
Is there a difference from national norms?	1-sample *t*-test	$p = 0.000$	*ns*
Is there a difference by self-assessed health?	ANOVA	$p = 0.000$	*ns*
Is there a difference by perception of living in building?	ANOVA	*ns*	*ns*
Is there a difference by quality of relationships with neighbors?	2-sample *t*-test	*ns*	*ns*
Is there a difference by whether building is seen as a community?	2-sample *t*-test	*ns*	*ns*
Does age predict SF-8 scores?	Linear regression	*ns*	*ns*

One-way analysis of variance (ANOVA) was used to reveal whether there was any difference in health-related quality of life (SF-8) scores across sites. The test for PCS-8 score differences across sites was significant at $p = 0.003$. Post hoc comparisons were done using Tukey's method, which showed that there were significant differences (individual confidence level = 98.91%) between Site J and Site D as well as between Site J and Site C, with Site J having higher scores in both cases. There were no significant differences across sites for the MCS-8 scores.

One-sample *t*-tests were used to compare SF-8 scores to the national norms. For the total sample, the PCS-8 hypothesis was $\mu = 49.20$ vs. $\neq 49.20$ (49.20 is the norm). The PCS-8 scores were significantly different than the national norm at $p = 0.000$. Site specific testing showed that the source of this difference was because Site D and Site C PCS-8 scores were significantly worse than the national norm at $p = 0.003$ and $p = 0.004$, respectively; Site B and Site J scores were not significantly different. For the total sample MCS-8 comparison to the norm (49.19), the hypothesis was $\mu= 49.19$ vs. $\neq 49.19$. The MCS-8 scores were not significantly different than the national norm.

ANOVA also was used to compare SF-8 scores by level of self-assessed health; the categories were *good, minor problems,* and *bad*. The test for PCS-8 differences by self-assessed health was significant at $p = 0.000$. Post hoc comparisons were done using Tukey's method, which showed that there were significant differences (individual confidence level = 98.05%) between good and bad self-assessed health as well as between good self-assessed health and having minor problems. In other words, PCS-8 scores were significantly better when self-assessed health is good as compared to self-assessed health being bad or having minor problems. There were no significant differences for the MCS-8 scores by self-assessed health.

ANOVA was used to reveal whether there was any difference in health-related quality of life (SF-8) scores by perception of what it feels like to live at the site; the groups were *negative, neutral,* and *positive*. There were no significant differences for either PCS-8 scores or MCS-8 scores.

SF-8 scores were examined with regard to quality of relationships with fellow residents; the groups were *negative, neutral,* and *positive*. However, only one participant reported negative relationships. Therefore, this individual's responses were omitted from the analysis, so the remaining groups were *neutral* and *positive*. Since there were only two groups, two-sample *t*-tests were used for the comparisons. There were no significant differences for either PCS-8 or MCS-8 scores by quality of relationships with fellow residents.

Two-sample *t*-tests also were used to test the significance of SF-8 scores by whether the building is perceived as a community, with the groups being *yes* and *no*. There were no significant differences in either PCS-8 or MCS-8 scores by perception of the building as a community.

Linear regression was used to investigate age as a predictor of SF-8 scores. For this small sample, age did not account for a significant amount of variation in either PCS-8 or MCS-8 scores.

4.4 UTILIZATION OF THE ON-SITE NURSING SERVICE

One of the original intents of the Senior Subsidized Housing Study was to conduct a program evaluation of the on-site nursing service using a matched pairs design. The sites with the on-site nursing service (the intervention sites) were Site D and Site B; comparison sites were Site C and Site J. Data were to include residents' perceptions and health outcomes. However, an effective evaluation proved to be unworkable because of low utilization and a dearth of health outcomes provided to study staff. Nevertheless, qualitative data about reasons for use, or lack thereof, of the service were collected in the interviews and health measurements were examined for the few documented participants. It also was noted that with one exception, participants were not able to distinguish between the original service being evaluated and the newer, and much less intense, on-site blood pressure measurement services. This individual said, “They’re hardly here at all now, an hour now and then. I liked it better when UPMC was here three days a week.”

4.4.1 Interview Findings

Participants at the intervention sites were asked to describe their reasons for utilization of the service. At Site D, while eight participants claimed to have used the service, records for only three were available. Therefore, the information presented should be interpreted with caution and its validity is not supported. At Site B, four individuals stated that they used the service (although they were infrequent users) – this was congruent with the number of health records received.

When asked about the reasons they used the service, the most common responses (and examples of interview comments) follow:

- The most common reason was the chance to monitor blood pressure and blood glucose levels between doctor visits.

  “I go because of the monitoring.”

  “I get my blood pressure checked regularly. It’s good to monitor it.”

  “I get my blood pressure monitored when they have it here.”

  “I use it as a stopgap.”

- Several individuals mentioned enjoying the opportunity to talk to the nurse and to others.

  “The main thing I like is that you can talk to her and some of the neighbors.”

"Pat listens to me when I need to talk and yells at me when I need it."

"The service is more talking than medical."

- In some cases, participants noted that they stopped in the office simply because it was there.

  "It's convenient."

  "I go because they're there."

  "I went because it was here."

Non-users were asked why they did not utilize the on site nursing service:

- The most common reason was that the individuals preferred to go to their own doctor:

  "I go to my own doctor. Besides, they keep changing."

  "I didn't really need it because I go to my doctor regularly."

- Several individuals also mentioned that they were busy with other activities and did not see the need to visit the nurse:

  "No, I never went to see them. I was never here at the time they were in their office."

  "I'm pretty busy and I don't have any reason to go there."

Interview participants at the sites without the service were asked whether they would use an on-site nursing service. At Site C, one person said that she would have her blood pressure checked; one person said that she would get her care from her own doctor; one was not sure; and four said that they might or would consider the service. At Site J, one person said that she would get her blood pressure checked any time it was available; another said that she prefers to go to her own doctor; another was too busy, and four said that they like to get their blood pressures checked at the Senior Center that is adjacent to the high rise.

4.4.2 Health Outcomes

Health records were available for three individuals from Site D and four from Site B. Examination of the cases shows longer term use of the nursing service by participants at Site D. In all cases, pulse and blood pressure were measured, in some cases, oxygen saturation was measured, and in some cases blood glucose level was recorded. Regular pulse and weight measures were done. Relevant measures for this study are blood pressure, blood glucose, and oxygen saturation. It should be noted that the nurse had to rely on the resident's own blood glucose monitoring equipment, but did assist in reading the measurement and recorded the reading.

Graphic representation of relevant health measures are provided in Appendix F. Trendlines were calculated to help detect changes in outcome measures. However, relatively low R^2 values limit the utility of this tool. In most case, improvements, if any, were small and in some cases, health indicators worsened. With very small improvements, the question to ask is whether the change is meaningful clinically, e.g., whether a three-point improvement in blood pressure clinically important. The resident's doctor should appropriately answer that question.

5.0 CHAPTER FIVE: DISCUSSION

This chapter will focus on meaning and relevance of the findings with respect to the research questions of the Senior Subsidized Housing Study.

5.1 WORLD VIEW OF RESIDENTS

How do elderly residents in subsidized housing communities perceive their communities, the on-site healthcare services, their health and well-being, and the relationship between those domains?

One of the objectives of this inquiry was to describe the world view of elderly residents in subsidized housing communities. By exploring their perceptions through a social construction "lens," important information about their perceived realities was elicited.

5.1.1 Routine

The findings related to routine revealed a sense of reliance on regular schedules. Most individuals had usual times for getting up in the morning, taking medications, eating meals, and doing housework. This extended to such things as picking up their mail and socializing with neighbors in the lobby or recreation area. Their weekly schedules were regular in terms of activities, e.g., church, shopping, attending formal activities sessions. Even when speaking with the investigator by telephone, to set up the interviews, participants knew their weekly schedules and never suggested omitting a usual activity. Participants were satisfied with this reliance on routine. It is possible that this is a reflection of regular schedules earlier in people's lives, i.e., when they were employed or lived with someone who had a work schedule. Thus, planners of any new endeavor, such as the introduction of a new service, would have to consider not only fitting in to existing routine but also becoming part of the routine.

Regarding favorite activities, findings showed that for the most part, the people interviewed enjoyed activities that had a social component. A positive finding was that when asked about least favorite activities, a third of the participants could not identify anything in their daily lives that they disliked.

5.1.2 Scope of Universe

The individuals interviewed led fairly active lives. On average, they were away from the high rise more than three times per week. Their world continues to encompass aspects outside of the housing site, including church, vacation, and social interaction. Some of the individuals still had cars and many took advantage of available public transportation. However, the convenience of on-site activities was appreciated. In general, signs of disengagement, or withdrawal from people and activities as one ages, were minimal. Because of the small number of subjects and the fact that they were self-selected, this study may not have reached an unknown proportion of individuals who were more isolated.

5.1.3 Social Context

As expected, more than half of the study participants were widowed. Some individuals said that it helps to talk to others when a loved one dies, but no one mentioned the availability of bereavement groups or educational experiences. Most of the individuals had children, grandchildren, and/or siblings. However, few interacted with them more than once a week. Most troubling, several described total or partial estrangement from close family members. Counseling or educational opportunities addressing grief and family issues may be of benefit to individuals in similar circumstances.

For the most part, participants in this study got along with fellow residents. However, less than half claimed to have close friends either within or outside of the building. This may be an early sign of disengagement, such as the case where one lady said, “I’m afraid to get too close – when you’re my age, people keep dying on you.” Even so, the participants enjoyed the social interaction of group activities. Activities that are introduced should take advantage of positive factors associated with social interaction. With regard to social context, we must be cognizant of the changes people experience when they move to a congregate housing setting. Most of the participants in this study had moved from a house in a traditional neighborhood to the high rise, where there are many more people in a smaller setting. It is not surprising that a common complaint was that there was a lack of privacy and that neighbors were “nosy.” Thus, it can be seen that this population values social interaction, yet is sensitive to invasion of privacy. Service programs should strive to address these competing forces.

5.1.4 Perception of Environment

Because of the evolution of this study to focus on the world view of residents in congregate senior subsidized housing, how they feel about their living environments is a critical consideration. In social construction theory, people construct their reality, but social processes are important in shaping common understandings about the world (Patton, 2002). Cultural factors influence the perceptions that people share, which in turn influence these common understandings. This is apparent in the distinction exemplified by Site D as opposed to the other three sites with regard to perception of environment. All sites had similar physical environments and housing services, e.g., security, utilities, appliances, common areas, residency requirements. Yet Site D participants had a markedly worse viewpoint. A common basis to the negative perception was the anxiety related to the presence of other residents who were younger and had social/psychiatric disorders. Specifically, they did not feel safe. Programs planners must recognize such site-specific factors and be prepared to adapt programs to the specific community.

The value of social interaction is again pervasive in this domain. The thing that people most liked about living in the housing sites was the people and companionship. This confirms the several findings discussed in the literature (Helgeson, 2003; Keyes et al., 2005; Kloseck et al., 2006).

5.1.5 Character of Community

In general, participants felt that their building was a community, although Site D again was the exception. How an individual defines community influences their perception of whether their living environment is a community. These residents are aware of the social aspects of community and see it as something positive. Interpersonal interaction is seen as an important aspect of community life. People believe that communication, “talking it out,” is the best, although not the only, way to deal with conflict. Their preferred way of addressing issues with management is in-person interaction. The sense of community is reinforced by the ease of access to management by the residents. This preference for interpersonal communication, as well as their sense of community as a construct defined by interpersonal connectedness, is related to the previously mentioned inclination toward activities with a social component and the value on interaction with others in the social context.

5.1.6 Subjective Health

As expected, based on the literature review, this population reports a high prevalence of chronic medical conditions, with most people having multiple conditions. The most common conditions were arthritis, hypertension, diabetes, and heart disease. It should be noted that the reported health problems, which are listed in descending order of frequency, follow a similar pattern to that reported in the literature (Administration on Aging, 2003): most frequent is arthritis, followed by hypertension, hearing impairment, heart disease, and diabetes (only heart disease and diabetes are switched in order). The individuals may not have considered hearing impairment as a health issue. All of these conditions can be helped with lifestyle changes, such as exercise and diet, which means that educational sessions can provide a direct benefit to people with the conditions. Diabetes was the most common condition that contributed to worsening of health over the last year or two, e.g., having to switch from dietary control to oral medication. The participants tend to be on multiple medications and see themselves as being compliant with their medical instructions. A surprising proportion feels that their health has been stable or even improved.

In spite of the prevalence of multiple chronic conditions, most interviewees perceived themselves as having good health or minor problems. They continued to participate in personal and social activities.

5.1.7 View of On-Site Services

According to the documentation obtained, the participants had relatively low utilization of the on-site nursing service. Only three Site D interviewees had documented health records from the on-site service, although all but one claimed to have used it. Surprisingly, this group of interviewees constituted 82 percent of the eligible subjects at this site. This is so because of the relative small size of the site and the trend toward allowing younger individuals with social diagnoses to reside there. Even individuals without health records provided information relevant to the residents' perception of the service. At Site B, a much smaller proportion of individuals used the service. Four individuals claimed to have used it and this was confirmed by health records. All interview participants were aware of the service, so relevant information was obtained regarding their perceptions, utilization, and non-utilization.

In general, participants felt that the on-site nursing service was convenient. The participants, especially at Site D, spoke very highly of the nurse and valued the opportunity to talk with her. The nurse at Site D made coffee every day and residents tended to come to the office at usual times and stay for a while chatting with the nurse and each other. There was less of a "coffee klatch" atmosphere at Site B, but nonetheless, residents thought the nurses were nice, even residents who did not use the service. They also felt that they could trust the on-site nurses. There did not appear to be a relationship between the interview participants' well-being and their view of the on-site service – all had a positive view of the service. The findings with regard to social context and sense of community indicated a value placed on social interaction. This was related to and reflected in the perception of the on-site service, i.e., the chance to talk to the nurse was the second most common reason for using the service (after health indicator monitoring) but during the interviews, even individuals who said their main reason for going to the nurse was monitoring also said that they like the opportunity to interact and talk.

5.2 HEALTH CARE UTILIZATION

What are the extent and patterns of health care utilization in this population?

5.2.1 Utilization of External (Traditional) Health Care Services

In early staff discussions about the on-site nursing service, it was assumed that this population would not be visiting traditional health care providers regularly. The presupposition was that people would be disinclined to seek health care because of lack of trust in medical professionals and health care institutions as well as barriers related to transportation and lack of awareness of services. These assumptions proved to be not true. All but one individual had usual sources of care and visited them regularly; this one individual had stopped seeing her physician due to lack of trust. Most had been going to their regular physicians for years and were satisfied with their care. Most individuals trusted their physicians. Again contrary to initial assumptions, none of the interviewees had difficulty getting the care they needed. All could get appointments with primary care providers and specialists when needed.

The findings of earlier studies that noted "…access to care by residents of subsidized housing could be improved by addressing transportation and financial barriers, and by providing more services to residents on site" (Malmgren et al., 1996; Sinay, 2002), were not supported by this study. Contrary to what the study planners anticipated, transportation difficulties did not pose a barrier to access. This finding also was noted by Sinay (2002). Some individuals had automobiles and the others primarily relied on Older Persons Transportation (OPT) and Access, a service for elderly and disabled people. Members of this population did not perceive that living in their communities made a difference in the way they sought health care.

5.2.2 Utilization of On-Site Nursing Service

As previously mentioned, all interview participants were aware of the service, so relevant information was obtained regarding their utilization and non-utilization of the on-site nursing service. The patterns of utilization were quite different between the two sites with the on-site nursing service. At Site D, the service users visited the nurse three to eight times per month for a period of 13 to 14 months. At Site B, the exposure to the intervention was less, one to three visits for a period of one to four months. The exposure to the intervention at Site D appears adequate in terms of duration (over a year) but at best, only one resident was documented as visiting the nurse more than once a week. At Site B, the duration was only about four months, so both the duration and the frequency of use were not very intense. It is likely that more frequent visits to the nurse over a longer duration would be necessary for any benefit to be detected.

The most common reason that people went to the on-site nurse was for monitoring, most commonly of blood pressure. Blood glucose monitoring was done for diabetics, but they needed to bring their own glucose monitoring device. The second most common reason was that they enjoyed talking to the nurse. Again we see the relationship between the value on social interaction and utilization of the service.

The association between traditional external sources of care and the on-site service also should be considered. Service users perceived the on-site service as a way to keep track of health indicators more frequently than they could go to their doctor's office. Non-users saw the service as a replacement for their usual source of care and did not feel the need to replace their physicians. Some did not use the service because it was only available on for limited times on weekdays and their schedules conflicted with those times. A service that was available on an evening or weekend might attract this group to use the service.

5.3 PERCEPTIONS AND UTILIZATION

Are certain health perceptions associated with patterns in healthcare utilization? What is the nature of the association and the patterns?

5.3.1 Trust

The changing character of the health care system and the public's view of its depersonalization of the patient make the issue of trust increasingly important. There has been an increase in nurses as primary care providers, i.e., nurse practitioners and on-site community-based nurse providers. Because it seems reasonable that the nurse-patient trust relationship differs from the physician-patient trust relationship, development of a non-physician trust measurement tool, while beyond the scope of this study, is a sound direction for future research.

5.3.2 Social Interaction

Many studies investigating health and healthcare utilization use samples from service providers and facilities. In contrast, this study used a community-based sample, thus allowing examination of a variety of factors that potentially contribute to individuals' health seeking behavior. The overriding importance of social interaction has been reinforced in various domains of this inquiry – routine, activities, community, and health care utilization.

5.3.3 Health Practices

Health perceptions and awareness appeared to be more associated with health behavior in traditional settings external to the housing sites, i.e., regular physician/source of care. The individuals interviewed were very aware of their health conditions and in general reported that they had regular doctor's appointments, took their medications appropriately, and followed doctor's orders. There did not appear to be an association between health perceptions and utilization of the on-site service. This supports an earlier observation that planners should view social needs as more effective motivators than medical practices for using this type of service.

5.4 HEALTH-RELATED QUALITY OF LIFE

How would the residents' health-related quality of life be characterized?

Health-related quality of life does not appear to be associated with the use of the on-site nursing service in this particular study population. Based on the interviews, specifically the discussions of anxiety associated with safety concerns, it was expected that Site D would have substantially lower average SF-8 physical and mental scores. This was not apparent. Site D had the lowest level of self-assessed good health but the second lowest scores on both the physical and mental domains of the SF-8. However, statistically, Site D was significantly worse than only one site, Site J. The highest average scores on the SF-8 in both physical and mental domains were at Site J as was the highest proportion of self-assessed good health and the highest proportion of people reporting stable or improved health over the past one or two years. Site J's scores were significantly higher than Sites D and C and were nominally, although not significantly, higher than Site B. And Site J was the only site with no individuals reporting self-assessed bad health. Statistical significance of these associations should be examined with larger samples in future studies.

The group of participants as a whole scored lower than the established norm in the physical domain of the SF-8 and not significantly different than the norm in the mental domain. As a matter of fact, there were no significant differences in any of the tests of scores in the mental domain. This suggests that the participants experienced well-being that would be expected for individuals in their age groups. With regard to the physical domain, other than differences across sites, the only significant finding was that individuals with good self-assessed health also scored better on the physical domain of the SF-8.

5.5 UTILIZATION-FOCUSED EVALUATION

With regard to evaluation of outreach programs and community-based interventions, we must keep in mind the distinction between measuring difference and making a difference. Katz (2004) points out that healthy lifestyle interventions may not work outside the controlled implementation environment of the research setting. Sorensen, et al., recommends the following direction for community-based interventions: "(a) designing interventions that target multiple levels of influence; (b) addressing social inequalities in disease risk; (c) involving communities in program planning and implementation; (d) incorporating approaches for "tailoring" interventions at the population level; and (e) utilizing rigorous process evaluation" (Sorensen et al., 1998). Effective evaluation proved to be a great challenge in this study. The original intent was to conduct a utilization-focused evaluation comprised of both summative and formative components.

The summative component relied on health outcomes to determine the effectiveness of the on-site nursing service in improving the health of residents, and was intended to inform decisions related to program continuation. As has been noted, the full volume of anticipated health outcomes data was not forthcoming. The minimal amount of health information that was available was examined but showed no distinct pattern of improvement; as a matter of fact, there were as many instances of worsening health indicators as improving ones. Cases are presented in Appendix F. In another study by PK Diehr, et al. (1979), there was no improvement in health resulting from a program in which low income individuals were provided with fully prepaid health care in their community. However, it should be noted that measurement was undertaken after only one year of enrollment in the Diehr program. Thus, in an inquiry such as the Senior

Subsidized Housing Study, it is likely that more frequent visits to the nurse over a longer duration would be necessary for any benefit to be detected.

In the Senior Subsidized Housing Study, the data received did not document the full range of interventions provided through the service. For example, the program included educational offerings, e.g., nutrition and exercise education, but the records received did not document these program activities, so it is impossible to know which participants were exposed to them. However, the "bottom line" is that the summative component of the evaluation was rendered moot because the service provider lost the county contract that funded the program and it was discontinued, at least in its original form and intensity. Although an effective outcomes evaluation was not feasible, a limited amount of process information was available to drive the formative evaluation component. A great deal of information gathered from the interviews would have been useful in improving and enriching the program, but now can be used to develop recommendations for future programs. Of particular interest are comments related to reasons people used or did not use the service.

Patton (1997) notes that utilization-focused evaluation concentrates on intended use by intended users. Intended users, or stakeholders, included the housing authority (the funding agency), the service provider, the health care community (because of the potential utility of an innovative service), and most importantly, the residents of the housing communities. One of the first targets for improvement in this program is in the involvement of the residents themselves in planning service to be provided. There was a lot of conceptualization in the early stages. More operationalization was needed to provide a more useful service. It would be more effective to involve the residents in planning more constructively and more proactively. According to Bernal, et al. (2004), "Many times, out of necessity and due to time constraints, universities enter communities with a commando raid type mentality. They do not have a firm foundation for building a sound partnership and choose agencies based on expediency. Promises are made that are impossible to deliver, and unrealistic expectations emerge on both sides that usually lead to trouble." In the Senior Subsidized Housing Study, the tenant councils were involved early, more or less as proxies for the tenants themselves. But the interviews showed that the tenant councils did not necessarily represent the true views of the residents. Even if the views were accurately represented, the residents were not given the empowerment of being able to specify their preferences with regard to the specific services provided and patterns of delivery. A better plan would have been to go directly to the residents either via telephone or in person.

A reasonable amount of "marketing" was done prior to implementation of the on-site service, including posters, open houses, and communication with the tenant councils. However, the service was essentially passive in that residents initiated the visits and showed up at the office at their convenience. Interestingly, at Site B, there was a problem in getting an office, so initial assessments were done door-to-door. As a result, there was a high rate of initial assessments at that site. Perhaps a model that takes such an active approach for treatment as well as assessment would be effective. An example might be setting up a plan (remember the reliance on routine) with each service participant and contacting them if they miss a visit.

Barriers to service implementation, largely related to political issues and problems establishing the on-site office, were common in the early stages of the service. An example of a political issue was the housing authority's request to implement activities programs at all sites, even the comparison sites, thus diluting the effect of the on-site nursing service. It is also possible that any effect might be due to the activities sessions rather than the service. A further complication is that office locations were difficult to establish and often were reassigned/moved. Substantial delays occurred.

Evaluation does not occur in a test tube – that is the nature of the beast. So the evaluator must be able to constantly adapt, draw meaning, and provide information for current and future programs. One of the outcomes of this study is the development of a list of recommendations for implementation of an on-site nursing service and a model illustrating an ideal service, to be presented in the next chapter.

6.0 CHAPTER SIX: CONCLUSIONS

6.1 SUMMARY

The Senior Subsidized Housing Study examined the perceptions about health and living in congregate subsidized housing as well as the health behavior of a group of elderly residents in four subsidized housing sites in an urban area. Health-related quality of life is measured and examined with relation to other domains of inquiry. The public health significance of this study is that it is expected to help achieve the first goal of Healthy People 2010: Increase quality and years of healthy life. The intent of this goal is "to help individuals of all ages increase life expectancy and improve their quality of life" (*Healthy People 2010*, 2005). The perceptions of the individuals interviewed and their health care utilization behavior inform the development of a model for on-site nursing care delivery in a senior subsidized housing environment. The findings of this study can be used to shape the structure, content, and methods of delivery of on-site health services.

6.2 THE PEOPLE

The individuals interviewed were a remarkable group ranging in age from 60 to 94 years. They had a wide range of opinions and perceptions and a willingness to share them. A value on social interaction was pervasive throughout the domains addressed in the Senior Subsidized Housing Study, with most participants claiming to get along with everyone. However, only about half maintained close friendships either within or outside of the building. They depicted complex family relationships, but not a high frequency of contact with family members, primarily because of distance and family members' "busy lives." The interview participants displayed an adherence to regular daily and weekly schedules. More than half felt positive about living in their settings and more than a quarter felt neutral about their living situation. Most had moved to the subsidized high rise because of financial reasons related to both rent and upkeep requirements on their homes.

More than four-fifths of interview participants felt that they were in good health or had minor problems. Contrary to expectations, the vast majority had usual sources of medical care and visited their physicians regularly. Further, none experienced any difficulty in getting the care they needed and none described barriers. With regard to health-related quality of life, as a group the participants scored lower than national norms in the physical domain and about equal in the mental domain.

6.3 SITE-SPECIFIC CONCLUSIONS

Each site had a distinct "personality." Site D was characterized by a sense of fear related to crime and overall negative well-being. A venerated, although some say outmoded, theory seems relevant here – Maslow's Hierarchy of Needs. In Maslow's hierarchy, there are five levels of need for human beings, each of which is dependent on the lower ones for realization – physiological needs, safety, belonging, esteem, and self-actualization. According to Maslow, unmet needs dominate one’s outlook and inhibit fulfilling higher needs (Zalenski & Raspa, 2006). Thus, the lack of a feeling of safety at Site D is a substantial cause for concern. And to further the Maslow viewpoint, it is not surprising that Site D had more negative responses on social indicators than any of the other sites – one must have safety before belonging. For example, they had the greatest proportions of negative responses with regard to getting along with neighbors, sense of community in building, and perception of living in the building.

Site B was a very social building. This high rise had the largest proportions of positive social interactions, sense of community, and perception of living in the building. Interestingly, they had the second largest proportion of self-assessed good health or only minor problems but the smallest proportion of stable or improved health. It would appear that they believe they are in relatively good health but that it is declining.

Site C was characterized by “middle of the road” findings on most measures. They were one of the middle two of the four sites almost every time. One notable exception was health-related quality of life. In that case, they scored the lowest in both physical and mental domains. This was a surprise because in informal interaction, e.g., casual conversation in the lobby, they seemed to be in good spirits. This group was very enthusiastic about the formal activities sessions. The investigator sat in on two sessions and enjoyed the laughing, teasing, applause, etc., that demonstrate how people were enjoying themselves. One unique feature of this site was that it is located some distance from the metro area. This might explain the fact that this group was tied for the greatest proportion of having a close friend in the building.

Site J appeared to be the healthiest. They had the greatest proportions of self-assessed good health or only minor problems and stable or improving health. They also had the highest scores on health-related quality of life in both physical and mental domains, above national norms. A unique feature at this site was the proximity of a senior activity center, which provided a source of social interaction. Many of the interview participants mentioned volunteering at the center.

6.4 THE ON-SITE NURSING SERVICE

Effective outcome evaluation of the on-site nursing service was not feasible because of the low level of utilization and the unexpected dearth of health outcomes data. However, several indicators strongly suggested that was not effective, and indeed may not have been appropriate, at these particular sites. Site D, which had the service, reported the worst self-assessed health, the highest rate of reported health problems, and the second lowest scores on both the physical and mental domains of the health-related quality of life measure. Site B, which also had the service, had the highest proportion by far of individuals reporting worsening health. Site J, which did not have the service, had the best self-assessed health, the lowest rate of reported health problems, and the best scores on both the physical and mental domains of the health-related quality of life measure. Further, the few health outcomes data that were available showed little to no improvement in clinical indicators, and in some cases, worsening of the measures.

Although there was a lack of health outcomes data with which to evaluate the effectiveness of the on-site nursing service, interview data provided a basis for process evaluation and informed the development of a recommended model for this type of service. Several relevant process issues arose during the interviews. For one thing, the tenant councils were involved at the planning stage, but only about half of the interviewees felt that the tenant councils reflected their opinions. Therefore, direct involvement of at least a representative sample of residents may be a better approach. Another issue was that project staff meetings and discussions revealed that the on-site nursing service was more comprehensive in that it was the conduit for a range of educational interventions on topics such as nutrition, fitness, and disease prevention. Attendance at these sessions was not documented in the records, which precludes examination of the association between health outcomes and awareness of health issues. Another process issue focuses on the method by which visits to the nurse are initiated. The on-site service was marketed adequately, but essentially was passive because it was up to the residents to initiate the visit. A more active approach may be more effective. Finally, the value the residents place on social interaction cannot be overlooked and should provide insight for the development of motivators for service utilization. A model for a suggested on-site nursing service was developed based on these findings and will be described in this chapter. But first, three health issues are presented as illustrations for areas that may benefit from such a service.

6.5 EXAMPLES OF HEALTH ISSUES TO ADDRESS

6.5.1 Diabetes

A 2002 Michigan study recommends a multifaceted disease management approach in the treatment of diabetes, including an emphasis on self-management and participatory decision-making. Both were shown to be associated with improved diabetes management. This approach is time-consuming, and thus rarely realized in traditional doctor's office visits, especially in the managed care environment (Heisler, Bouknight, Hayward, Smith, & Kerr, 2002). Self-management and participatory decision-making would seem to be feasible in an on-site nursing service like the one proposed in this project. Another study showed improved blood glucose control where there is continuity in health service site and provider (Mainous, Koopman, Gill, Baker, & Pearson, 2004), another approach that would lend itself to an on-site service. On a positive note, at least for the elderly population, in a 1999 study of 6,565 adults with diabetes, it was found that individuals age 65 and older received significantly more diabetes-related preventive care than the group aged 18-44 (Persell, Zaslavsky, Weissman, & Ayanian, 2004).

6.5.2 Influenza

Influenza vaccinations also provide an illustration. Individuals aged 65 and over are one of the risk groups for influenza-related complications. Approximately ninety percent of the deaths from influenza and pneumonia, a complication of influenza, occur in older adults. According to the Centers for Disease Control and Prevention, improvement of vaccine coverage levels is recommended for this group. The Advisory Committee on Immunization Practices suggests such practices as reminder/recall systems and standing orders programs (Harper, Fukuda, Uyeki, Cox, & Bridges, 2005), both of which could be conducted from an on-site service program.

6.5.3 Medication Management

Older individuals frequently have multiple conditions, are treated by several physicians, and also use over-the-counter medications that are not tracked by health care professionals. Assistance with managing drug regimens, beyond the initial direction at the time of the prescription, is a service that could have positive health outcomes for an elderly population. While the group of individuals age 65 and older constitutes approximately 13 percent of the population, they account for 32 percent of prescription drug use. Inappropriate drug use, e.g., taking a medication not appropriate for medical condition, is common among elderly individuals living in the community, particularly with regard to central nervous system and cardiovascular agents (Hanlon, Fillenbaum, Schmader, Kuchibhatla, & Horner, 2000). Interestingly, the Hanlon study of inappropriate drug use showed no relation with demographic variables but did show a positive correlation with number of prescriptions, an important consideration given the greater number of chronic conditions in the older population. Older people also frequently keep leftover drugs after prescriptions have been changed resulting in excessive drugs being stored in the home. Wasserfallen, et al., suggests development of innovative solutions to reduce these problems (Wasserfallen, Bourgeois, Bula, Yersin, & Buclin, 2003). Regular interaction with an on-site nurse could include education about medication use, including side effects, monitoring regarding multiple drug use, drug interactivity, and compliance.

6.6 ON-SITE SERVICES: A PROPOSED MODEL

It was found that the on-site nursing service examined in the Senior Subsidized Housing Study, while well-intentioned, did not take the appropriate form for the sites in which it was implemented. The staff members were committed, enthusiastic, and capable health care professionals. It is not that the model was ineffective, but rather that it may have been more suitable for a different population.

In the early stages, residents should be involved in planning the content and delivery patterns of the service. This would mean communication with either all of the residents, i.e., through letter or telephone outreach, or a sizable representative sample. The tenant council should be included to assure formal sanction, but should not be relied on as reflecting the views of the residents at large. This study shows that it is critical to perform a thorough needs assessment that collects information from the actual users of a proposed intervention. The needs assessment should be multi-dimensional, addressing health and social needs; for example, because of the value placed on social interaction, social aspects of all service components must be considered. It also must take into account the users' needs with regard to availability (hours of operation) of the service – the service should be provided on a regular schedule several times per week and should have at least one option for weekend or evening hours. Also at this early stage, ongoing evaluation and program improvement processes should be instituted.

Planners must not be rigid in implementing a program, but rather must be flexible, responsive to site-specific needs, and open to a wide range of service models. The needs assessment may show that a nursing model, such as the on-site nursing service, is most appropriate. It may be that a primarily social model would best meet the needs of the residents, e.g., one that focuses on increasing opportunities for social interaction and provides education on such things as methods of communication. Another possibility is that a navigator model would optimally address the residents' needs – in these cases, adequate services exist in the community, but the residents need help in "navigating the system," i.e., in becoming aware of and accessing existing services. Whatever the indicated model, program planners must look at the residents within the context of their environments and must be open to more creative interventions that address the actual needs of an increasingly diverse older population.

Methods to meet social needs should be shaped as motivators for service utilization. Since this population values social interaction, yet is sensitive to invasion of privacy, procedures to protect privacy must be established. Staffing of on-site programs for the elderly also should be considered. Haworth notes that program management by a specialist in gerontology can optimize quality, coordinated, and accessible care that is particularly suitable for the target population (Haworth, 1993). However, the findings from the Senior Subsidized Housing Study indicate that the on-site nurse's personality and ability to engage people may be a more important consideration. The method of promoting utilization of the service should be proactive; specifically, the staff should initiate the affiliation. This affiliation should include a health assessment, mutually developed treatment/monitoring plan, periodic "tweaking" of the plan, and an agreed upon reminder/recall plan where the staff contacts the resident if necessary.

Activities sessions should be coordinated with the nursing service – educational opportunities can be presented in conjunction with diversional pursuits to enhance participation and improve the likelihood that the education will be well received. Educational sessions should target awareness for diabetes, arthritis, hypertension, heart disease, and any other conditions prevalent at the site. Periodic updates, e.g., newsletters, should be sent to all residents regardless of their utilization of the service, to promote awareness and involvement in decision-making. Treatment plans should address all of the participant's current medical conditions, e.g., diabetes, and should assess and address the individual's procedures for medication management. Groups should be established to provide support in the areas of grief and family issues.

The Senior Subsidized Housing Study examined an on-site nursing service. Because the data collected were specific to this service alternative, a proposed model for this particular option for service delivery was developed. The proposed on-site nursing service for an elderly population in subsidized housing is represented in Figure 22 (at the end of this section). The "Inputs" component is describes the context and resources that provide a framework for the service. The "Outputs" component depicts the mechanisms of service delivery, what the service does, i.e., the program activities, and the individuals who interact in service delivery. The "Outcomes" component illustrates what the service is intended to achieve, in terms of short, medium, and long range accomplishments.

Community health outreach grounded in comprehensive needs assessment can help assure that the aging individuals residing in such housing receive appropriate, complete, and customized services.

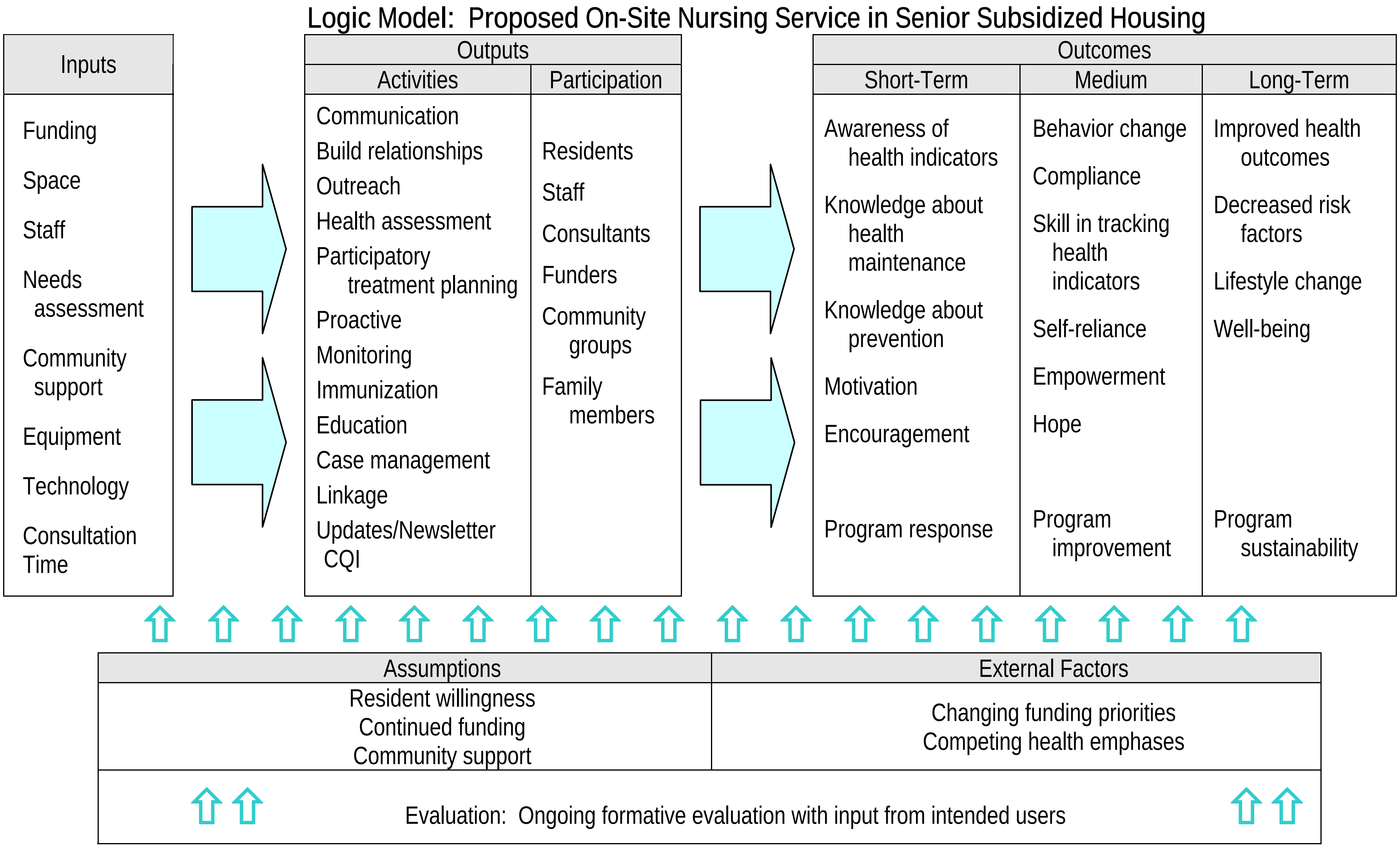


Figure 22. Logic model: Proposed on-site nursing service in senior subsidized housing

APPENDIX A

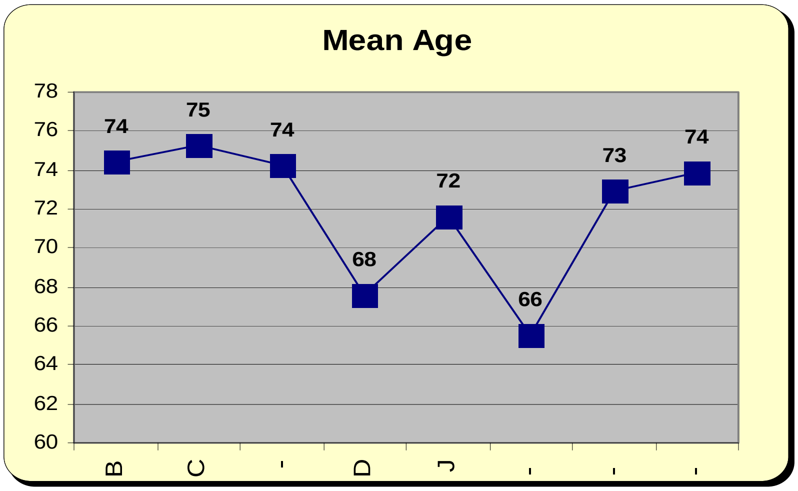
CHANDLER CENTER FOR COMMUNITY LEADERSHIP CONTINUUM OF COLLABORATION: RANGE OF CHOICES OF COMMUNITY BASED LINKAGES

Levels	Purpose	Structure	Process
Networking	Dialogue and common understanding Clearinghouse for information Create base of support	Non-hierarchical Loose/flexible links Roles loosely defined Communication is primary link among members	Low key leadership Minimal decision making Little conflict Informal communication
Cooperation or Alliance	Match needs and provide coordination Limit duplication of services Ensure tasks are done	Central body of people as communication hub Semi-formal links Roles somewhat defined Links are advisory Little or no new financial resources	Facilitative leaders Complex decision making Some conflict Formal communication within the central group
Coordination or Partnership	Share resources to address common issues Merge resource base to create something new	Central body of people consists of decision makers Roles defined Links formalized Group leverages/raises money	Autonomous leadership but focus is on issue Group decision making in central and subgroups Communication is frequent and clear
Coalition	Share ideas and be willing to pull resources from existing systems Develop commitment for a minimum of three years	All members involved in decision making Roles and time defined Links formal with written agreement Group develops new resources and joint budget	Shared leadership Decision making formal with all members Communication is common and prioritized
Collaboration	Accomplish shared vision and impact benchmarks Build interdependent system to address issues and opportunities	Consensus used in shared decision making Roles, time and evaluation formalized Links are formal and written in work assignments Resources and joint budgets are developed	Leadership high, trust level high, productivity high Ideas and decisions equally shared Highly developed communication systems

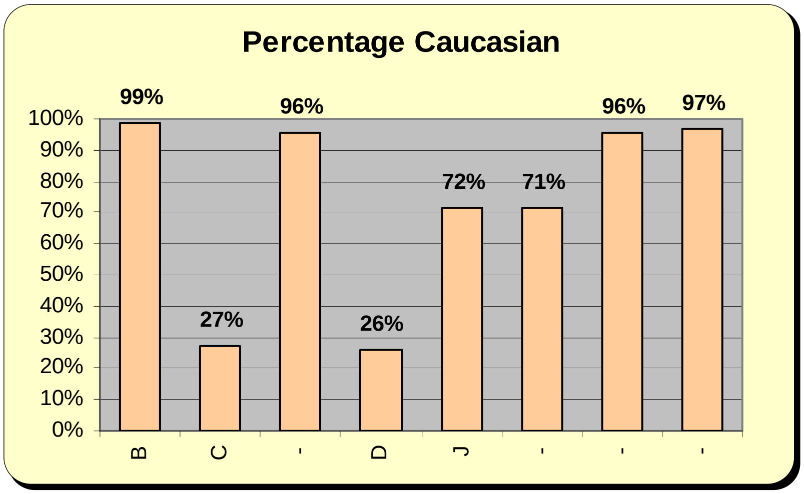
APPENDIX B

SUBSIDIZED HOUSING STUDY MATCHING PROCESS

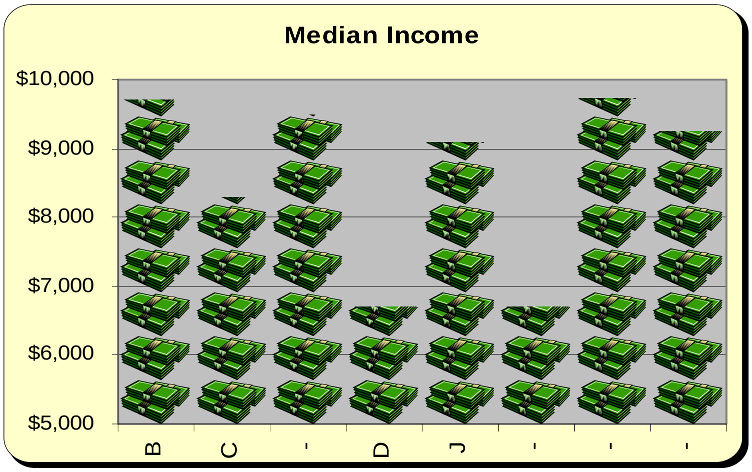
Site:	Mean Age:
Site B	74
Site C	75
Site -	74
Site D	68
Site J	72
Site -	66
Site -	73
Site -	74
Overall	72



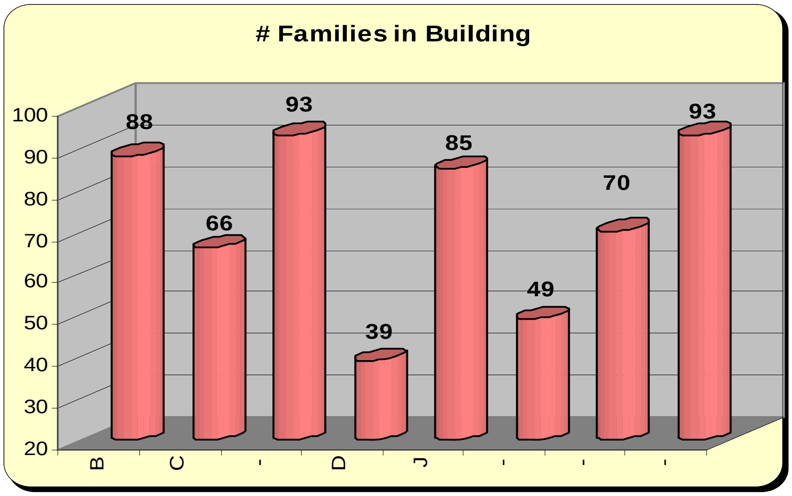
Site:	% Caucasian
Site B	99%
Site C	27%
Site -	96%
Site D	26%
Site J	72%
Site -	71%
Site -	96%
Site -	97%
Overall	73%



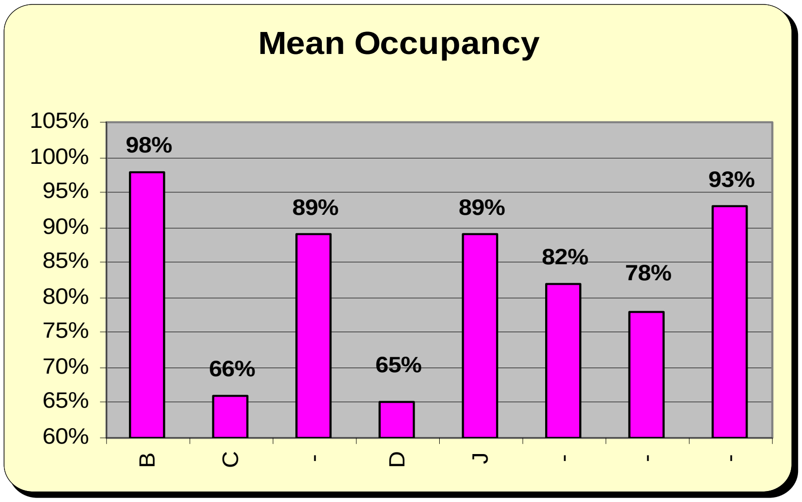
Site:	Median Income
Site B	$9709
Site C	$8304
Site -	$9498
Site D	$6695
Site J	$9099
Site -	$6713
Site -	$9740
Site -	$9252
Overall	$9175



Site:	# Families in Building
Site B	88
Site C	66
Site -	93
Site D	39
Site J	85
Site -	49
Site -	70
Site -	93
Overall	73



Site:	% Occupancy
Site B	98%
Site C	66%
Site -	89%
Site D	65%
Site J	89%
Site -	82%
Site -	78%
Site -	93%
Overall	83%



APPENDIX C

SUBSIDIZED HOUSING STUDY INTERVIEW FRAMEWORK

#	Question	Optional Probes	Domain
1	Please describe your typical day.	Is a weekday different than a weekend day?	Routine
	What activities do you most enjoy? Why?		
	What activities do you least enjoy? Why?		
2	How often do you spend time away from (high rise)?		Scope of Universe
	What do you do when you are away from (high rise)?	Who, what, when, where?	
3	What kind of relationships/ interactions do you have with your fellow residents?	General interactions, special friends?	Social Context
	Please tell me about your family.		
4	What does it feel like to live at (high rise)? Why did you move here?	How does it differ from where you lived before?	Perception of Environment
	What do you most like about living at (high rise)?		
	What do you least like about living at (high rise)?		
5	How would you define community? Is this building a community?	How is conflict resolved?	Character of Community
	How are your opinions expressed to management?	How does tenant council reflect your opinion?	
6	Please describe your health as it is now.		Subjective Health
	Has your health changed over the past year or two?	Concerns? How changed?	
7	Where do you usually obtain medical care? Why?	Is it satisfactory? Trust?	Access to Care and Healthcare Delivery Process
	Please describe any difficulty you might have obtaining the care you need?	Is this a new or ongoing difficulty? What barriers?	
	Have you utilized the on-site nursing services? Why/why not?	What services would you like to see offered here?	
	How does living in this community affect how you obtain health care services?	Address on-site and external services.	
	What is your opinion of the activities that are offered?	Is socialization affected?	

APPENDIX D

SF-8 QUESTIONS

1. Overall, how would you rate your health during the past 4 weeks?
   - ○ Excellent
   - ○ Very good
   - ○ Good
   - ○ Fair
   - ○ Poor
   - ○ Very poor

2. During the **past 4 weeks**, how much did physical health problems limit your usual physical activities (such as walking or climbing stairs)?
   - ○ Not at all
   - ○ Very little
   - ○ Somewhat
   - ○ Quite a lot
   - ○ Could not do physical activities

3. During the **<u>past 4 weeks</u>**, how much difficulty did you have doing your daily work, both at home and away from home, because of your physical health?

    ○ None at all
    ○ A little bit
    ○ Some
    ○ Quite a lot
    ○ Could not do daily work

4. How much <u>bodily</u> pain have you had during the **<u>past 4 weeks</u>**?

    ○ None
    ○ Very mild
    ○ Mild
    ○ Moderate
    ○ Severe
    ○ Very severe

5. During the **<u>past 4 weeks</u>**, how much energy did you have?

    ○ Very much
    ○ Quite a lot
    ○ Some
    ○ A little
    ○ None

6. During the **<u>past 4 weeks</u>**, how much did your physical health or emotional problems limit your usual social activities?

    ○ Not at all
    ○ Very little
    ○ Somewhat
    ○ Quite a lot
    ○ Could not do social activities

7. During the **past 4 weeks**, how much have you been bothered by emotional problems (such as feeling anxious, depressed or irritable)?
   - ○ Not at all
   - ○ Slightly
   - ○ Moderately
   - ○ Quite a lot
   - ○ Extremely

8. During the **past 4 weeks**, how much did personal or emotional problems keep you from doing your usual work, school or other daily activities?
   - ○ Not al all
   - ○ Very little
   - ○ Somewhat
   - ○ Quite a lot
   - ○ Could not do daily activities

APPENDIX E

STATISTICAL TABLES AND GRAPHS

E.1 SF-8 SCORES BY SITE

E.1.1 ANOVAs – SF-8 by Site

PCS-8

ANOVA: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
D	9	336.0529	37.33921	68.33274
B	10	424.9275	42.49275	109.7486
C	7	232.2262	33.17517	90.22328
J	7	359.6852	51.38361	25.04272

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1326.226	3	442.0752	5.759302	0.003228	2.93403
Within Groups	2225.996	29	76.75847			
Total	3552.221	32				

MCS-8

ANOVA: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
D	9	433.5613	48.17348	80.20224
B	10	497.6286	49.76286	142.3877
C	7	307.0356	43.86222	81.88932
J	7	385.7558	55.10797	53.59638

ANOVA

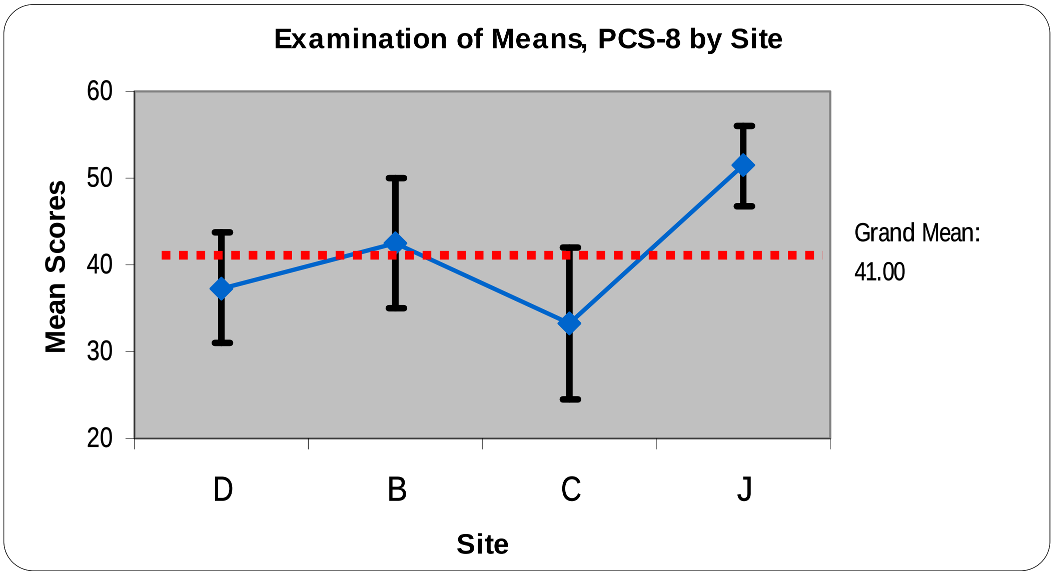
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	456.4197	3	152.1399	1.612581	0.207943	2.93403
Within Groups	2736.021	29	94.34555			
Total	3192.441	32				

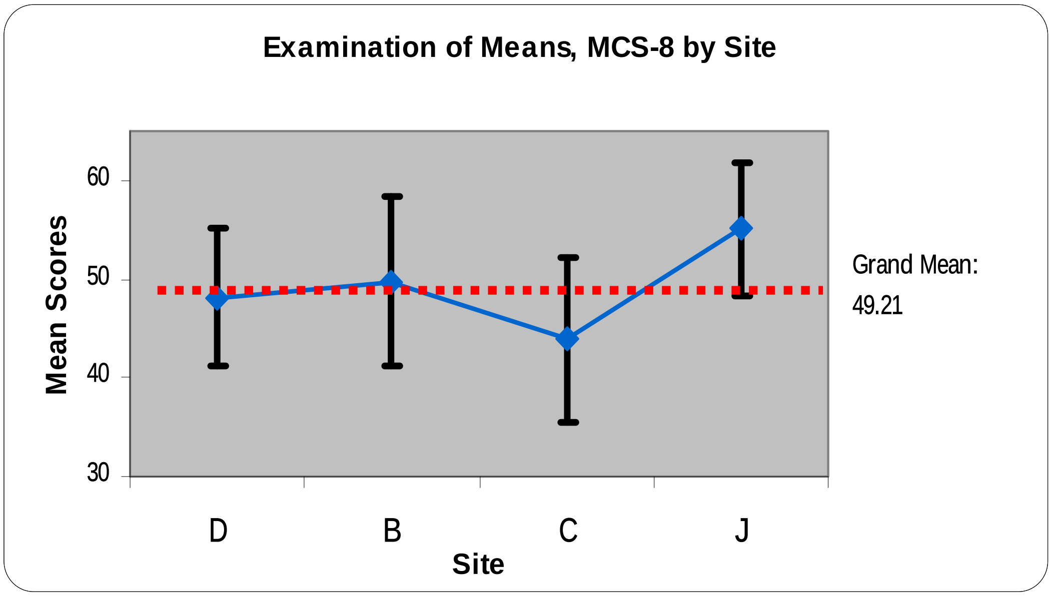
Tukey 95% Simultaneous Confidence Intervals
All Pairwise Comparisons among Levels of Site

Tukey’s Comparisons				
Sites	Lower	Center	Upper	Significance
Site = B subtracted from:				
Site C	-21.070	-9.316	2.437	*ns*
Site D	-16.111	-5.153	5.805	*ns*
Site J	-2.861	8.892	20.646	*ns*
Site = C subtracted from:				
Site D	-7.856	4.163	16.182	*ns*
Site J	5.460	18.209	30.957	Significant
Site = D subtracted from:				
Site J	2.026	14.045	26.065	Significant

E.1.2 Examination of Means – SF-8 by Site

These graphs illustrate that the Site J mean is different from the grand mean for the PCS-8 scores but that none are different for the MCS-8 scores.





E.2 SF-8 SCORES BY NATIONAL NORMS

One-Sample T: PCS-8 against national norm

Test of mu = 49.20 vs. not = 49.20

Variable: PCS-8	N	Mean	St Dev	SE Mean	95% CI	T	*p*	Sig
Entire Sample	33	40.997	10.5357	1.8340	(37.2609, 44.7325)	-4.47	0.000	*s*
Site D	9	37.339	8.2651	2.7550	(30.9858, 43.6920)	-4.31	0.003	*s*
Site B	10	42.492	10.4768	3.3131	(34.9973, 49.9867)	-2.02	0.074	*ns*
Site C	7	33.176	9.4974	3.5897	(24.3921, 41.9593)	-4.46	0.004	*s*
Site J	7	51.384	5.0037	1.8912	(46.7566, 56.0120)	1.15	0.292	*ns*

One-Sample T: MCS-8 against national norm

Test of mu = 49.19 vs. not = 49.19

Variable: MCS-8	N	Mean	St Dev	SE Mean	95% CI	T	*p*	Sig
Entire Sample	33	49.212	9.9885	1.7388	(45.6707, 52.7542)	0.01	0.990	*ns*
Site D	9	48.174	8.9565	2.9855	(41.2898, 55.0591)	-0.34	0.742	*ns*
Site B	10	49.763	11.9334	3.7737	(41.2264, 58.2996)	0.15	0.883	*ns*
Site C	7	43.864	9.0501	3.4206	(35.4944, 52.2342)	-1.56	0.170	*ns*
Site J	7	55.109	7.3200	2.7667	(48.3387, 61.8785)	2.14	0.076	*ns*

E.3 SF-8 SCORES BY SELF-ASSESSED HEALTH

E.3.1 ANOVAs – SF-8 by SA Health

PCS-8

ANOVA: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Bad	6	188.7361	31.45602	10.69583
Minor problems	13	459.89	35.37616	74.75376
Good	14	704.2657	50.30469	33.22543

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2169.766	2	1084.883	23.54254	7.12E-07	3.31583
Within Groups	1382.455	30	46.08183			
Total	3552.221	32				

MCS-8

ANOVA: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Bad	6	262.0092	43.6682	187.4274
Minor problems	13	619.9306	47.68697	101.3729
Good	14	742.0416	53.00297	47.92235

ANOVA

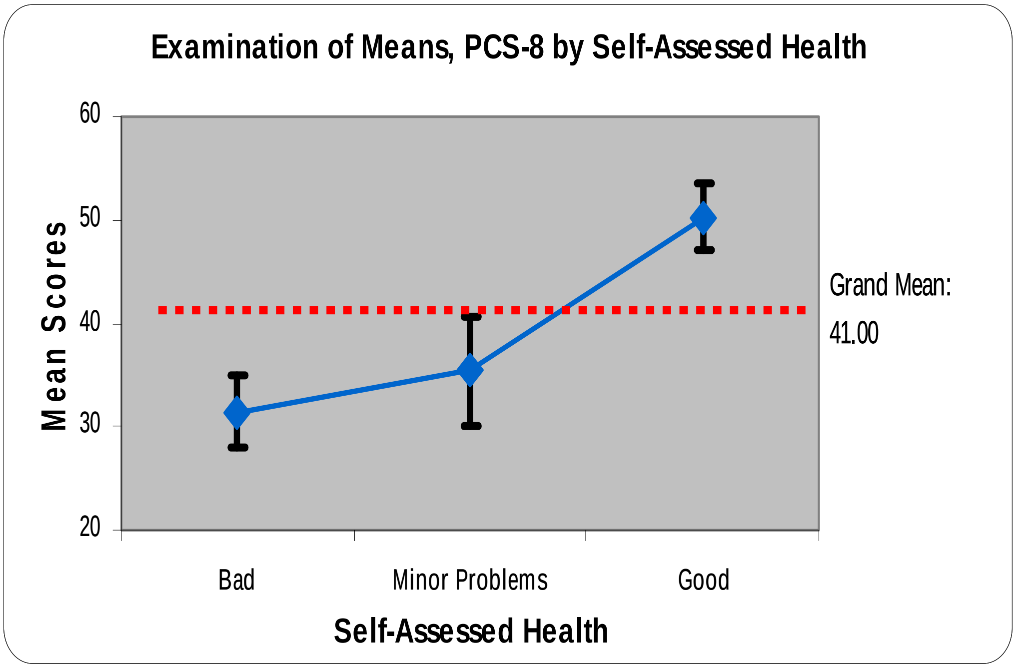
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	415.8376	2	207.9188	2.246473	0.123272	3.31583
Within Groups	2776.603	30	92.55344			
Total	3192.441	32				

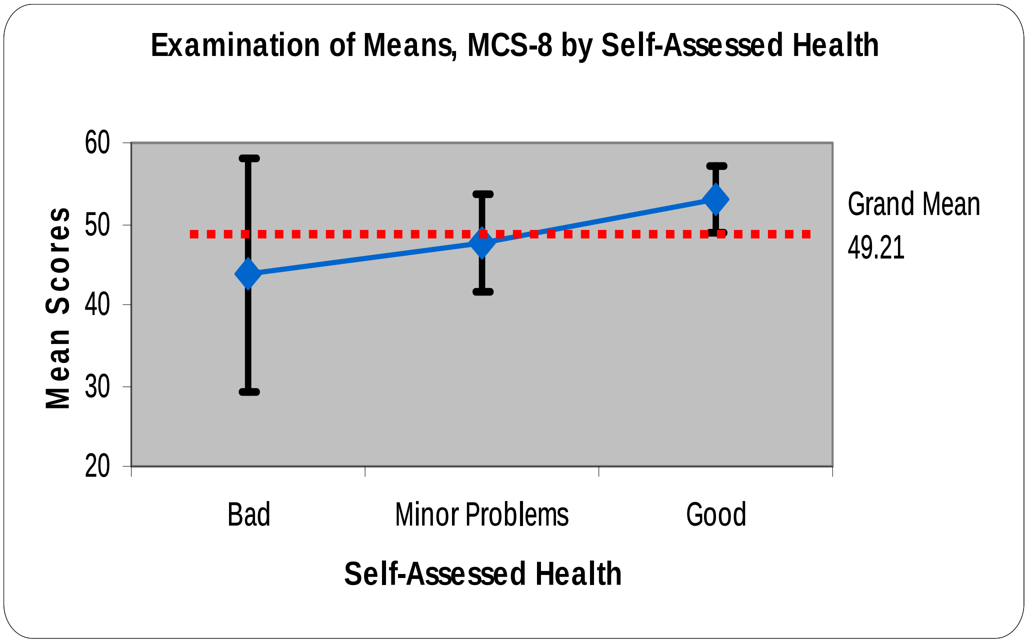
Tukey 95% Simultaneous Confidence Intervals
All Pairwise Comparisons among Levels of Assessed Health

Tukey's Comparisons				
Self-Assessed Health	Lower	Center	Upper	Significance
Assessed Health = 'Bad' subtracted from:				
'Minor problems'	-4.349	3.919	12.186	*ns*
'Good'	10.675	18.848	27.022	Significant
Assessed Health = 'Minor problems subtracted from:				
'Good'	8.478	14.930	21.381	Significant

E.3.2 Examination of Means – SF-8 by SA Health

The following graphs illustrate that all means are different from the grand mean for the PCS-8 scores but that none are different for the MCS-8 scores.


Examination of Means, PCS-8 by Self-Assessed Health
Mean Scores
60
50
40
30
20
Bad
Minor Problems
Good
Self-Assessed Health
Grand Mean:
41.00


Examination of Means, MCS-8 by Self-Assessed Health
Mean Scores
60
50
40
30
20
Bad
Minor Problems
Good
Self-Assessed Health
Grand Mean
49.21

E.4 SF-8 SCORES BY PERCEPTION OF LIVING IN BUILDING

This comparison was not significant in either physical or mental domains.

PCS-8

ANOVA: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Negative	6	218.6636	36.44393	38.13847
Neutral	9	347.2374	38.58193	144.4022
Positive	18	786.9909	43.72172	111.5178

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	310.509	2	155.2545	1.436783	0.253581	3.31583
Within Groups	3241.712	30	108.0571			
Total	3552.221	32				

MCS-8

ANOVA: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Negative	6	247.951	41.32517	129.6013
Neutral	9	469.9418	52.21575	75.14298
Positive	18	906.0886	50.33825	86.23779

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	477.2478	2	238.6239	2.636541	0.088139	3.31583
Within Groups	2715.193	30	90.50643			
Total	3192.441	32				

E.5 SF-8 SCORES BY QUALITY OF RELATIONSHIPS

This comparison was not significant in either physical or mental domains.

PCS-8

t-Test: Two-Sample Assuming Unequal Variances

	Neutral	*Positive*
Mean	40.13979517	41.38600217
Variance	82.18513062	124.3260883
Observations	6	26
Hypothesized Mean Difference	0	
df	9	
t Stat	-0.28989952	
P(T<=t) one-tail	0.389230622	
t Critical one-tail	1.833112923	
P(T<=t) two-tail	0.778461244	
t Critical two-tail	2.262157158	

MCS-8

t-Test: Two-Sample Assuming Unequal Variances

	Neutral	*Positive*
Mean	48.2482137	49.69097621
Variance	114.6733296	102.5136932
Observations	6	26
Hypothesized Mean Difference	0	
df	7	
t Stat	-0.300477363	
P(T<=t) one-tail	0.386270414	
t Critical one-tail	1.894578604	
P(T<=t) two-tail	0.772540828	
t Critical two-tail	2.364624251	

E.6 SF-8 SCORES BY BUILDING AS COMMUNITY

This comparison was not significant in either physical or mental domains.

PCS-8

t-Test: Two-Sample Assuming Unequal Variances

	No	*Yes*
Mean	40.31897943	41.25836608
Variance	86.13070327	134.0289734
Observations	11	21
Hypothesized Mean Difference	0	
df	25	
t Stat	-0.249178595	
P(T<=t) one-tail	0.402629246	
t Critical one-tail	1.708140745	
P(T<=t) two-tail	0.805258491	
t Critical two-tail	2.059538536	

MCS-8

t-Test: Two-Sample Assuming Unequal Variances

	No	*Yes*
Mean	44.83191048	51.19831674
Variance	140.151258	72.76933266
Observations	11	21
Hypothesized Mean Difference	0	
df	16	
t Stat	-1.581442307	
P(T<=t) one-tail	0.066670482	
t Critical one-tail	1.745883669	
P(T<=t) two-tail	0.133340964	
t Critical two-tail	2.119905285	

E.7 AGE AS A PREDICTOR OF SF-8 SCORES

PCS-8

Regression Statistics	
Multiple R	0.042302853
R Square	0.001789531
Adjusted R^2	-0.030410806
Standard Error	10.69498565
Observations	33

Correlation Matrix		
	AGE	*PCS-8*
AGE	1	
PCS-8	-0.0423029	1

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	6.356810901	6.356810901	0.055575	0.81518238
Residual	31	3545.86426	114.3827181		
Total	32	3552.221071			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	44.89661308	16.64738032	2.696917607	0.0112	10.944057	78.84917
AGE	-0.0519356	0.22030560	-0.2357433	0.815	-0.5012518	0.397381

MCS-8

Regression Statistics	
Multiple R	0.162196125
R Square	0.026307583
Adjusted R^2	-0.00510185
Standard Error	10.01362829
Observations	33

Correlation Matrix

	AGE	*MCS-8*
AGE	1	
MCS-8	0.162196125	1

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	83.98539856	83.98539856	0.83757	0.36715722
Residual	31	3108.455296	100.2727515		
Total	32	3192.440695			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	35.0361796	15.5868071	2.24780992	0.032	3.24667704	66.825682
AGE	0.18877620	0.20627035	0.91518823	0.367	-0.23191495	0.6094673

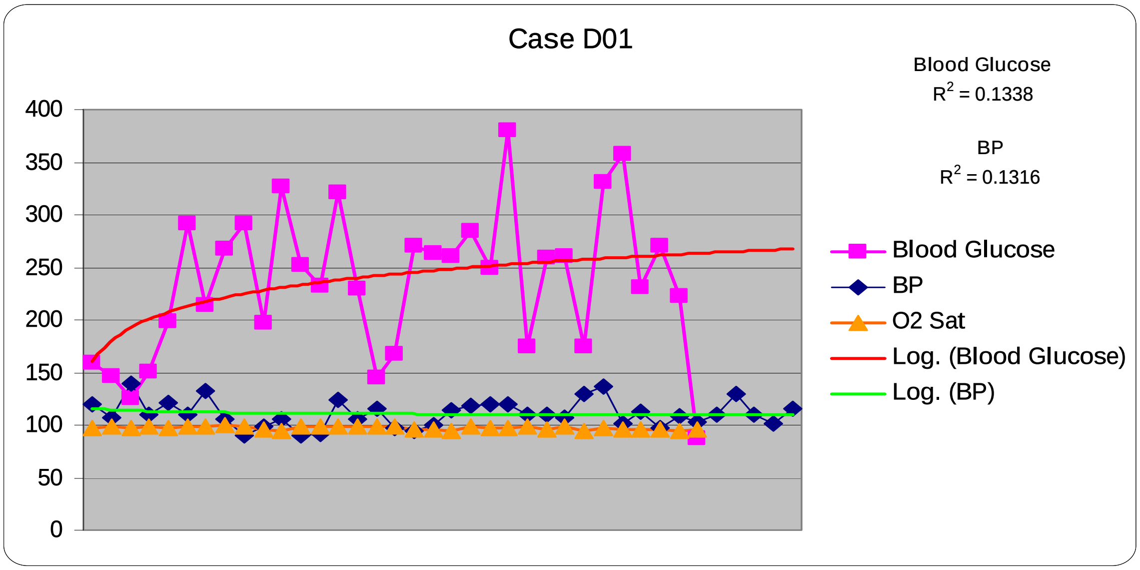
Age did not significantly predict SF-8 scores in either the physical or mental domains.

APPENDIX F

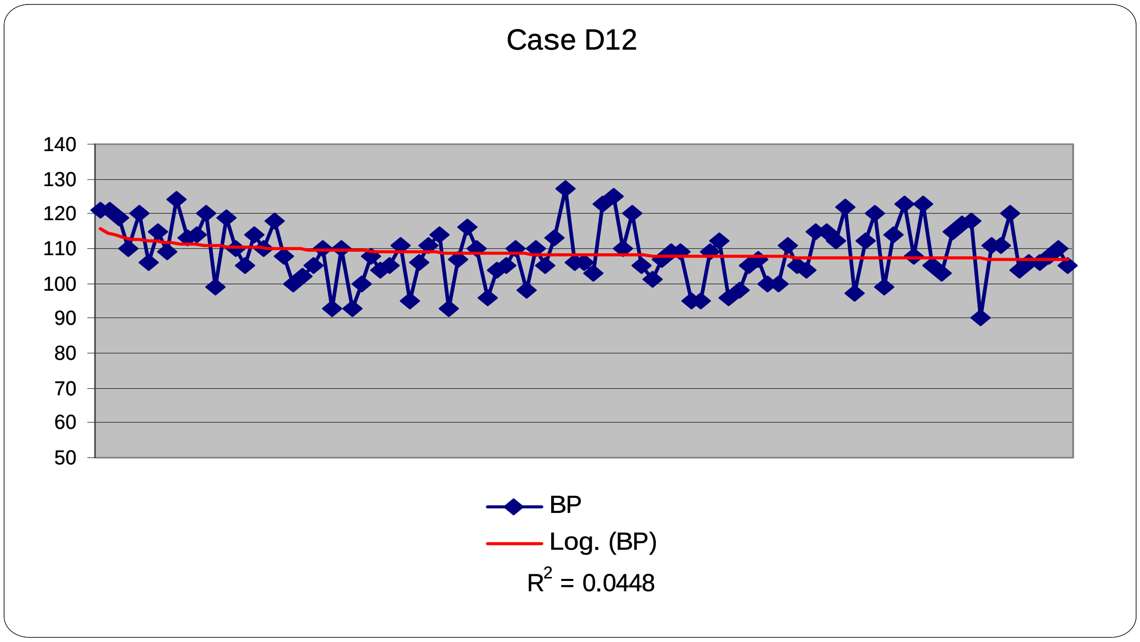
CASE SUMMARIES

F.1 CASE SUMMARIES, SITE D

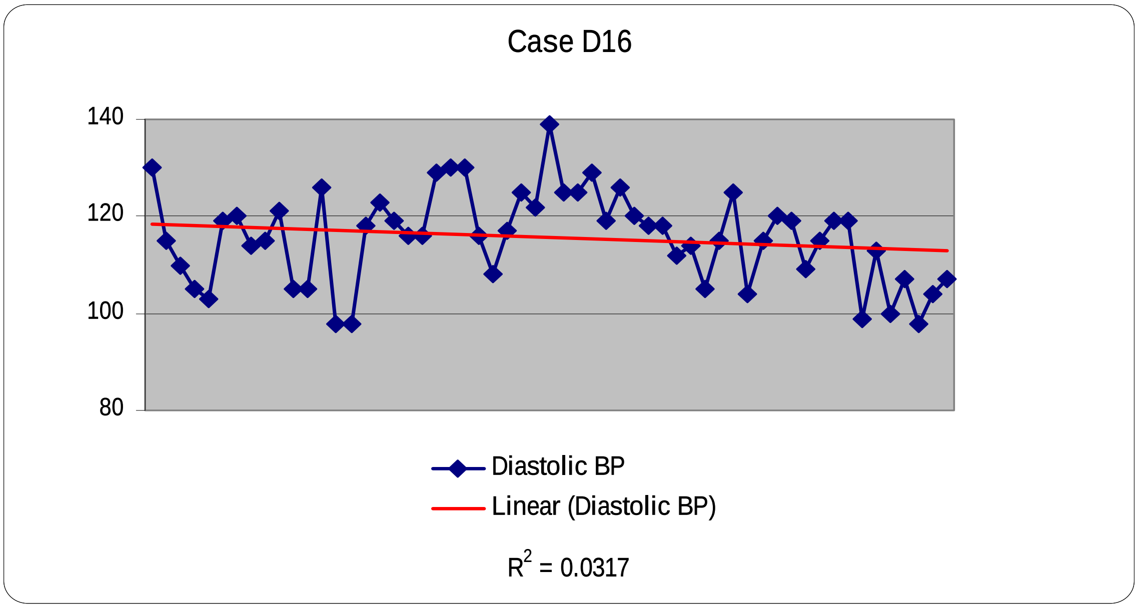
D01 – The frequency and duration of visits to the nurse were 38 visits in 13 months for a rate of approximately three visits per month. Blood pressure, blood glucose, and oxygen saturation were measured. The best fit trendlines in this case were on a logarithmic scale rather than linear. Even so, with the variation in the data, the R^2 values were not good. Thus, their reliability is not supported. The oxygen saturation trendline was not added because of the levelness of the graph line. For blood glucose, the resident showed no improvement, in fact the levels got worse according to the trendline. Blood pressure appears relatively stable.



D12 – The frequency and duration of visits to the nurse were 108 visits in 14 months for a rate of approximately eight visits per month. Blood pressure and oxygen saturation were measured. Oxygen saturation will not be addressed because resident did not have a pulmonary diagnosis. Resident also did not have a diagnosis of hypertension, but blood pressure measures showed wide fluctuation. The logarithmic trendline shows very slight improvement in blood pressures but it is questionable whether this is clinically significant.

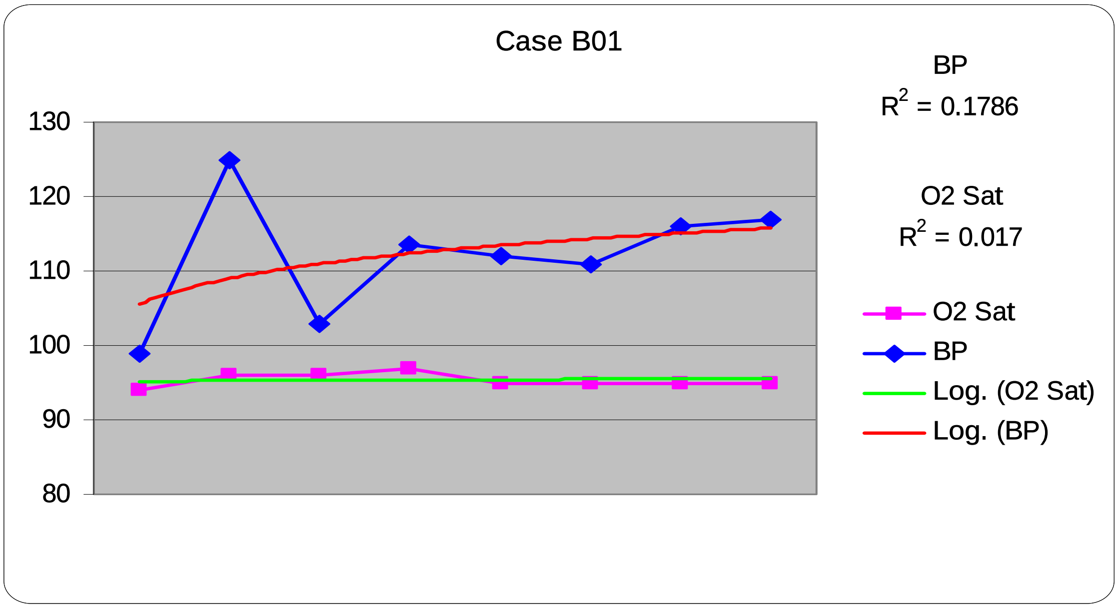


D16 – The frequency and duration of visits to the nurse were 57 visits in 14 months for a rate of approximately four visits per month. Blood pressure and oxygen saturation were measured. Oxygen saturation will not be addressed because resident did not have a pulmonary diagnosis. A linear trendline was the best fit in this case. It shows very slight improvement in blood pressures but it is questionable whether this is clinically significant.

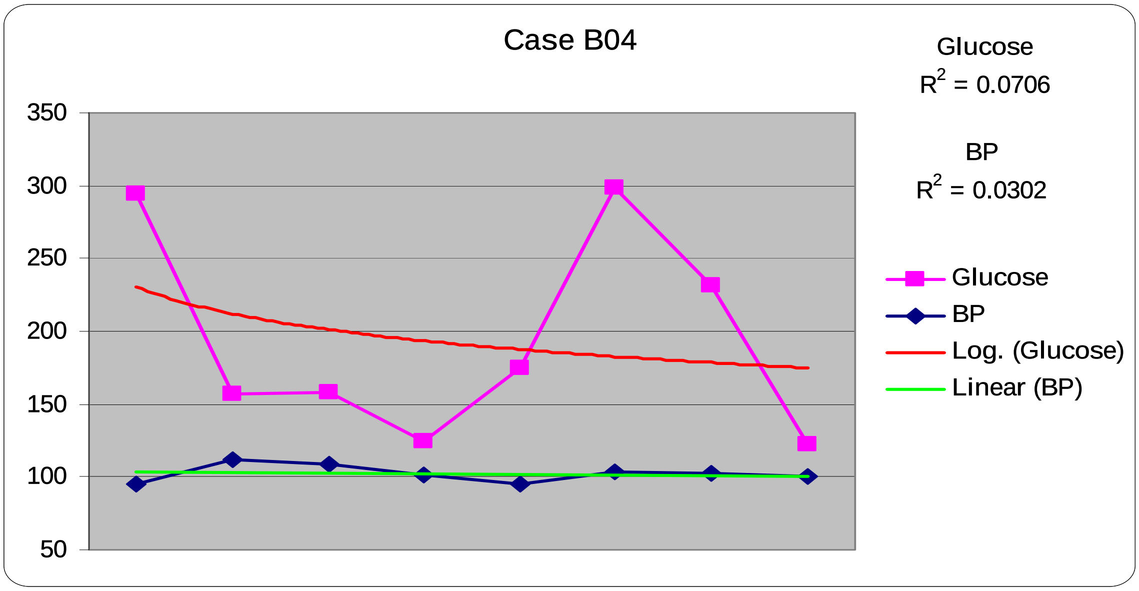


F.2 CASE SUMMARIES, SITE B

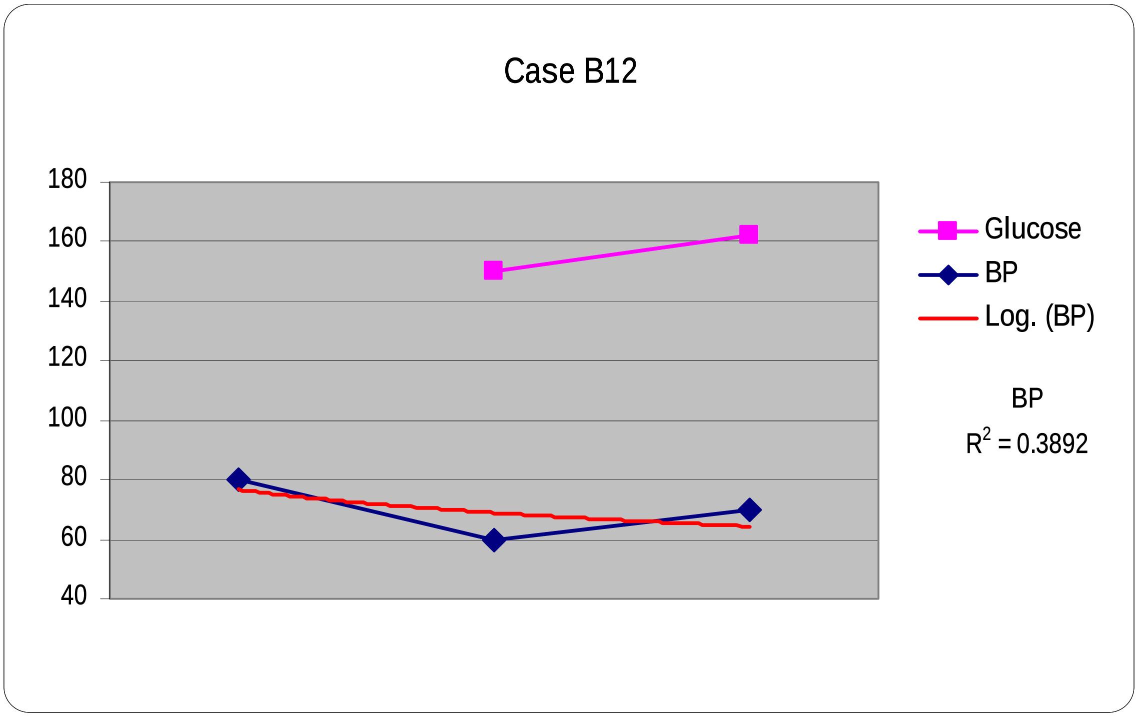
B01 – The frequency and duration of visits to the nurse were eight visits in four months for a rate of approximately two visits per month. Blood pressure and oxygen saturation were measured. The best fit trendlines in this case were on a logarithmic scale rather than linear. Even so, with the variation in the data, the R^2 values were not good. It can be seen that the blood pressure actually worsened. The oxygen saturation remained relatively stable.



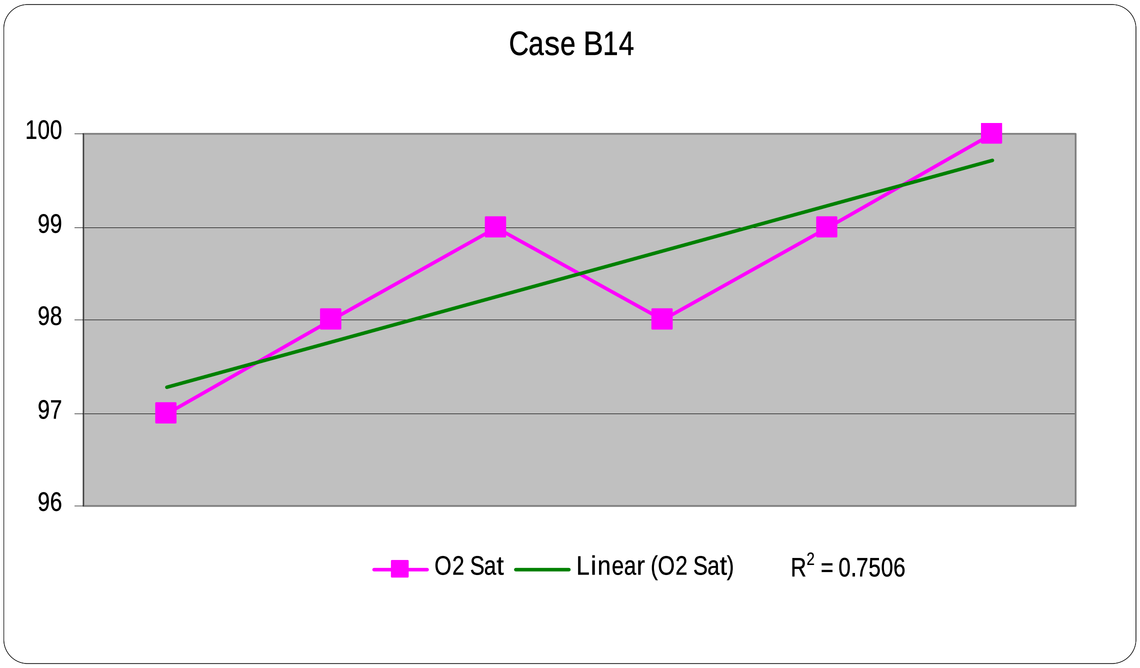
B04 – The frequency and duration of visits to the nurse were eight visits in four months for a rate of approximately two visits per month. Blood pressure, blood glucose, and oxygen saturation were measured. Oxygen saturation will not be addressed because resident did not have a pulmonary diagnosis. The best fit trendlines were linear for the blood pressure measurement and logarithmic for the glucose measurement. The blood pressure showed very little change. While the glucose showed some improvement (lowered blood glucose levels), longer term follow-up and more frequent measurement than two times per month would provide more useful data. Also, the wide fluctuation in blood glucose is a concern both statistically and medically.



B12 – The frequency and duration of visits to the nurse were three visits in one month for a rate of approximately three visits per month. Blood pressure, blood glucose, and oxygen saturation were measured. Oxygen saturation will not be addressed because resident did not have a pulmonary diagnosis. There were only two blood glucose measurements, so the appearance of worsening in this health indicator cannot be determined with this limited data. The same is so for the blood pressure. The best fit trend line was logarithmic, but with only three measurements in a limited time frame, no real conclusions can be drawn. Also, a word of caution with regard to interpreting blood pressure readings is warranted. While a downward trend usually is considered improvement, this case presents a different scenario. This resident had very low blood pressure, so a downward trend would actually be considered worsening.



B14 – The frequency and duration of visits to the nurse were four visits in three months for a rate of a little over one visit per month. Four months later, the resident visited the nurse three times in one month. The reason is not clear because blood pressure, pulse, and oxygen saturation all were normal, in fact very good, at that time. Blood pressure and oxygen saturation were measured. Blood pressure will not be addressed because resident did not have hypertension (blood pressure readings were all good). Oxygen saturation is relevant, however, because she suffered from emphysema. The best fit line was linear. It shows improvement, but again caution is appropriate in interpretation because all readings were within normal levels.



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