

**HOUSING ADEQUACY, DEVELOPMENTAL AGING, AND NONMETROPOLITAN MEN AND WOMEN**

Doris K. Williams

**Abstract**

*This investigation was to determine if there were significant relationships between a nonmetropolitan sample of men and women who were in developmental stages 65-74; 75-84; and 85+ in regard to housing adequacy. It was derived from work by the USDA sponsored Regional Research Project NC-199 Rural Households at Risk of Serious Housing Problems which incorporated the American Housing Survey (AHS) public use tape. The sample was 4,054 nonmetropolitan elderly over the age of 65 years. Findings indicated there were significant differences at the .05 level when the entire sample was evaluated. However, when the population was evaluated from a gender and developmental age (65-74; 75-84; and 85+) perspective, differences were not significant. At the same time, findings show that greater numbers than expected of the 85+ age group reported inadequate housing.*

**Introduction**

Few older people are so impaired that some degree of choice, autonomy, or independence is not a desired lifestyle. Home is the focal point of everyone's life. But for elderly persons, home has even greater significance because it allows them to remain in control of their lives and to make more personal decisions. Both control of daily activities and ability to make personal decisions promote independence. Because of these and other reasons, many elderly are determined to "age in place" (Mercier, Morris, Paulson, Rubio, Peterson, Jakubczak, & Whiteford, 1987). While institutionalization, or having to give up one's own home and the independent quality of life that goes with it, does increase considerably with advancing age, the goal is to have housing serve as a means to prolong independent living.

Although development through the life cycle is highly individualized and fluid, it is thought that vulnerable points can be identified. For the elderly these vulnerable points are associated with aging. Individuals do not automatically acquire frailty at age 75 or 85, but significant percentages of their numbers do have difficulty staying in their own homes and remaining independent (Newman, Struyk, Wright, & Rice, 1990). Housing adequacy would have an impact here.

To remain independent as one grows older is contingent on the ability of the older person to master the conditions under which he/she lives (Meddin & Laux, 1988). The house, or home, is the immediate environment where elderly spend most of their time. Kivett (1988) calls this personal space. Housing or personal space is an extremely important factor determining the ability of an older person to remain independent. If housing is seen as a means of remaining independent as one grows older and housing adequacy variables can be evaluated, then recommendations for housing that promotes independent living can be made.

**Background**

Because many elderly live in single-family dwellings, they appear to be one of the best housed segments of our population. Yet, many elderly households often find they have more housing than needed or can adequately maintain. These dwellings have been the "family home" for several decades, and are usually large, sometimes two or three stories with many steps, and in a deteriorating physical state. These conditions are not only a source of difficulty for the elderly, but also create a dilemma for others who must give assistance to the

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Doris K. Williams is a Professor at the University of Idaho.

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elderly. Very often these older homes do not meet the needs that come with aging; and, in fact, they are very often a deterrent to safe and independent life styles.

Creating barrier-free housing is one way to assist the elderly to live an independent, comfortable, and safe life style. Some barrier-free features include fewer stairs, halls wide enough to accommodate wheel chairs, bars on showers and bathtubs, specially designed kitchens where work shelves and storage are within easy reach, work spaces designed so that wheel chairs will fit under them, and more communications technology (Leibrock, 1993).

The fastest growing demand in the consumer market place for independent living arrangements can be found in the aging population. In 1988 alone, senior citizens were estimated to be an \$800 billion housing market. Despite efforts to provide ideal housing for all people, a simple formula is not possible. Study of the social and cultural aspects of human development and aging suggests that as long as there are individual differences among people there will be different housing problems requiring individualized adaptation. These concepts are especially true for the frail elderly. Housing options can fill the gap for those who are not so disabled that they could remain independent if housing were more adequate. Adaptations and structured living environments could increase housing adequacy. If the frail or disabled elderly are to remain independent, accommodations must be made (Speare, Avery, & Lawton, 1991; Moore & Arthur, 1991; Howell & Pastalan, 1979). It was also found that space and home ownership helped accommodate for daily living needs, supporting the frail elderly so they could continue to live independently (Newman, Struyk, Wright, & Rice 1990).

#### ***Elderly Population Trends***

Because of major improvements in health care, new technologies and medical advances which extend life expectancy, the number of elderly in the United States is increasing sharply. The 85+ population is one of the fastest growing age groups. Between 1950 and 1987 life expectancy at age 85 rose by 33%, and this is projected to increase further over the next several decades. Between 1989 and 2050, the population age 85+ is expected to jump from about 1 to 5% of the total population, and from 10 to 22% of the 65+ population. By 1989, the number of centenarians had grown to 61,000, up from an estimated 15,000 in 1980 (U.S. Bureau of the Census, 1990). After 2010, the elderly population is projected to grow by 2.6% annually. By 2020, the elderly population will reach 52 million, and by 2030, the graying of the baby boom will result in 65.6 million elderly. During this period, the proportion of the elderly will rise from 13% in 2000 to 21.8% in 2030 (U. S. Bureau of the Census, 1983).

Because the life expectancy of men is less than that of women, the health, social, and economic problems of the elderly, especially those over age 70, are mostly those of women. Old age is associated with a one-person (female) household, reduced income, increased poverty, and greater risk of ill-health, death, and institutionalization. Elderly women now outnumber men three to two, a considerable change from 1960 when women outnumbered men by only five to four. In 1982, there were 80 men aged 65 to 69 years for every 100 females aged 65 and over. Moreover, a woman is unlikely to remarry once she is widowed. The difference between the number of older men and women is significant within every age group (Glasgow, 1988). According to Johnson (1989), from the years 1940 to 1978, remaining life expectancy for males age 65 increased by only about two years (from 12.1 to 14 years), but for females it increased by almost five years (from 13.6 to 18.4 years).

#### ***Elderly Vulnerability and Independent Living***

Through the provision of adapted arrangements, independent living holds great promise as a means of improving the quality of life during later years (Hawkins & Seltzer, 1991; Carp, 1975; Crull, Bode, & Morris, 1991; Ha & Weber, 1991). According to Glasgow (1988), most elderly people prefer to live independently as head of a household, with a spouse, or alone; and today's older people tend to remain where they have spent most of their adult lives. There is a growing trend among the elderly to want to remain independent and age in place in spite of advancing age or increasing disabilities (Johnson, 1989; Mockenhaupt, 1993). This trend is due partly to concerns about spiraling health care costs including those for long-term care, the effect of the consumer and women's movements, dissatisfaction with medical services, and the benefits from improved self-care. Phobias about nursing homes

have also had a significant bearing (McCarthy, 1993). Declining health and physical limitations are conditions associated with aging by both married and single individuals. The death of a spouse may turn a couple-headed household into a single-person household. Usually the elderly woman is left alone. One-third of one-person households are women living alone (U.S. Bureau of the Census, 1990; Wiemann & Combs, 1988). The sub-population of elderly, and especially the female elderly, is most vulnerable to loss of independence. But for many who do own their own homes, the cost of utilities, taxes, insurance, repair, maintenance, and remodeling with an aim of making the home more adequate can be prohibitive.

Because results from changes in status are often associated with aging, many older Americans have a lower economic status than other adults in our society. The elderly are more likely than other adults to be poor, with incomes just above the poverty level. In addition, the oldest of the old, those over age 85, have significantly lower cash income than the young old (age 65-74). At the same time, the elderly have limited potential to increase their income through work. In addition, these elderly become economically vulnerable to circumstances over which they have no control: the loss of a spouse, deterioration of their health and self-sufficiency, Social Security and Medicare legislation, and inflation (Deets, Prior, Cohen, Berry & Azvedo, 1991). These factors most often have an indirect bearing on housing, increasing the risk of losing independence.

#### ***Nonmetropolitan Elderly and Housing Adequacy***

The percentage of the population 60 years old or older living in nonmetropolitan areas is greater than the percentage living in metropolitan areas. Nationally, 16.8% of the population is 60 years or older. Of this, 16% are in metropolitan areas, and 19.4 in nonmetropolitan areas. In 1987, there were 17.7 million older (65 and above) women and 12.1 million older men indicating that the gender ratio increases dramatically with age (Williams, 1991).

In addition, poverty in nonmetropolitan areas of the United States increased dramatically between 1991 and 1992 compared to poverty in metropolitan areas (Harman, 1993). Rural elders after spending all their after-tax income are twice as likely to be poor as their urban counterparts (Schwenk, 1991). At the same time, in spite of an awareness that certain services in nonmetropolitan areas and small towns are limited, older nonmetropolitan elderly people express a preference for living in these rural or nonmetropolitan areas (Glasgow & Beale, 1985).

One study (Atchley, 1979) found that four-fifths of nonmetropolitan households had housing that was considered reasonably adequate. The only exception was a statistically significant drop in the housing adequacy of rural farm people aged 85 to 99, regardless of gender. Criteria included a private entrance, telephone, complete kitchen, hot and cold piped water, flush toilet, bathtub or shower, all plumbing facilities, central heating, own water source, sewage disposal system, bathrooms, and air conditioning. Few studies have evaluated housing adequacy from a gender viewpoint. The American Housing Survey housing adequacy data used for this study included variables of plumbing, heating, electrical, upkeep (leaks, cracks, painting, rats, hallways, steps, and kitchens). This research investigates the relationship between housing adequacy, developmental stages of aging, and gender of nonmetropolitan elderly. The hypothesis is that there will be significant developmental age and gender differences in regard to housing adequacy.

#### **Methods**

Data for this publication were derived from samples of the American Housing Survey of 1987 and subsequent years. These data were gathered biennially by the 1984 U.S. Census Bureau for the Department of Housing and Urban Development (HUD) from samples of over 50,000 households.

#### ***Sample***

The AHS sample was 4,050 elderly nonmetropolitan subjects. The reference person who was the first household member listed in the questionnaire and owner or renter of the dwelling was used as the unit of analysis for this investigation. Numbers in the data set were weighted with whole weights as compared with fractured weights to reflect the U.S. population.

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In the AHS data, nonmetropolitan households are those not dwelling within a Metropolitan Statistical Area (MSA), and are defined as the county or group of counties in which is located a city of 50,000 population or more, and an urbanized area of 1,000,000 or more. Residents who live in small communities or in open country outside of the city but within the county would be considered "metropolitan," whereas residents of a city of 40,000 not located within an MSA would be considered "nonmetropolitan." This definition was selected because the metropolitan-nonmetropolitan distinction could be made in the AHS.

**Variables**

**Age** is the age of the reference person or the spouse who is 65 years of age or above. Sub groups tested were ages 65-74; 75-85; and 85+.

**Housing adequacy** is constructed from an index used by the Department of Housing and Urban Development. The index includes information on plumbing, heating, electricity, upkeep, hallways, and kitchen. Dwellings are coded on a scale of 1 to 3, with 1 being adequate and 3 being severely inadequate (U.S. Bureau of the Census, 1984).

**Gender** is defined as elderly men and women.

**Statistical Approach**

Chi-square analysis was employed to determine levels of significance at both .01 and .05 levels for the relationships between age, gender, and housing adequacy. Independent variables are age and gender. The dependent variable is housing adequacy.

**Findings**

The purpose of this study was to determine statistically significant associations between men and women aged 65+ in regard to the adequacy of their housing. There were significant differences at the .01 level between the total population of men and women aged 65+ in this study. Women responded that their housing was inadequate. For women the count was 60 and the expected was 43.1. For men the count was 41 and the expected was 57.9. ( See Table 1.) Greater numbers of men reported housing as being adequate; the count was 2,146 and the expected was 2,094. The count for women was 1,517 and the expected number was 1,564. However, results for inadequate housing were just the opposite. Men reported more inadequacy with a count of 41, expected 57.9, than women where the count was 60 and the expected number was 43.1.

When the population of 65+ is evaluated from a development perspective (ages 65-74; 75-84; and 85+), differences are not significant at the .05 level. However, the level of significance of .06 suggests that housing becomes more inadequate for those age 85+. For those

Table 1. Housing adequacy by gender of reference person.

	Count Exp. Val.	Male 1	Female 2	Row Total (%)
Adequate	1	2146 2099.0	1517 1564.0	3663 90.4%
Moderate	2	136 166.2	154 123.8	290 7.2%
Inadequate	3	41 57.9	60 43.1	101 2.5%
Column Total		2323	1731	4054
Column Percent		57.3%	42.7%	100.0%
Chi-square value = 26.82469		df=2	Significance = .00000	

85+ years of age, the inadequate count was 11 and expected was 6.5; and for those 85+, indicating moderate adequacy, the count was 19 and expected was 18.7. For the age range of 75-84, the elderly who reported their housing to be inadequate was 34, and the expected number was 33.3. For housing that was considered moderately adequate by those in the age range of 75-84, the count was 113 and the expected number was 95.6. ( See Table 2.)

Because of the findings in Table 2 and information obtained through the literature review, the decision was made to evaluate data concerning women aged 65 and above within respective developmental ages 65-74, 75-84, and 85+. When this was done, no significant differences were found. However, the category of most interest continued to be of women

Table 2. Developmental ages of elderly men and women, and housing adequacy.

Count Exp. Val.	Adequate 1	Moderate 2	Inadequate 3	Row Total
1.00	2241	158	56	2455
65-74	2218.2	175.6	61.2	
2.00	1190	113	34	1337
75-84	1208.0	95.6	33.3	
3.00	232	19	11	262
85 +	236.7	18.7	6.5	
Column Total	3663	290	101	4054
Column Percent	90.4%	7.2%	2.5%	100.0%
Chi-square value = 9.03425		df=4		Significance = .06025

age 85+. The count was eight and expected number was six. Given this information, the lack of significance might be attributed to the fact that adequate housing for women age 85+ was not available, and because of this, they are no longer independent and also no longer reported in the independent household census as used in this study.

Table 3. Developmental ages, women, and housing adequacy.

Count Exp. Val.	Adequate 1	Moderate 2	Inadequate 3	Row Total
1.00	758	77	29	864
65-74	757.2	76.9	29.9	
2.00	608	62	23	693
75-84	607.3	61.7	24.0	
3.00	151	15	8	174
85 +	152.5	15.5	6.0	
Column Total	1517	154	60	1731
Column Percent	87.6%	8.9%	3.5%	100.0%
Chi-square value = .17622		df=1		Significance = .67464

### Implications and Recommendations

#### *Implications*

Previously, elderly who were unable to live alone were forced into a nursing home, often at great financial, emotional, and physical cost to themselves, their families, and the public (Williams, 1991). Leibrock (1993) believes that designs for independent living may well become the housing option of the future, permitting aging in place. She also believes the most serious implications have to do with 1) information that can help shape public policy, 2) the concept of housing qualities that facilitate independent living, 3) the concept of independent living as prevention of institutionalization and the high costs for long-term care, and 4) the concept that independent living can improve the quality of life for the elderly. According to Pastalan (1979), variability and diversity within the older population is what needs to be considered. Individualized housing arrangements for the elderly are an important element in designing cost effective technological interventions to help older people remain in their own

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homes and communities. If the suggestion that housing is most inadequate in later stages of life is any indication, the group most impacted will be those aged 85+.

### **Recommendations**

As professionals we need to promote innovative approaches to housing which are already in place. For example, Gunn (1988) believes that what the Swedish call "the normalization" of housing for vulnerable user groups can foster independent living for persons with various handicapping conditions, such as is likely with the frail elderly. Smith (1989) recommends consideration of the A-Factor Home, a "user-friendly" alternative. These are single family homes which have no indoor or outdoor stairs, nonskid surfaces, levers instead of knobs on doors and plumbing fixtures, easy-access storage, wider doors and hallways, a shelf for packages in the entry area, light plugs at a convenient height, and a seat in the bathroom. Pastalan (1988), suggests Ecogenic Housing (a Greek term which broadly defined means family environment) as another type of alternative housing promoting independent living. Accessory apartments and other barrier-free arrangements can also be designed and installed in ways that will not distract or look different from the so called "normal" environments. Small business owners can also benefit themselves and the elderly by designing adapted environments. These can offer alternative living arrangements and promote independence (Celente, 1990; Williams, 1991).

Architects, interior designers, and manufacturers can promote, design, and produce independent living environments. Educators and housing specialists can advocate for policies and educate the public in regard to universal barrier-free housing. According to Struyk (1988), educators can provide a forum for discussing elderly housing environments where issues could center on how to construct public assistance to support those housing transitions that are necessary to allow community-based housing to become an active and integral element in the overall long-term care system.

Changes in the way in which federal and state governments authorize non-institutional housing options for long-term care would greatly assist the frail elderly and their families. As professionals, we can conduct research, develop educational programs with balanced information, and at the same time support universal barrier-free housing in general. Advocating for nonmetropolitan elderly will be vitally important. Businesses serving the elderly also need to understand concepts and affordability related to independent living.

While the group in this study has a high mean age of 74.58, respective developmental stages 65-74; 75-84; and 85+ were also investigated. Developmental stages studied need to be replicated, and especially with the "old-old," in their late 80s and 90s, when the chance of losing independence becomes greater. Studies of the "old-old" who are no longer independent need to be conducted to determine if they would have remained independent had their housing been more adequate. In the future, consumers, both seniors and those approaching senior status (65+), will demand more appropriate housing options which promote independent living (Searight & Handal, 1987).

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