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Health Care Perceptions of Nebraska's Urban & Rural Aged

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Random samples were drawn in Douglas County, Nebraska (N = 196, mean age = 73.8 years), in the counties surrounding Douglas County also served by the Eastern Nebraska Office on Aging (N = 104, mean age = 72.4 years), and in eleven of the rural Sandhills counties of Nebraska (N = 200, mean age = 76.6). Participants responded to structured interviews of 169 questions that included self-assessed health status, availability of health care and physician services, costs, attitudes toward health care services, health experiences and beliefs. While the Sandhills respondents were significantly older and had less access to health services, they also had fewer annual days of hospitalization. There were no differences in subjective ratings of health or in levels of satisfaction with health care or availability.

Rural residents in general, and the elderly in particular, are usually assumed to be at a distinct disadvantage in terms of health care and, consequently, health status. People who have less access to health care providers and facilities might reasonably be assumed to be less healthy, or at least have different health outcomes because of barriers to health care providers.

However, if age and income are held constant, there is little evidence to demonstrate that location of residence contributes much to differences in health status. In the present study we sought to examine this apparent contradiction through measures of health status, access to health care services, and levels of satisfaction among both the urban and the rural elderly.

Health beliefs may also influence health care and utilization of health services (Strain 1991). Research is needed that helps explain the paradox of less adequate health care services but high levels of satisfaction among the rural aged. Lassey and Lassey (1985) conclude that:

Rural-urban comparisons are needed on elderly hospital admissions and care, access to or delivery of emergency medical services, and the relative adequacy of long-term care facilities....To gain a more thorough understanding of the complex of factors related to the health status of the rural elderly, research is needed which specifically compares randomly selected rural and urban samples of elderly people. (98)

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Center for Public Affairs Research



Related Research: Lifestyle, Social Ties

Given that doctors and hospitals in rural areas are fewer and farther between, are the older persons living in rural areas any worse off in terms of overall health? Do lifestyle approaches, social networks, or health habits and beliefs have more to do with intrinsic health than access to medical care?

Speake, Cowart, and Stephens (1991) investigated six lifestyle elements that may influence overall health (stress, exercise, nutrition, health responsibility, self-actualization, and interpersonal support) among 106 rural and 237 urban-dwelling people (mean age = 71.4). They concluded that any urban-rural health differences may be more closely related to respondents' education and income level than they are to rural or urban residence.

Other researchers have examined the influence of social ties and the availability of support networks on the health and well-being of older persons. Johnson and his colleagues (1988) interviewed 315 nonmetropolitan and 678 metropolitan randomly selected older persons from 45 states and the District of Columbia to determine whether depression in older people related to variables such as intimate social ties, primary attachments, secondary attachments, stressful events, perceived health, and demographic items. No overall differences were found in the average depression scores of older urban or rural respondents. And, "No social network variable was found to have a direct effect upon depression" (79).

Social ties have been shown to be directly and significantly related to overall rates of survival. In a major, longitudinal study of survival among 7,000 adult residents of Alameda County, California, that began in 1965, it was found that people over 70 who have a companion or confidant have much greater odds of survival (Seeman, et al. 1987, 714).

One might, then, seek to determine differences in social ties. Tennstedt, et al. (1990) studied 635 frail older persons and found that: 79 percent received most of their needed assistance from informal caregivers; living alone is the consistent predictor of the use of formal services from agencies in the community; and those who live with a spouse are likely to use no formal services regardless of how frail they are.

Because of these findings, it might be concluded that isolated elders, urban or rural, are particularly vulnerable. Coe and his colleagues (1984) analyzed 401 interviews from a sample of noninstitutionalized older persons and concluded that those lacking a family or neighborhood social network had a much higher rate of visits to physicians. It is difficult to determine with any precision, however, the relative availability of social networks and associated health status among samples of urban and rural elders from available studies.

Related Research: Use of Services, Perceived Health Status and Disability

An analysis of differences in relative health of urban and rural elders might well take into account their use of health and supportive social services as well as factors such as self-assessed health status and relative levels of disability. However, prior research reveals as many paradoxes as it does direct relationships.

Wan and Arling (1983) found a number of predictors of the use of physician and social services among a sample of 772 older persons living in urban and rural parts of Virginia who had at least one limitation of their activities of daily living (ADLs), but distance from health care did not predict their use of services. Perceived health had the greatest value in predicting their use of health services.

Perception of health may be among the most important variables in relative terms. Idler, Kasl, and Lemke (1990) provide clear, significant longitudinal findings demonstrating the relationship between self-assessed health and mortality among two large samples of the aged in New Haven, Connecticut, (N = 2,812) and in two counties in Iowa (N = 3,673).

They conclude that:

Expressions of subjective health status are sensitive indicators of survival length (and) should engender new respect among health professionals for what people, especially the elderly people they treat, are saying about their health (365).

Wolinsky (1990) points out that subjective measures of health status might be seen more as measures of health behavior than of actual physical health status, but concludes that they probably are more predictive of the use of health services than are other variables. He suggests that most of the variation in the use of health services remains

unexplained, and points to the observation of Shanas and Maddox (1985) that one way to define health among the elderly is to determine level of functioning.

A series of studies recently published by the National Center for Health Statistics (NCHS) confirm the relationship between level of disability and perceived health status among the elderly (Hing and Bloom 1990; DeLozier and Gagnon 1991; and Ries and Brown 1991). Functional ability was assessed through measures of ADLs and IADLs (activities of daily living and instrumental activities of daily living). Of the ADL limitations, 6.2 percent of the aged had difficulty bathing, 4.4 percent with dressing, 2.4 percent with use of the toilet, 3.2 percent with physical transfer, and just 1 percent had difficulty eating. With reference to IADL limitations among the noninstitutionalized aged, 3.9 percent had trouble preparing meals, 7.5 percent with shopping, 3.3 percent with money management, 1.9 percent with use of the telephone, and 4.9 percent doing light housework (Ries and Brown 1991).

Ries and Brown, however, point out another paradox: while those (of all ages) who reside outside Metropolitan Statistical Areas (MSAs) tended to give a more negative self-rating of health, regardless of level of disability, those persons living in non-metropolitan areas also tended to spend fewer days in the hospital, have fewer days of restricted activity, and fewer total physician contacts (4).

They also found that those who were limited in activities of daily living (ADL) and in fair or poor health averaged 16.8 physician visits per year, while the ADL-limited who had self-reported good or excellent health averaged 10.4 annual visits. Those 65+ with no ADL limitations reported 9.2 and 5.2 visits, respectively. By contrast, annual physician visits by all persons in the U.S. average 4.7 for the group aged 65 to 74 and an annual average of 5.9 physician visits for those 75 and older (DeLozier and Gagnon 1991).

Finally, additional NCHS data (Hing and Bloom 1990) give an indication that level of ADL and IADL dependencies are related to social condition and race. Black and Hispanic elders, those who are not married, and those living below the poverty line have the greatest relative rates of functional disability.

In a recent examination of ten national data sources, Gibson (1991) found interesting age by race differences in the relative health of the aged: a younger black group with higher morbidity than the older black group, an alternating pattern of robust and morbid black age groups, and a black health disadvantage that narrowed after age 85. She suggests that age and health may be more strongly related among white elderly than among black. Gibson discusses a number of possible interpretations of these data and calls for additional samples that compare white and black elderly.

The Rural and Urban Aged in Nebraska: Study Design

The Eastern Nebraska Office on Aging asked the authors of this study to investigate the relative health of older persons living in the Omaha area beginning in 1988. In the first report a profile of 278 randomly-selected elderly black residents of Omaha's North Side indicated that they were less likely to have a primary care physician than were white elders in the community, but that they did not differ significantly in terms of episodes of illness, use of hospital emergency rooms, or delays in seeking needed health care services (Powell and Thorson 1989). In general, the respondents were quite satisfied with health care services available to them; their overall responses were comparable to an earlier study of a sample of older black citizens of Cleveland, Ohio (Petchers and Milligan 1988).

A follow-up study in Omaha and the predominantly urban remainder of Douglas County determined relative levels of disability in activities of daily living (ADL and IADL), self-perception of health, access to health care facilities and providers, and health practices and beliefs. The Douglas County sample consisted of 196 randomly-selected individuals, average age 73.8 years, 72 percent female, 7 percent minority, and 55 percent married. For purposes of comparison, we also drew a random sample of 104 individuals from the four counties (Cass, Dodge, Sarpy and Washington) bordering Douglas County that are also served by the Eastern Nebraska Office on Aging (average age = 72.4, 72 percent female, 100 percent white, 54 percent married). In order to provide a comparison with Nebraska's most rural areas, the University's Center on Public Affairs Research provided funding to draw a random sample of elderly residents of the Sandhills counties in the Western and Central parts of the state (N = 200). Table 1 describes the universe from which these samples were drawn.

The five counties served by ENOA have a combined total population of 591,452 (1990 Census), and the eleven counties in the Sandhills area have a combined population

Table 1. 1990 Population, Selected Nebraska Counties

County	Total Population	Population 65 +	Percent 65 +
Cass	21,318	2,776	13.0
Dodge	34,500	5,974	17.3
Douglas	416,444	47,333	11.4
Sarpy	102,583	4,892	4.8
Washington	16,607	2,252	13.6
Total	591,452	63,227	10.7
Arthur	462	85	18.4
Blaine	675	113	16.7
Garden	2,460	591	24.0
Garfield	2,141	515	24.1
Grant	769	118	15.3
Hooker	793	220	27.7
Logan	878	134	15.3
Loup	683	128	18.7
McPherson	546	108	19.8
Thomas	851	126	14.8
Wheeler	948	140	14.8
Total	11,206	2,278	20.3

of 11,206. Thus, there is a truly urban area in the state and a genuinely rural one to compare it to. The selected Sandhills counties have an average population per square mile of 1.5; by contrast, the five counties selected in the Eastern part of the state have an average population density of 228.8 per square mile (see Table 2). The eleven Sandhills counties have only two resident physicians, one hospital and four nursing homes.

The Sandhills area of Nebraska, in fact, is one of the most rural in the United States. Arthur County is the fifth smallest in population in the nation and McPherson is the eighth (U.S. Bureau of the Census 1988). Nine of the eleven Sandhills counties surveyed in the present study have total resident populations of less than one thousand (1990 Census), and rank among the 25 smallest counties in the U.S.

Table 2. Population Density and Health Care Facilities, Selected Nebraska Counties

County	Population/ Square Mile	Physicians	Hospitals	Hospital Beds	Nursing Homes	Nursing Home Beds
Cass	39.3	6	-	-	4	299
Dodge	65.9	37	1	245	7	642
Douglas	1,245.9	1,407	13	4,337	34	3,947
Sarpy	401.7	34	2	275	4	358
Washington	40.9	9	1	46	2	195
Total	228.8	1,493	17	4,903	51	5,441
Arthur	.7	-	-	-	-	-
Blaine	1.0	-	-	-	-	-
Garden	1.7	1	1	62	2	80
Garfield	3.9	-	-	-	1	77
Grant	1.2	1	-	-	-	-
Hooker	1.4	-	-	-	1	30
Logan	1.6	-	-	-	-	-
Loup	1.4	-	-	-	-	-
McPherson	.7	-	-	-	-	-
Thomas	1.3	-	-	-	-	-
Wheeler	1.7	-	-	-	-	-
Total	1.5	2	1	62	4	187

Sample Characteristics and Methodology

The respondents were reached through randomly-generated lists of telephone numbers provided by a national marketing organization. Professional operators at a local survey company called these numbers and inquired if there was a resident in the household 60 years of age or older; if there was, he or she was asked to complete a structured interview; if not, the call was terminated; if there was more than one, the oldest was interviewed.

The interview schedule contained 169 questions that generated 231 different variables relating to self-assessed health status, access to health care providers and facilities, levels of functioning, attitudes toward health care received, and demographic items. The length of the 500 completed interviews varied from 12 to 50 minutes, with a mean length of 26.7 minutes and a median of 25. Ten percent of the respondents were called back by supervisory personnel to verify the accuracy of the survey results.

Table 3 contains the characteristics of the respondents in the three samples.

The urban, suburban and Sandhills samples did not differ proportionately by gender or marital status, although the smaller percentage of persons in the Sandhills who were married and living with a spouse did approach significance ($p < .06$). Respondents from the eleven Sandhills counties were, on the average, older ($t = 4.95$, $p < .001$). While there were large differences in the range of monthly income, there were no significant differences in mean income among the three groups. Overall, the random dialing procedure provided a representative cross-section of the elderly in the urban Eastern part of the state and in the most rural part.

Table 3. Sample Characteristics

	Douglas County	Cass, Washington, Sarpy and Dodge Counties	Eleven Sandhill Counties*
Sample size:			
Males	55	29	54
Females	141	75	146
	196	104	200
Age in years:			
Range	63-91	60-93	65-94
Mean	73.85	72.42	76.64 [†]
Standard deviation	6.43	6.80	7.16
Marital status:			
Married, lives with spouse	108 (55%)	56 (54%)	95 (47.5%)
Widowed/single	88 (45%)	48 (46%)	105 (52.5%)
Monthly income:			
Range	\$268-4,200	\$200-3,600	\$200-12,000
Mean	1,132	991	979
Standard deviation	800	616	1,186
Median	900	900	650

* Arthur, Blaine, Garden, Garfield, Grant, Hooker, Logan, Loup, McPherson, Thomas, and Wheeler Counties, Nebraska

[†] $p < .001$ (All other differences are not statistically significant).

Results: Health Status and Access to Health Care

Respondents were asked to classify their present health status (see Table 4). Extensive research indicates that self-assessment of health among the aged is generally equal to, and in some cases superior to, a clinician's independent rating (Idler and Kasl 1991). Of the entire sample of 500, a total of 67 percent rated their current health as good or excellent; only 8.8 percent rated their health as poor or very poor. It should be noted that this population was drawn from the noninstitutionalized aged, and that nursing home occupancy at age 75 runs about 10 percent; in Nebraska, the rate for men aged 85+ is about 21 percent, and for women in that age group it is almost 30 percent (Nebraska Department of Health data). The sampling of Nebraska's noninstitutionalized older citizens might be seen as an elite group of survivors.

Comparing self-rated health of the 196 respondents in Douglas County with the 200 in the Sandhills drew no differences that were statistically significant, nor were there significant differences in subjective rating of health compared to others their own age.

As can be seen in Table 4, however, those in Cass, Dodge, Sarpy, and Washington Counties were slightly, but significantly, higher in self-rating of health than those either in Douglas ($t = 2.70, p < .01$) or in the Sandhills counties ($t = 3.43, p < .001$).

There were no differences in mean number of months since last visit to their doctor. This number, however, was influenced by very wide standard deviations. While half of the respondents had seen a physician within the previous three months, there were a number of persons at an extreme: at least three hearty individuals reported not having seen a physician during the past 25 years. Fully 37 percent said that they see a doctor only if ill.

Mean number of months since last physical examination (well over two years) did not differ significantly between groups. (About 90 percent had seen a physician for some purpose, however, during the previous year.)

Within groups there were two correlations of some interest: in the Douglas County sample there was a significant relationship between race and number of visits to the doctor ($r = .22, p < .01$); African American aged persons tended to see their physicians with greater frequency. And, frequency of visits to the doctor tended to increase with age ($r = .25, p < .01$), as might have been anticipated.

The rate of hospitalization in the three samples did not differ, but, once hospitalized, the length of stay was significantly different. A total of 101, or 20.4 percent of the entire sample, had been hospitalized at least once during the previous year. The 42 persons in Douglas County who were hospitalized stayed an average of 11.3 days; this brought the

Table 4. Selected Health Characteristics

	Douglas County	Cass, Dodge, Sarpy and Washington Counties	Sandhills Counties
Classify your health today (0 = very poor, 4 = excellent)			
Mean	2.66	2.93	2.60*
Standard deviation	.89	.67	.86
Months since last visit to doctor:			
Mean	10.6	8.6	9.6 [†]
Standard deviation	41.9	19.9	43.9
Months since last physical examination:			
Mean	28.3	26.9	28.1 [†]
Standard deviation	85.3	54.7	54.5
Hospitalized during past year? (0 = no, 1 = yes)	N = 42	N = 18	N = 41
Mean	.22	.17	.21 [†]
Standard deviation	.42	.33	.44
If hospitalized, for how many days?			
Mean	11.3	4.8	6.6 [‡]
Standard deviation	14.2	4.8	6.6
Time in minutes from home to hospital:			
Mean	17.5	28.1	55.3 [‡]
Standard deviation	9.1	17.6	48.6
Satisfied with hospital care? (0 = very dissatisfied, 3 = very satisfied)			
Mean	2.40	2.36	2.63 [†]
Standard deviation	.72	.58	.58
Overall satisfaction with health care (0 = very dissatisfied, 3 = very satisfied)			
Mean	2.26	2.22	2.15 [†]
Standard deviation	.63	.61	.58

*Cass County et al. were significantly higher than Douglas ($p < .01$) and the Sandhills counties ($p < .001$); Douglas County and the counties in the Sandhills did not differ significantly.

[†]No significant differences between any of the three groups.

[‡]Each group differs significantly from the other ($p < .001$).

mean for all groups up to 8.3 days. The experience of a few long-stay hospitalizations may have skewed these generalizations.

The urban dwellers were slightly, but significantly ($t = 2.4, p < .05$), more likely to have a primary health provider than were those living in the Sandhills. And, the urban group had been with their primary provider for a longer time (12.1 years versus 9.2 years) than those in the rural area ($t = 2.52, p < .01$). The urban sample also expressed slightly higher satisfaction with their primary provider ($t = 2.02, p < .05$); however, only 5.6 percent of the entire group indicated that they were dissatisfied with the care they received from their primary health care provider. As might be anticipated, the largest difference was in mean travel time to primary provider (urban = 15.9 minutes, rural = 42.3 minutes). Only 7.6 percent reported delaying needed health care for any reason, less than one percent said it was because of a transportation problem; there were no intergroup differences in this comparison.

Despite a significant difference in distance to hospital (six miles vs. 43.7), there were no differences between the groups in terms of expressed satisfaction with hospital care available. Self-assessed health did not correlate significantly with travel time to primary provider ($r = -.07$), travel time to hospital, or urban/rural residence.

A total of 217 of the 500 individuals interviewed live alone. Of these, 122 responded that there was someone who could help them with activities of daily living (ADLs). The Sandhills group was less likely to report having someone available to help with performance of ADLs ($t = 2.92, p < .004$). This might be interpreted in either of two ways: the very rural residents may have fewer persons to help, or because of distance from neighbors, they may feel they should rely less on others for help. Regardless, there were no intergroup differences in availability of someone to help for those who reported needing help. Levels of functioning (ADL and IADL scores) did not differ between urban and rural respondents.

A forced-entry multiple regression procedure suggested that the primary predictors of inability to perform activities of daily living are age (disability increases with chronological age), self-reported health status, and being a member of a minority group. Living alone and being male also contribute slightly to the variance. About 8.7 percent in the urban sample and 6.5 percent in the rural group felt that they needed help with performing one or more of the activities of daily living; however, only nine in Douglas County and ten in the Sandhills counties felt that they needed help but had no available assistance.

Although only 27 out of the 500 respondents were not covered by Medicare, there were significant differences by group: virtually all of those in the Sandhills were Medicare-covered, a rate significantly higher than either of the other two samples. In response to the question, "Do you have supplemental health insurance?" (in addition to Medicare), 416 indicated that they did, and in almost every instance were able to name the company. There were no urban/rural differences in non-Medicare health insurance coverage. This is consistent with the findings of Mueller and Comer (1990), who found no metropolitan/nonmetropolitan differences in health insurance coverage among Nebraska households.

The particular area of health care that could be considered under-utilized by the respondents in this study is dental care. Asked how long it had been since their last visit to a dentist, the responses ranged from one to 768 months, with a mean of 161 months. This average is no doubt influenced by the data from the 58 individuals who had not seen a dentist during the previous 20 years and the 43 who responded "don't know" to this item. The median response for this item was 12 months — about half had been to a dentist during the previous year, and half had not; 63 percent had seen a dentist during the previous three years.

Approximately two-thirds of the elderly respondents received some dental care, often on a regular basis, and a little more than one-third received essentially no dental care. A total of 186 from the entire group of 500 indicated receiving annual dental care, and there were large differences in this regard, with the Sandhills residents getting an annual dental exam much less frequently than the other two groups ($t = 3.24, p < .001$).

Of the 500, 327 wear dentures, and the average age of the dentures is from nine to ten years. There were no differences, however, in expressed levels of satisfaction with dental care between the three samples, and only 24 people out of the entire 500 indicated that they were dissatisfied or very dissatisfied with their dental care.

Results: Health Attitudes and Independence

The low rates of dental care utilization and, to a degree, the relatively high rate of those in all groups who had not seen a physician in the previous two years, may be more a function of health habits, preferences, and attitudes than of the availability of services. Well over a third of the entire sample sees a doctor only when ill, not for health maintenance or prevention purposes; a similar percentage gets no dental care.

Responses to health attitude items differed little by location of residence, so they will be discussed in terms of the entire sample of 500. Several questions were asked in such a way as to give subjects an opportunity to give an opinion or a belief: statements were read with which they could respond that they strongly disagree, disagree, agree, or strongly agree.

In attitude measurement, one must always take into account the element of social desirability, and this is particularly true of interviews (in contrast to anonymous paper-and-pencil surveys). Social desirability is giving a response or tending to give a response that is perceived to be more acceptable. As an illustration, more than 80 percent of these respondents agreed or strongly disagreed with the statement, "Even if a person is feeling good, he should get a general physical exam every year."

In some instances, there are behavior checks: in this example, we know that the mean time since last physical exam for the group as a whole was about 28 months, with a standard deviation of over 60 months. That is, the majority did not go for an annual physical, even though they agreed that it is a good idea. Unfortunately, not every attitude item has a behavioral check, and we can only speculate as to the influence of social desirability on some statements. To overcome this influence, many concepts are tested with several different questions.

Attitudes correlated well with behavior on items relating to health independence. Large majorities agreed or strongly agreed with statements indicating that most health problems are self-limiting. This is confirmed by findings that fully 37 percent will see a doctor only when ill, and that 339 out of 500 disagreed or strongly disagreed with the statement, "If a doctor told me I needed a major operation, I would have it done immediately." Only eight people (1.6 percent of the total) strongly agreed with this item, giving something of an indication of the nature of health independence among these respondents.

Four other statements relate to health independence:

	Strongly Disagree	Disagree	Agree	Strongly Agree
If you wait long enough, you can get over most any disease without getting medical aid.	1	97	360	42
Good personal health depends more on an individual's strong will power than on vaccinations, shots, and vitamins.	6	187	297	10
Some home remedies are still better than prescribed drugs for curing illness.	8	194	288	10
I'll avoid seeing a doctor whenever possible.	26	199	260	15

Given the indication that most of these older people prefer to tough it out or at least maintain a posture of internal personal control in terms of health matters, their overwhelmingly favorable disposition toward the medical profession may seem somewhat surprising. This, however, may be highly influenced by factors of social desirability:

	Strongly Disagree	Disagree	Agree	Strongly Agree
The medical profession is about the highest calling a person can have.	3	125	324	48
Modern medicine can cure most any illness.	19	296	180	5
Choosing your own doctor is about the most important thing in getting good medical care.	2	47	385	66
The care I have received from doctors in the last few years was excellent.	2	33	393	72

Despite these responses, the great majority resented the high cost of medical care, particularly physicians' incomes:

	Strongly Disagree	Disagree	Agree	Strongly Agree
The costs of medical care, in general, are too high.	2	29	305	164
Most doctors are more interested in their incomes than in making sure that everyone receives adequate medical care.	15	124	336	25

Combining these and other attitude items into a scale of health beliefs, the Douglas County respondents indicated a more positive attitude toward health care in general and in the efficacy of doctors and medicine, when compared to responses from the Sandhills residents ($t = 2.87, p < .01$). And, the Douglas County subjects were much more likely to see a doctor for common health problems (sore throat, diarrhea, feeling tired, shortness of breath) than were people in the Sandhills ($t = 3.69, p < .001$).

The factor of race (the Douglas County sample was the only group which had any appreciable number of members of minority groups) seemed to be a more important variable than age, income, sex, or ruralness. Black persons in the sample were significantly more likely to be impaired in functional ability (score on ADLs) and rate themselves as frail. They also reported more visits to physicians and a more favorable attitude toward physicians. Although this study did not test for health locus of control *per se*, there did seem to be a tendency for African American respondents to express greater confidence in powerful others. This might be ascribed as much to physical frailty, however, as to health attitudes. Black respondents scored several significant correlations with specific ADL items:

	r	p
Handle own money	-.40	.01
Dress and undress self	-.56	.01
Do personal grooming	-.56	.01
Get in and out of bed without help	-.38	.01
Bathe without assistance	-.38	.01

One can only speculate, of course, as to the reason for these relationships. The rural elderly may hold to values of self-reliance and independence in terms of personal matters to a greater degree than others. Alternatively, the availability of social and supportive services in the metropolitan area may allow persons who are more frail to remain independent and living at home longer. The goal of social and health care assistance programs is to keep people in their own homes and out of institutions for as long as possible.

Finally, a self-assessment of health did not correlate significantly with ruralness ($r = -.03$) or with travel time to primary provider ($r = -.07$). We received the overwhelming impression that access to health care was not perceived as being an insurmountable problem among the respondents. Of the 500 respondents, only 38 indicated that they had delayed receiving health care they perceived as being needed; only 3 said that the reason for this was a transportation problem; 12 said they were too busy.

The Sandhills of Nebraska fall into a belt of contiguous counties stretching about 220 miles from Garden County in the Panhandle to Wheeler County in the east. While the Sandhills counties surveyed contained only two physicians and one hospital, residents by no means perceived access to health care as a problem. They merely traveled north or south to larger communities for services, and many felt willing to trade off convenience and distance from services for other amenities. Sandhills residents were easily able to tell interviewers where people from their particular area went for medical care: Wheeler County residents went to O'Neill, Neligh, and Albion; Garfield County residents went to Ord or O'Neill; people in Blaine and Loup Counties went to Broken Bow or Ainsworth. The most isolated of all, Grant County, has a new physician. People in Logan, Thomas, Hooker and McPherson went to North Platte; and those in Arthur and Garden Counties went to Ogallala or Scottsbluff.

Many Sandhills respondents reported driving past a doctor or hospital in a closer community to go to one farther away they liked better. In several instances this increased

the one-way trip from 60 miles to 120. For some, at least, the feeling seemingly was that if you get in your car to go to the doctor, you might as well drive two hours to one you like rather than one hour to one you don't.

Summary and Conclusions

A total of 196 older residents of Douglas County, Nebraska; 104 older residents of the four counties bordering Douglas County; and 200 older persons residing in eleven rural counties of the Sandhills area of Central and Western Nebraska were interviewed for this study. They were contacted using random-dialing techniques and answered questions resulting in 231 variables including perceptions of current health, social networks, restrictions in activities of daily living, attitudes toward health care services available to them, and a number of demographic items. Mean interview time was 26.7 minutes.

While the rural residents were on the average about four years older than their urban counterparts, they reported a lower incidence of illness and shorter hospital stays if they were hospitalized. Other than travel time and distance to primary providers and hospitals, there were few differences between the urban and rural samples. Fewer than one percent of either group reported delays in needed health care because of cost or transportation. On the average, most had not had an annual physical examination, yet most had a family doctor, were highly satisfied with that doctor, and had seen him or her within the previous year. Two-thirds rated their health as good or excellent.

The rural residents were no less satisfied with their health care than were the urban. There were virtually no urban/rural differences in terms of self-ratings of health, comparison of health today to five years ago, health compared to others of own age, use of emergency rooms, hospitalization episodes during the previous year, or rate of Medicare and supplemental health insurance coverage.

Implications from this study point to several public policy questions. First, access to health care for at least the great majority of the aged in the most rural part of the state may not in fact assume the crisis proportions that would be portrayed by conventional wisdom. The "drive by" phenomenon indicates that these respondents often travel very great distances to see a physician of their choice rather than one who is more conveniently situated. Recognition of this phenomenon may call into question current efforts to provide incentives to family physicians to locate in rural areas.

We have some evidence that older (and younger) persons in rural areas may view the family practice physicians who would locate in rural areas as "not good enough" when it comes to personal preference for a health care provider. This seems to be especially true when the family practitioner is of foreign birth. And, it may be indicative of the increasing sophistication of the health care consumer. Many may pass up a family practitioner when confronted with a health problem and travel farther in quest of an internist or other specialist. At younger ages, it is apparent that few family practice physicians are called upon for prenatal care or delivery services; rural and urban health care consumers seek out obstetricians for these services and pediatricians for subsequent care of their infants. This may involve considerable travel for mothers living in the most rural areas.

Similarly, we have some indication that persons in small towns may ignore a local doctor for anything but emergency care and seek urban specialists for most other health care needs. There may be a perception that doctors who would locate in the most rural areas are not very good doctors. Illustrative is the comment received from one resident of a Sandhills county when asked if the nearest town had a physician: "No, thank God. We got rid of him. Now we have a good physician's assistant."

Such perceptions, if pervasive, may undermine through market forces public policy efforts at bringing primary care to rural areas. We are aware of more than one family practitioner who has left a rural part of the state, discouraged at the prospects of ever establishing a practice that would generate what is perceived to be an adequate income.

Because of this, at least three additional research efforts are called for: First, an intensive study is needed to see if what we have observed is true: is there a substantial "drive by" phenomenon in primary health care among people of all ages in rural parts of the state? That is, do a substantial proportion of rural health care consumers have negative perceptions of the physicians most available to them, and do they then drive considerable distances to obtain other physician services that they perceive to be of higher quality?

Second, what are the dynamics of primary health care in the most rural areas? Do generalists and family practitioners perceive that there are inadequate rewards in rural primary medicine, relative to the hours involved and the comparable rewards available elsewhere? One family practitioner (in another state) complained to us that he had to, "refer all the interesting cases elsewhere." Research is needed to determine if this is the situation in substantial area of rural Nebraska.

Third, an intensive evaluation of efforts to attract physicians to rural areas is called for. Various plans that include more intensive recruiting of medical students from rural areas, giving rural applicants priority in medical school admission, and providing incentives to attract practitioners to rural communities need to be assessed to determine their actual impact. If there is evidence of some success, then they might need to be supported ever more vigorously. If, on the other hand, market forces and perceptions of consumers undermine these efforts, then the dollars invested in them might better be spent elsewhere. Success at placing primary care physicians in rural areas might be evaluated in comparison to the effectiveness of utilization of physician assistants or nurse practitioners in networks that feed into more centralized clinics.

A more fundamental question is raised by the results of this study. Given that the random sample of older persons in the Sandhills was four years older than that in the urban sample, and that they were at least as healthy in a number of measures and had fewer hospital days once admitted to a hospital, we need an answer to the basic question: is there a correlation between availability of physicians and the overall health of populations? This may be an area of inquiry that goes beyond the scope of our current research, and it may be one that threatens conventional wisdom. One purpose of research, however, is to determine if what everyone knows to be true in fact really is true. Based on the present study, though, we feel justified in raising this question.

The study showed more similarities between the urban and the rural older populations than differences. Most are independent and self-sufficient, which is the advantage of studying random samples of community-dwelling older persons. Their interactions with friends and family seem to be consistent with national norms.

These are stable people: 452 of the 500 live in a single family dwelling that they own; their mean number of years at the same address is 29.3. There is for the most part a remarkable lack of disability among this population. They are overwhelmingly satisfied with the health care they receive, although some are vulnerable and many have long distances to travel to receive health care. Those that want dental care are able to get it, although this does not seem to be a priority for a fairly sizable proportion. Further research might be focused on different ways whites and blacks perceive health care, along with the interaction of community-based services that allow more frail people to live at home for longer periods.

The present study challenges conventional stereotypes of the health status of the rural elderly. As Nyman and his colleagues have found in their recent study of rural and urban home health patients in Wisconsin (1991), it is often difficult to demonstrate genuine evidence for problems of access. While many rural older persons no doubt have great difficulty in obtaining adequate health care, the same could be said for many urban-dwelling older persons. The difference for many seemingly is a drive of an hour or two rather than one of 15 minutes. For the most part, however, both groups report receiving the services that they need and high levels of satisfaction with those services.

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