Differences among black, Hispanic, and white people in knowledge about long-term care services

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This article provides data obtained through telephone interviews with 1,608 white, black, Mexican American, or Puerto Rican respondents. The study was designed to measure differences among ethnic groups in knowledge and attitudes toward long-term care services and the extent to which knowledge and attitudes affect service use.

Across all groups, there is less knowledge about long-term, community-based care than institutional services. The extent of knowledge about services is limited among all groups, but especially among Puerto Ricans. There are marked differences among groups in attitudes toward services. Minority groups are far more likely to perceive care of the elderly as a family responsibility and to stress the importance of ethnic factors in service delivery. Despite differences among groups, knowledge and attitudes are less directly related to use of services than is activity limitation. This may be because only a very small proportion of the respondents had any experience with service use.

Introduction

Patterns of health-related use of services vary between white people and minority group members and among different minority groups. Reasons cited for these differences include possessing varying degrees of information and/or different attitudes toward services. Lack of knowledge about services has been cited as a barrier to service use among minorities by a number of authors (Bell, 1976; Carp, 1976; Kent, 1971). In a study of minority participation rates of 205 service providers in three counties (Holmes *et al.*, 1979), lack of knowledge of service availability was cited by service providers as the single greatest barrier to service use.

Culturally determined attitudes which have been cited in the literature as influencing patterns of service use include emphasis on family-oriented caregiving and lack of physical and psychological accessibility of services (for example, staff who shares the same language, traditions, and values; service location in minority neighborhoods). A number of authors have stressed the importance of these issues (Bell, 1976; Carp, 1976; Cueller, 1980; Quesada and Heller, 1977; Torres-Gil, 1977). Confirming the importance of minority staff, in our study of 205 service providers (Holmes, *et al.*, 1979), the most important predictor in a multiple regression analysis of whether an agency served a percentage of minority persons proportionate to their representation in the county was proportion of minorities on the staff.

The aim of this study was to explore differences in knowledge and attitudes between white and minority persons and the relation of any such differences to use of services.

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Method

Sample selection

The study was based on 1,608 telephone interviews with 410 white people, 399 black people, 402 Mexican-Americans, and 397 Puerto Ricans living in eight counties of the United States in which Community Research Applications, Inc. (CRA) had collected data for an earlier study (Holmes, *et al.*, 1979). The counties were selected for their relatively high proportion of the target ethnic groups[1] and for the availability of the three service modalities of interest in the current study: in-home nursing, homemaker services, and nursing homes. Three counties were selected for their Mexican-American populations, one for its Puerto Rican population, and four for their black populations. The data were collected by the National Center for Telephone Research, a subsidiary of the Louis Harris organization, which developed a probability sample with quotas within each county. Contact was made via random digit dialing. Preliminary screening questions estalished the ethnicity of the person answering the telephone and the availability of an adult for the interview. Once the quota for either minority group members or nonminority group members had been reached in each county, additional random contacts were screened out. Table 1 illustrates the breakdown of respondents in each county.

[1]Four counties were randomly selected from a pool representing the upper decile of counties having the highest proportion of blacks, and four counties from a pool representing the upper decile of counties having the highest proportion of Hispanics.

Table 1
Characteristics of respondents, by county

County	Prevalence of target group	Minority respondents	White respondents
	Percent	Number	
Mexican-American			
Santa Fe (New Mexico)	64.9	134	50
Bexar (Texas)	45.3	135	52
Imperial (California)	46.0	133	52
Puerto Rican			
New York City (New York)	15.2	397	52
Black			
Hagwood (Tennessee)	54.7	100	51
Dimwiddi (Virginia)	55.1	100	53
Chatam (Georgia)	34.1	100	50
Natchitoches (Louisiana)	37.0	99	50

The structured interview schedules were translated into Spanish, and interviews were conducted in Spanish when desired by the respondent. There were virtually no differences in refusal rates among the different groups. The only consistent difference was in length of interview; Southern respondents took far longer to interview than did their northern counterparts.

Interviews encompassed three areas:

- The extent of knowledge about service availability, service provider functions, sources of information about services, and sources of reimbursement (including Medicare and Medicaid).
- Attitudes toward various aspects of service use and service delivery.
- Actual service use.

Sample profile

As previously discussed, the sample comprised respondents residing in eight counties across the country. Tables 2, 3, and 4 present a profile of each county's respondents by major demographic variables.

Most counties are similar in number in the household, age, and income. The greatest difference, which accounts for the major proportion of the chi-squares in Tables 3 and 4, is between counties 5 and 8 (predominantly black areas in the southern United States)

Table 2
Number in household, by region

Number in household	1 (N=179)	2 (N=179)	3 (N=176)	4 (N=534)	5 (N=134)	6 (N=136)	7 (N=138)	8 (N=132)
				Percent				
Total	100	100	100	100	100	100	100	100
Alone	9	10	7	13	8	8	8	12
One other person	22	22	16	22	20	18	30	20
Two other persons	23	24	20	19	22	23	25	17
Three or more persons	46	44	57	46	50	51	37	51

Table 3
Age, by region

Age	1 (N=179)	2 (N=179)	3 (N=176)	4 (N=534)	5 (N=134)	6 (N=136)	7 (N=138)	8 (N=132)
				Percent				
Total	100	100	100	100	100	100	100	100
0-49 years	69	64	76	77	55	66	72	52
50-62 years	21	25	17	14	17	19	15	27
63 years or over	10	11	7	9	28	15	13	21

Table 4
Income,by county

Income	1 (N=179)	2 (N=179)	3 (N=176)	4 (N=534)	5 (N=134)	6 (N=136)	7 (N=138)	8 (N=132)
				Percent				
Total	100	100	100	100	100	100	100	100
Less than $5,000	11	18	10	23	40	17	23	31
$5,000-$14,999	43	44	45	50	43	44	39	39
$15,000-$24,999	25	26	31	16	10	24	21	18
$25,000 or more	21	12	14	11	7	15	17	12

and the remaining counties (X^2=80.45, 14 df, P<.01; X^2=103.82, 21 df, P<.01). The resondents from counties 5 and 8 tended to be older with less income. However, as discussed later, the major differences are between Puerto Ricans and other groups, particularly white people; thus it is unlikely that this regional anomaly has an appreciable impact on study findings.

Tables 5 through 8 show demographic variables describing the four study groups. There were significant differences among the groups on three of the four descriptive variables. These differences reflect differences found in the general population; for example, Hispanics were significantly younger than other groups. While only 8 percent of Hispanics in our sample were age 63 and over, 22 percent of the other groups were in this age range (X^2=83.3, 6 df, P<.01). This is consistent with the 1980 national census figures which show a median age for Hispanics of 23.2, compared with 31.3 for white people (U.S. Bureau of the Census, 1980).

White people had significantly fewer household members than did the other groups (one-third of the white group versus one-half of the other groups had three or more household members (X^2=87.33, 9 df, P<.01)). As Table 7 shows, significantly more Puerto Ricans (26 percent) than members of other groups had been in their community for 2 years or less.

In reviewing the above differences, there were no efforts to establish whether there are underlying differences associated with ethnic/racial group membership per se. Such a goal would require developing matched samples among the various groups, or otherwise controlling for covariates of the major study dimensions. Instead, the question is whether, for whatever reason, different factors should be taken into account, or differentially weighted, to enhance service delivery to different ethnic/racial groups. For example, the Puerto Ricans surveyed had resided in their present neighborhood for less time than had their white study counterparts. This undoubtedly accounted for group variance in service information scores. However, the fact remained that more needed to be done to inform Puerto Ricans—the recent arrivals—about community-based services. From a sampling standpoint, it is important to note that sample size was adequate, and every person accessible by telephone in each of the target counties had an equal choice for selection into the study, once the sampling ratio (white versus minority) was taken into account.

Table 5

Age of respondents, by ethnic group

Age	White (N=410)	Black (N=399)	Mexican-American (N=402)	Puerto Rican (N=397)
	Percent			
Total	100	100	100	100
0-49 years	59	60	74	81
50-62 years	19	18	18	11
63 years or over	22	22	8	8

Table 6

Percent in household, by ethnic group

Number in household	White (N=410)	Black (N=399)	Mexican-American (N=402)	Puerto Rican (N=397)
	Percent			
Total	100	100	100	100
Alone	15	8	7	10
One other person	33	21	15	15
Two other persons	19	21	24	21
Three or more other persons	33	50	54	54

Table 7

Length of time in community

Length of time in community	White (N=410)	Black (N=399)	Mexican-American (N=402)	Puerto Rican (N=397)
	Percent			
Total	100	100	100	100
2 years or less	16	11	16	26
More than 2 years	84	89	84	74

Table 8

Income, by ethnic group

Income	White (N=410)	Black (N=399)	Mexican-American (N=402)	Puerto Rican (N=397)
	Percent			
Total	100	100	100	100
Less than $5,000	32	32	32	32
$5,000-$14,999	45	46	46	46
$15,000-$24,999	17	16	16	16
$25,000 or more	6	6	6	6

Results

Knowledge

Knowledge of service availability

A key prerequisite to appropriate use of services is knowledge that the services exist. Respondents were asked whether each of the three service modalities of the study were available in their community.

Differences among population subgroups were highly significant for all three service modalities. Because all three services were available in the community, only a "yes" response reflected accurate knowledge. Proportionately fewer Puerto Ricans than persons in the other three groups knew about the availability of in-home nursing services (X^2=42.86, 3 df, P<.01). Overall, only 40 percent of respondents knew that such a service was available in their communities. (See Table 9.) The level of knowledge about the availability of homemaker services was even lower; only 31 percent of respondents knew that this service was available. Proportionately fewer Puerto Ricans and white people knew about this service (X^2=12.09, 3 df, P<.01). Differences between Puerto Ricans and the other three groups' knowledge of the availability of nursing homes were striking (X^2=229.45, 3 df, P<.01). More than twice as many respondents in each of the other three groups knew about the availability of nursing homes than did the Puerto Rican respondents.

Aside from the marked differences among ethnic groups, it is important to note the differences in awareness of community-based versus institutional long-term care services. Overall, only 40 percent of all respondents were aware of in-home nursing services, and only 31 percent were aware of homemakers, but 66 percent were aware of the availability of nursing homes.

Knowledge of service provider functions

Achieving an appropriate solution to a problem demands that the individual have available information regarding possible options. Coping requires skill in both problem and resource identification. Respondents were asked what an in-home nurse and a homemaker do; they were scored by whether they could name at least one correct function. (See Table 10.)

Overall, 39 percent of respondents could not name a single activity or function of an in-home nurse and almost half (47 percent) did not know what a homemaker does. The proportion of people who gave "don't know" responses was relatively consistent across subgroups, suggesting that the general population was lacking this type of service knowledge.

Knowledge of sources of information about services

Significantly more Puerto Ricans than other respondents reported that they would not know where to get information about in-home nursing ($X^2=37.00$, 3 df, $P<.01$). As Table 11 shows, health facilities and physicians or other professionals were most frequently cited as information sources about in-home nursing by all groups. Proportionately more Hispanic and Mexican-Americans than black and white respondents stated that they would not know where to get information about homemaker services ($X^2=15.85$, 3 df, $P<.01$). The Department of Social Services was cited as the most common information source about homemaker services by respondents in all four groups. A significantly higher proportion of Puerto Ricans than of other respondents did not know where to get information about a nursing home ($X^2=52.36$, 3 df, $P<.01$).

Overall, although there was some variability across groups in sources of information, there were no consistent patterns. Minority respondents were not more likely to rely on family/friends for information than were white respondents. Departments of Social Services, health facilities, and professionals were perceived as the most important gatekeepers to long-term care services when it came to disseminating information.

Knowledge of sources of reimbursement for services

Relatively small proportions (11-12 percent) of people cited Medicare and Medicaid as potential sources of reimbursement for in-home nursing services (Table 12). A high proportion (44 percent) reported lack of knowledge regarding sources of reimbursement for in-home nursing. An even higher proportion of respondents (49 percent) did not know of any sources of reimbursement for homemaker services. The proportion of people who did not know of sources of reimbursement for nursing homes was smaller than the proportion of people who did not know about sources of reimbursement for community-based services. Puerto Ricans were significantly over-represented among those who did not know about sources of nursing home reimbursement ($X^2=37.39$, 3 df, $P<.01$).

Table 9

Knowledge of service availability, by type of service[1,2]

Service	Total (N=1608)	White (N=410)	Black (N=399)	Mexican-American (N=402)	Puerto Rican (N=397)
			Percent		
In-home nursing	40	44	43	46	26
Homemaker	31	29	36	33	25
Nursing home	66	78	73	77	35

[1]These percentages do not total 100. They can be interpreted in the following manner: 44 percent of the 410 white respondents have knowledge that in-home nursing is available in their communities.
[2]Respondents were asked: "Does your community have (type of service)?

Table 10

Knowledge of service provider functions[1,2]

Service provider functions	Total (N=1608)	White (N=410)	Black (N=399)	Mexican-American (N=402)	Puerto Rican (N=397)
			Percent		
Knows at least one function					
In-home nursing	61	64	60	59	61
Homemaker	53	55	48	53	56
Does not know any functions					
In-home nursing	39	36	40	41	39
Homemaker	47	45	52	47	44

[1]These percentages do not total to 100.
[2]For each type of service, respondents were asked to indicate what providers do. Possible responses included "giving injections, giving personal care," and the like.

Table 11

Knowledge of sources of information about services[1,2]

Possible sources of information	In-home nursing					Homemaker					Nursing homes				
	Total (N=1608)	White (N=410)	Black (N=399)	Mexican American (N=402)	Puerto Rican (N=397)	Total (N=1608)	White (N=410)	Black (N=399)	Mexican American (N=402)	Puerto Rican (N=397)	Total (N=1608)	White (N=410)	Black (N=399)	Mexican American (N=402)	Puerto Rican (N=397)
	Percent														
Social Security	4	2	2	4	6	4	4	2	5	7	6	3	4	7	10
Dept. of Social Services	17	16	23	16	15	28	24	32	30	27	18	10	23	20	19
Social service agency	3	2	3	4	4	6	6	7	7	5	3	2	3	3	4
Other social service	3	4	2	3	3	5	6	7	5	4	4	5	3	3	6
Health facility	41	40	46	38	38	17	19	19	13	17	19	18	23	14	18
Physician/other professional	28	37	25	34	17	10	12	11	8	9	27	40	31	24	14
Family/friend	4	3	2	4	7	5	6	2	4	7	8	13	4	7	9
Don't know	23	18	20	21	34	37	33	32	41	42	20	10	21	18	30

[1]Percentages do not total to 100 because multiple responses were possible.
[2]Respondents were asked where they could go to find out about each type of service. So, for example, 28 percent of the total sample said they would ask physicians or other professionals if they needed information about in-home nursing services.

Table 12

Knowledge of sources of reimbursement for services[1,2]

Sources of reimbursement	In-home nursing					Homemaker					Nursing homes				
	Total (N=1608)	White (N=410)	Black (N=399)	Mexican American (N=402)	Puerto Rican (N=397)	Total (N=1608)	White (N=410)	Black (N=399)	Mexican American (N=402)	Puerto Rican (N=397)	Total (N=1608)	White (N=410)	Black (N=399)	Mexican American (N=402)	Puerto Rican (N=397)
	Percent														
Medicare	12	19	8	13	9	7	9	5	7	6	14	26	9	14	9
Medicaid	11	14	7	10	16	7	9	5	6	8	12	20	9	10	10
Dept. of Social Services	30	28	35	31	27	34	33	38	32	34	38	37	43	41	32
Private carrier	10	15	5	11	10	4	6	2	3	6	7	10	5	7	5
Own resources	7	6	4	6	7	6	8	4	6	5	9	15	7	10	6
Don't know	44	37	46	45	47	49	45	48	51	52	39	30	39	38	51

[1]Percentages do not total 100 because more than one response was possible.
[2]Respondents were asked to indicate what sources they knew of which might help to pay for each service. So, for example, 28 percent of the white respondents indicated that the Department of Social Services would be a source of reimbursement for in-home nursing service.

Table 13

Knowledge of Medicare and Medicaid eligibility requirements[1,2]

Eligibility requirements	Total (N=1608)	White (N=410)	Black (N=399)	Mexican-American (N=402)	Puerto Rican (N=397)
			Percent		
Medicare					
Correct	30	40	21	30	30
Incorrect	13	11	12	12	17
Not familiar	68	61	73	70	67
Medicaid					
Correct	15	16	8	11	23
Incorrect	8	5	8	8	11
Not familiar	79	80	83	83	69

[1]Percentages do not total to 100 because some respondents gave both a correct and an incorrect response.
[2]Respondents were asked if they were familiar with the requirements for Medicare and Medicaid. For example, 40 percent of the white people were able to give one correct response regarding Medicare requirements.

Knowledge of Medicare and Medicaid eligibility requirements

Respondents were asked to illustrate their knowledge of Medicare and Medicaid by listing the requirements for eligibility. As Table 13 shows, the majority of the total sample was ignorant in this regard.

There were significant differences among groups; proportionately more white people gave at least one correct response and fewer reported lack of familiarity with Medicare eligibility requirements ($X^2=16.17$, 3 df, $P<.01$). Overall, 68 percent of the respondents reported lack of familiarity with Medicare eligibility requirements. There was an even lower level of knowledge about Medicaid; 79 percent of the sample reported lack of knowledge about Medicaid eligibility requirements. Puerto Ricans were the most knowledgeable about Medicaid, which is consistent with the finding that nearly one-third of the Puerto Ricans interviewed reported that a family member was enrolled in medicaid ($X^2=31.43$, 3 df, $P<.01$).

Scale of knowledge of long-term community-based services

Using all of the previously-discussed items for in-home nursing and homemaker services, a "knowledge of community-based services" scale was constructed by adding the total number of correct knowledge items, and subtracting the number of wrong items (the higher the score, the greater the knowledge). Internal consistency, as measured by Cronbach's alpha, for the 30-item scale is .70 (Cronbach, 1951). Table 14 presents item statistics for each group.[2]

Although Puerto Ricans and black people were at a particular disadvantage when it came to knowledge of community-based services, the mean score was very low for all groups.

[2]The scale mean and standard deviation are 3.94 and 3.43, respectively; the observed range is from -2 to +15.

Table 14

Knowledge of community-based services

Means, standard deviation, and numbers of respondents

Ethnic/racial group	Mean	Standard deviation	Number
White	4.32	3.63	410
Black	3.75	3.18	399
Mexican-American	4.03	3.40	402
Puerto Rican	3.64	3.45	397

Significance of differences, using two-tailed t test

Ethnic/racial group	White	Black	Mexican-American
Black	.01	—	—
Mexican-American	NS	NS	—
Puerto Rican	.01	NS	.01

Knowledge of long-term, institutional services

A "knowledge of nursing home services" scale, was also constructed, containing items related to potential reimbusement sources for institutional care (Table 15).[3] Items were scored in the same manner as knowledge of community resources, one point was assigned to correct answers and one point subtracted for wrong responses. The alpha for this six-item scale is .58.

Knowledge of institutional services was also very low among all groups, given a possible score of 6. Whites were significantly more knowledgeable than were members of minority groups.

Table 15

Knowledge of nursing home services

Means, standard deviations, and numbers			
Ethnic/racial group	Mean	Standard deviation	Number
White	1.11	1.26	410
Black	.54	.93	399
Mexican-American	.69	1.07	402
Puerto Rican	.55	1.01	397

Significance of differences, using two-tailed t test			
Ethnic/racial group	White	Black	Mexican-American
Black	.01		
Mexican American	.01	.02	
Puerto Rican	.01	NS	.03

Attitudes towards services

Lack of knowledge was one major barrier to service use. Culturally-determined attitudes were hypothesized to be the other major barrier.

Attitudes toward family responsibility regarding care for the elderly

One oft-cited reason for lower minority use of services was the value placed on family care of the ill elderly and the belief that caregiving is basically a family responsibility. Minority respondents, especially Puerto Ricans, were over-represented among those who agree with the ethos that services, whether community-based or institutional, are basically for people without families (Table 16). Whereas 50 percent of white people agreed that in-home nursing is for people without families, 72 percent of Puerto Ricans agreed (X^2=43.96, 3 df, P<.01). Respondents, especially white people, were more likely to feel that homemaker services, rather than in-home nursing, are for people without families, perhaps reflecting an awareness that in-home nursing requires particular skills that might not be available to family members. Differences across groups in the proportions of people who felt that nursing homes are for elderly without families were striking (X^2=65.85, 3 df, P<.01). Whereas only 44 percent of the white people agreed that nursing homes are for those without families, 59 percent of Mexican Americans, 66 percent of the black people, and 71 percent of Puerto Ricans expressed this view.

Overall, approximately half of all respondents agreed that they would feel guilty if a family member were placed in a nursing home. However, there were highly significant differences among the study subgroups (X^2=44.00, 3 df, P<.01). For example, almost two-thirds of the Puerto Ricans and only 40 percent of the white people agreed with this sentiment. Black people and Mexican-Americans were also more inclined than white people to express reservation regarding placing family members in nursing homes. However, the major differences in orientation occured between white people and Puerto Ricans.

Attitudes toward ethnic identity and language

A number of attitudinal items were developed to explore the importance of ethnic identity and language issues as possible barriers to use of services. Based on previous research, ethnicity and language of staff—and, in the case of nursing homes, location—appeared to be key issues.

There were striking differences among the study subgroups in the proportions of people who agreed that services "are not sensitive to the needs of elderly minority persons." (Table 17.) Whereas only 14 percent of white people agreed that in-home nurses are not sensitive to the needs of minority elderly, 41 percent of black people, 30 percent of Mexican-Americans, and 37 percent of Puerto Ricans agreed (X^2=83.23, 3 df, P<.01). Similarly, only 14 percent of white people, but 37 percent of black people, 32 percent of Mexican-Americans, and 43 percent of Puerto Rican people agreed that homemaker services are insensitive to the needs of minority persons (X^2=87.81, 3 df, P<.01). The percentages of people who agreed that nursing homes are not sensitive to the needs of the minority elderly were substantially greater. In fact, more than half (53 percent) of Puerto Ricans agreed with this statement. Overall, proportionately more Hispanics than black and white people agreed with this statement (X^2=24.79, 3 df, P<.01).

The importance attached to the availability of minority staff was explored through two items: "When staff and the elderly person are of the same ethnic group better service is usually provided, " and "When staff speaks the same language as the elderly person, better service is usually provided." The perceived importance of the ethnic status of the staff is attested to by the finding that, while only 21 percent of white people agreed that better in-home nursing services are provided if the nurse is of the same ethnic status as the client, 35 percent of black people, 37 percent of Mexican-Americans, and 45 percent of Puerto Ricans agreed (X^2=54.75, 3 df, P<.01). In the case of homemaker services, even higher proportions agreed, while preserving inter-group differences: 33 percent of white people, 42 percent of black people, 44 percent of Mexican-Americans, and 56 percent of Puerto Ricans (X^2=44.87, 3 df, P<.01). In the case of nursing homes, more than twice as many Puerto Ricans (59 percent) as white people (28 percent)

[3]The mean for the scale is .72, and the standard deviation, 1.10; the observed range is from 0 to 5.

Table 16

Family responsibility for care of the elderly[1,2]

Statement	Total (N=1608)	White (N=410)	Black (N=399)	Mexican-American (N=402)	Puerto Rican (N=397)
			Percent		
"This service is for people without families."					
In-home nursing	63	50	66	64	72
Home-maker	70	66	72	67	73
Nursing homes	60	44	66	59	71
"I would feel guilty knowing that a member of my family was in a nursing home."					
Nursing home	54	40	49	54	63

[1]Percentages do not total to 100.
[2]Entries in this table are the percentage of each group agreeing with each statement. For example, 50 percent of the white respondents agreed that in-home nursing is for people without families. The remainder of the white people (50 percent) did not agree with this statement.

Table 17

Ethnic identity and language barriers [1,2,3]

Statement	Total (N=1608)	White (N=410)	Black (N=399)	Mexican American (N=402)	Puerto Rican (N=399)
			Percent		
Service is often not sensitive to needs of minority elderly persons.					
In-home nursing	30	14	41	30	37
Homemaker	31	14	37	32	43
Nursing home	45	36	42	47	53
When staff and elderly are of the same ethnic group, better service is usually provided.					
In-home nursing	34	21	35	37	45
Homemaker	44	33	42	44	56
Nursing home	43	28	40	46	59
When staff speaks the same language as the elderly person, better service is usually provided.					
In-home nursing	89	91	88	88	87
Homemaker	87	89	86	86	86
Nursing home	82	84	81	78	85
It is important that the nursing home have residents of the same ethnic group as the elderly person.					
Nursing home	64	60	53	66	76
It is important that the nursing home have residents who speak the same language as the elderly person.					
Nursing home	88	88	86	87	91
It is important that the nursing home be located in the elderly person's neighborhood.					
Nursing home	58	54	54	56	67

[1]Percentages do not total to 100.
[2]Entries for this table are the percentage of each group agreeing with each statement.
[3]The statements in this table are not exact in terms of wording and format.

agreed that nursing home care is better when the staff is of the same ethnic status as the residents ($X^2=84.53$, 3 df, $P<.001$).

While ethnicity of staff was of considerable importance, the key issue was language. A large majority of people in all groups agreed that it was important for service providers to speak the same language as their clients. Ninety-one percent of white people, 88 percent of black people and Mexican Americans, and 87 percent of Puerto Ricans believed that better service is provided if an in-home nurse speaks the same language as the elderly person. There were no significant differences among groups. There was agreement among 86 percent of each minority group and 89 percent of white people about the importance of the homemaker speaking the same language. Overall, 82 percent of those interviewed agreed that it is important for staffs of nursing homes to speak the same language as the residents. Given the importance attached to language, it is likely that inability to speak with a staff person in one's own language is a major barrier to service use.

There were three additional issues pertinent to nursing homes which were not pertinent to the other two services; ethnicity of other residents, language of other residents, and location of the facility in the elderly person's neighborhood. Respondents felt that ethnic status of other residents was important. In fact, the response pattern suggested that ethnic status of residents was more important than ethnic status of staff. While only 28 percent of white people said it was important for staff to be of the same ethnic status, 60 percent saw this as important for residents. Parallel figures among black people were 40 percent (staff) and 53 percent (residents), and among Mexican-Americans, 46 percent (staff) and 66 percent (residents). In the Puerto Rican group, which had the strongest preference for ethnically-similar staff (59 percent), 76 percent agreed that a nursing home should have persons of the same ethnic status. The unanimity of agreement among Puerto Ricans, in particular, contributed to the significant differences among groups ($X^2=47.91$, 3 df, $P<.001$).

The single item in this group that elicited the highest rate of agreement (88 percent for the total sample) was the item, "It is important that the nursing home have residents who speak the same language as the elderly person." Language of staff was also considered important; 82 percent of the entire sample agreed that better service is provided if nursing home staff speaks the same language. Ethnicity of residents of staff was less important than language.

Overall, 58 percent of the respondents agreed that it is important that a nursing home be located in the elderly person's neighborhood. Proportionately more Puerto Ricans (67 percent) than those in any other group agreed with this concept ($X^2=17.80$, 3 df, $P<.01$).

Attitudes toward financial issues

Several items were developed to measure concerns about service costs. Most people did not believe that services, whether community-based or institutional, are only for people on welfare. There were differences, however, across ethnic groups in the proportion of people who believed that each service is primarily for those on welfare. (See Table 18.) Proportionately more black and fewer white people than Hispanics believed that in-home nursing is mostly for people on welfare ($X^2=22.75$, 3 df, $P<.01$), that homemaker services are mostly for people on welfare ($X^2=23.24$, 3 df, $P<.01$), and that nursing homes are mostly for people on welfare ($X^2=44.55$, 3 df, $P<.01$). Similarly, most people did not think that services are only for the wealthy.

Table 18

Attitudes toward financial issues

Statement	Total (N=1,608)	White (N=410)	Black (N=399)	Mexican-American (N=402)	Puerto Rican (N=399)
			Percent[1,2]		
Service is mostly for people on welfare.					
In-home nursing	30	23	38	28	31
Homemaker	28	20	34	28	30
Nursing home	22	11	30	20	25
Service is mostly for wealthy people.					
In-home nursing	15	8	20	17	14
Homemaker	20	17	22	20	21
Nursing home	18	16	19	17	20
Service costs too much for my family.					
In-home nursing	39	28	49	43	36
Homemaker	42	32	48	43	45
Nursing home	50	49	47	51	52

[1]Percentages do not total to 100.
[2]Entries in this table are the percentage of each group agreeing with each statement. For example, 23 percent of the white respondents agree that visiting nurses are mostly for people on welfare. The remaining 77 percent do not agree.

More minority members than white people believed that community-based services cost too much for their families. Whereas only 28 percent of white people believed that in-home nursing is inaccessible to them because of costs, 49 percent of black people, 43 percent of Mexican-Americans, and 36 percent of Puerto Ricans believed this to be the case ($X^2=41.25$, 3 df, $P<.01$). Similarly, 32 percent of white people believed that homemaker services cost too much for their families; 48 percent of black people, 43 percent of Mexican-Americans, and 45 percent of Puerto Ricans held such a belief ($X^2=25.96$, 3 df, $P<.01$). There was considerable agreement across groups about nursing home costs; approximately half of the respondents in each group believed nursing homes are too costly for them.

Community resources attitudes

A scale was constructed to measure attitudes toward use of community resources (Table 19). It contained 10 items related to homemaker and in-home nursing services and had a Cronbach's alpha of .76.[4] Typical items in this scale are "Homemakers are mostly for people without families," "Homemakers are often not sensitive to the needs of elderly minority persons," and "Homemakers are mostly for wealthy people."

A high score indicated positive attitude. White people had the most positive attitude toward community services and black people had the most negative attitude.

Table 19

Community resources attitudes scale

Means, standard deviations, and number of respondents

Ethnic/racial group	Mean	Standard deviation	Number
White	20.52	3.87	410
Black	18.89	4.98	399
Mexican-American	19.55	4.54	402
Puerto Rican	19.24	4.44	397

Significance of differences, using two-tailed t test

Ethnic/racial group	White	Black	Mexican-American
Black	.01		
Mexican-American	.01	.05	
Puerto Rican	.01	NS	NS

Institutional attitudes scale

A scale was constructed using attitudinal items related to nursing facilities (Table 20). Respondents agreed or disagreed with 15 statements related to characteristics of, and sentiments toward, nursing homes.[5] The scale, which has an alpha of .74, contains items such as "Nursing homes are often not sensitive to the needs of elderly minority persons," "Nursing homes are mostly for people on welfare," "Nursing homes are mostly for people whose families cannot be bothered to take care of them," and "I would feel guilty knowing that a member of my family was in a nursing home." A high score indicated a positive attitude toward nursing homes.

White people had a significantly more positive attitude and Puerto Ricans a significantly less positive attitude toward nursing homes.

Table 20

Respondents' attitudes toward nursing facilities

Means, standard deviations, and number of respondents

Ethnic/racial group	Mean	Standard deviation	Number
White	29.21	5.78	410
Black	27.46	6.62	399
Mexican American	27.61	6.00	402
Puerto Rican	25.25	5.34	397

Significance of differences, using two-tailed t test

Ethnic/racial group	White	Black	Mexican-American
Black	.01		
Mexican American	.01	NS	
Puerto Rican	.01	.01	.01

Activity limitation

An activity limitation scale was constructed for entry into the multivariate analyses.[6] (Table 21.) Items related to reports of difficulty experienced by an elderly relative in preparing meals, dressing, bathing, controlling bowel and bladder, and the like. The scale alpha is .60.

Table 21

Average activity limitation score, by ethnic/racial group (0=no limitation)

Ethnic/racial group	Mean	Standard deviation
White	.35	.83
Black	.29	.77
Mexican-American	.35	.80
Puerto Rican	.16	.51

The maximum possible activity limitation score was 7. Therefore, it was apparent that the base rate of disability among respondents was extremely low. This was true also of service use, as shown in Tables 22 and 23.

[4]The scale mean and standard deviation are 22.0 and 5.0, respectively; the observed range is from 0 to 30.

[5]The scale mean and standard deviation are 27.4 and 6.1, respectively; the observed range is from 15 to 45.

[6]The mean is .29, and the standard deviation is .74; the observed range is from 0 to 6.

Service use

Two scales were developed to reflect actual service use: one for community services (Table 22)[7] and the second for institutional services (Table 23).[8] The community service use scale contained 12 items related to experience with homemaker and in-home nursing services.

Table 22

Community-based service use rates (0=no service use)

Ethnic/racial group	Mean	Standard deviation
White	.53	.85
Black	.50	.76
Mexican-American	.43	.77
Puerto Rican	.50	74

Table 23

Institutional service use rates (0=no service use)

Ethnic/racial group	Mean	Standard deviation
White	.69	.85
Black	.44	.60
Mexican-American	.46	.72
Puerto Rican	.18	.48

Both scales were analyzed for internal consistency to check accuracy of coding and scoring. However, alphas were not reported for these scales; alpha was not an appropriate estimator of reliability in this context, since item responses can be relatively independent and covariances among items, low. It is unlikely that respondents would report the same service being used for different individuals with different types of impairment.

Both categories of service use were reported relatively infrequently, that is, the base rates were extremely low. This restriction of range in the dependent variables created difficulties in the multivariate analyses, a point addressed later in this discussion.

Multivariate analyses

As a first step, zero-order correlations were calculated. Examination of these correlations showed similarities among groups in constructs important to explaining use of services.

For all ethnic groups, the variables most highly associated with use of community services, such as in-home nursing and homemaker, were activity limitation and knowledge of these resources. The correlations between reported use of community services by self or family and reported functional incapacity was .25 for white people, .31 for black people, .36 for Mexican-Americans, and .26 for Puerto Ricans. (Table 24.) The correlations for use of community services and knowledge of these services were also moderate: .44, .40, .27, and .37 for white people, black people, Mexican-Americans, and Puerto Ricans, respectively. Attitudes were only modestly correlated with service use. In general, similar variables were most highly associated with actual use of community resources across ethnic groups.

This was not the case, however, for use of institutional services. For white people, Mexican-Americans, and Puerto Ricans, the variable most highly related to experience with a nursing facility was activity limitation. The correlations were .35 for white people, .28 for Mexican-Americans, and .29 for Puerto Ricans. However, the correlation of activity limitation and use of a nursing facility for black people was only .11. For white people, after activity limitation, the variables most highly associated with use of institutional services were positive attitudes toward nursing homes and knowledge of nursing homes. For Mexican-Americans, knowledge of nuring homes and years in the community were next in order of association; however, the correlations were only .22 and .14, respectively. For Puerto Ricans, the correlation between number of years in the community and actual service use was .22, and the correlation between knowledge about nursing homes and use of nursing homes was .18. For black people, most variables had only low correlations with actual use of services.

To determine which combinations of variables were most important in predicting use of community services, a stepwise multiple regression analysis was performed with actual use of community services as the criterion variable. The regression analysis was performed separately for each ethnic group.

The most important predictor of use of community services for black people, white people, and Puerto Ricans was knowledge of community resources; the zero order correlations were .40, .44, .37, respectively. The most important predictor of community service use for Mexican-Americans was activity limitation, which had a zero order correlation of .36 with the criterion. Knowledge of community services was the next most important predictor for Mexican-Americans, increasing the amount of variance explained by less than 6 percent. For Puerto Ricans, black people, and white people, the next most important predictor was activity limitation. These first two variables explained 24 percent of the variance for black people, 22 percent for white people, 19 percent for Mexican-Americans, and 19 percent for Puerto Ricans. Attitudes were not very important for white people and Puerto Ricans; receiving welfare correlated with using community services for these groups. In total, the addition of all significant predictors into the model explained about one-quarter of the variance in service use for each ethnic group.

[7]The mean is .49, and the standard deviation is .78; the observed range is from 0 to 7.

[8]The mean is .44, and the standard deviation is .70; the observed range is from 0 to 5.

Table 24

Correlations among major predictor, demographic, and dependent variables for each ethnic group and for the total group[1]

Item	Community service use					Institutional service use				
	Total (N=1,608)	White (N=410)	Black (N=399)	Mexican American (N=402)	Puerto Rican (N=397)	Total (N=1,608)	White (N=410)	Black (N=399)	Mexican American (N=402)	Puerto Rican (N=397)
Knowledge of community services	.37	.44	.40	.27	.37					
Knowledge of institutional services						.21	.18	.08	.22	.18
Attitude toward community services	.13	.09	.25	.16	.08					
Attitude toward institutional services						.16	.20	.13	.04	.05
Activity limitation	.29	.25	.31	.36	.26	.28	.35	.11	.28	.29
Number in household	−.01	−.06	.07	−.07	.02	−.06	.07	−.01	−.14	.00
Age in years	.06	.05	−.04	.10	.11	.12	.07	.12	.08	.02
Length of time in community	.05	.04	.01	.09	.11	.16	.11	.09	.14	.22
Income	.01	−.09	.06	−.10	.07	.17	−.07	.07	−.06	.06

[1]Correlations are presented only for variables used in subsequent regression analyses.

Differences also occurred among ethnic groups in predicting use of insitutional services. While activity limitation was important for three of the groups (Puerto Ricans, white people, and Mexican Americans, with zero-order correlations of .29, .35, and .28, respectively), other variables important in predicting experience of institutional services varied among groups. For example, knowledge of services was positively related to actual institutional service use among black people (.25) but was not related to use of nursing homes in any of the other three study groups.

Given the relatively modest proportion of variance accounted for through each of the multiple regression analyses, the possibility was investigated of either nonlinearity or undetected interactions of demographic variables with other independent variables. No significant departure from linearity was found, and including interaction components in the multiple regression analyses failed to contribute significantly to any prediction. Although, as discussed earlier, there were group differences in length of time in the community, age of the respondent, and income, these differences did not explain patterns of service use among the ethnic groups. As Table 24 demonstrates, the correlations for most demographic variables and service use are low, and these demographic variables are not significant predictors of institutional or community service use.

A stepwise approach to regression analysis is useful as an initial stage in examining relationships among dependent and independent variables. However, with this type of analysis variables are entered into the equation according to their unique contribution in accounting for variance of the dependent variable, without consideration of interactions among independent variables and without regard to theory. In the present context, where different populations which vary in degree of homogeneity on certain variables are compared, such a mechanical approach can be highly misleading. For this reason, the next step was to apply path analysis, a special form of hierarchical regression, to these data to examine the role of ethnicity in influencing service use, to examine the direct and indirect effects of combinations of variables on service use, and to determine whether the causal structure was different for each ethnic group.

In order to explain service use for each ethnic group, it was important to determine whether different patterns of use were in evidence and different predictors important for each group. Therefore, we calculated path and structural coefficients separately for each of the four ethnic groups. In each case, the endogenous or criterion variable was community or institutional service use, and the exogenous variables were attitudes, knowledge, and activity limitation; ethnicity was considered a moderator variable.

After examining correlations, it was decided to specify direct paths leading from activity limitations and knowledge to service use, and indirect paths from activity limitation and attitudes through knowledge to service use. Attitudes and activity limitation were designated as exogenous variables. No path was drawn from attitudes to service use, and the correlation between attitudes and

activity limitations was 0. The model was therefore over-identified and amenable to a test of goodness of fit. Path coefficients were calculated for each ethnic group and a root mean square test of goodness of fit was applied. The root mean square for use of institutional services for black people was .06; for white people, .10; for Mexican-Americans, .01; and for Puerto Ricans, .02. All of the root mean square coefficients were of the same magnitude as the standard error of the correlation coefficient, which was .05. Therefore, it seems that the model fit the data for all groups. Almost identical results for use of community-based services were obtained.

The unstandardized path coefficients are presented in Figures 1 and 2. Unstandardized rather than standardized coefficeints are reported because in this analysis comparisons are of relationships among ethnic/racial groups which vary in homogeneity on all study dimensions. As Duncan (1975) and Kenny (1979) point out, standardized coefficients may be larger for certain groups (such as white people) as an artifact of the greater variation in this group. Therefore, it is more appropriate to compare unstandardized path coefficients; however, correlations and standardized coefficients are contained in a longer version of this paper (Holmes and Teresi, 1980).

The path analysis indicates that the most important causal variable in relation to community and institutional service use for all ethnic groups is activity limitation. While there are many differences among ethnic groups

Figure 1
Unstandardized path coefficients for ethnic groups with community service use as endogenous variable

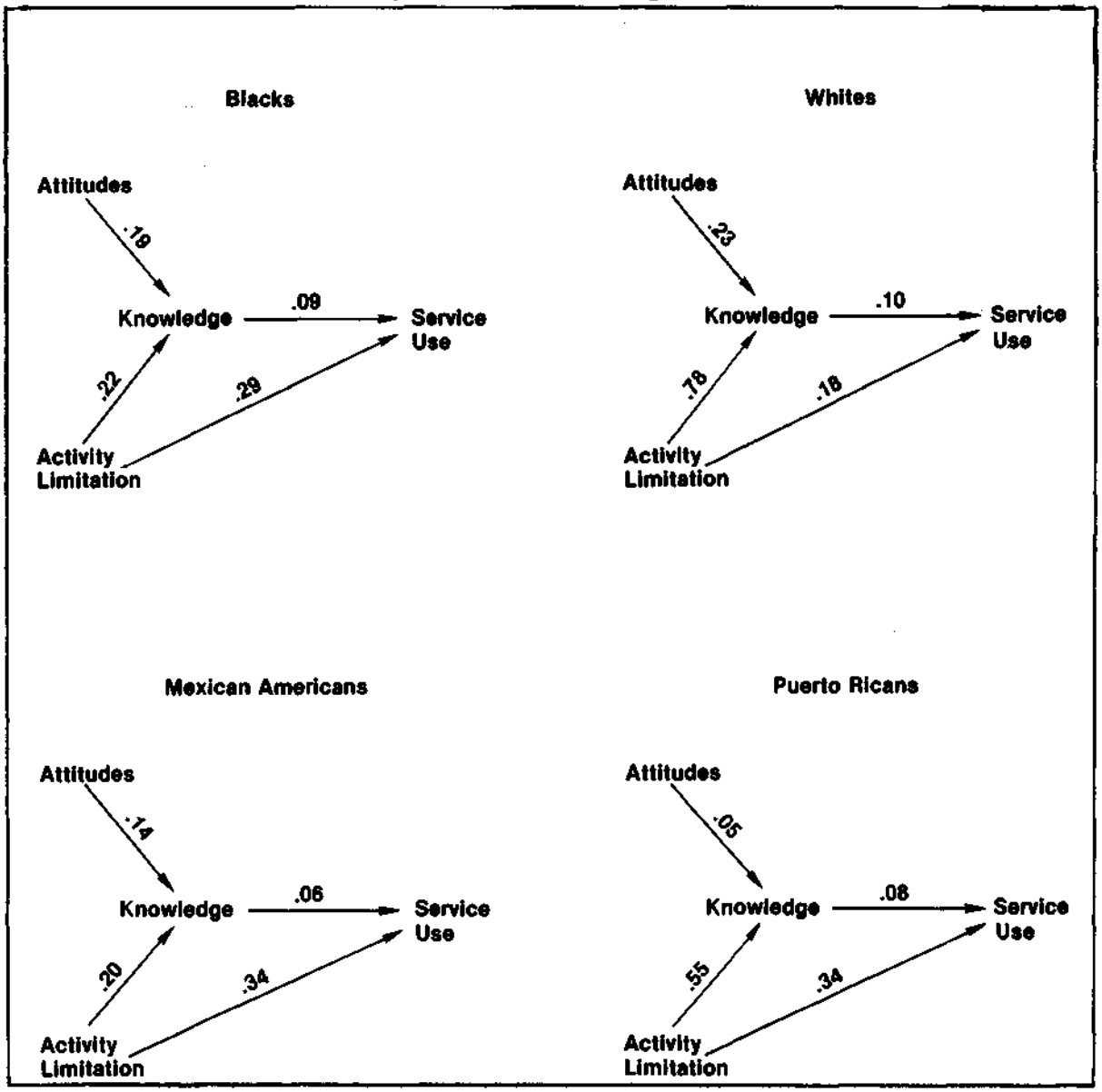
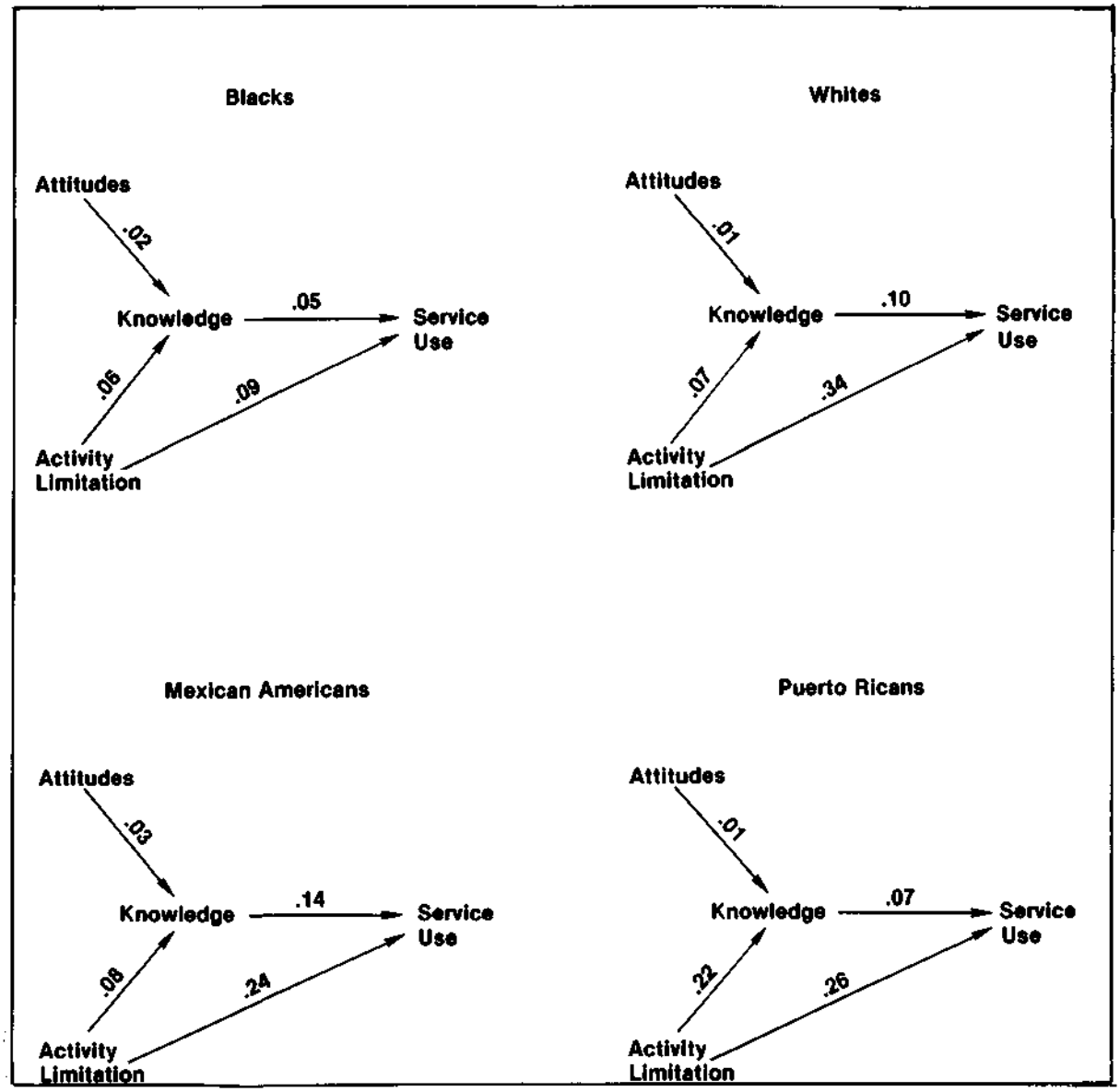


Figure 2
Unstandardized path coefficients for ethnic groups with institutional service use as endogenous variable



in the amount of knowledge they have about services, their attitudes toward services, and the relationship of attitudes and activity limitations to acquired knowledge, this analysis indicates that with regard to actual use of services, the direct effect of activity limitation is important.

The stepwise regression indicates that knowledge of community resources is the most important predictor of services use; however, this result did not account for interactions (other than demographic, as discussed earlier) among independent variables. When these are considered, the direct effect of knowledge is less important as a causal determinant than is activity limitation.

The problem associated with low base rates in terms of experience with elderly persons who have activity limitations and use services is substantial. In fact, given the extremely low base rates, it is surprising that any significant predictors of service use emerged. It is highly likely that a Type II statistical error has been committed—failing to demonstrate a significant effect which actually exists—simply because the random sample did not include appreciable numbers of persons with activity limitations, enough "at risk" persons, and enough elderly persons. The fact that even with the low correlations obtained there are still some significant effects associated with knowledge and attitudes attests to the probability of strong underlying effects which have remained hidden. That is, among a sample of persons with some degree of activity limitations who were consumers of service, it appears reasonable to assume that

the relationships found in the present study would be considerably stronger and that, therefore, knowledge and attitudes would explain a far greater proportion of variance in service-seeking behavior.

The path model presented previously only represents those factors measured in the study. To the extent that other unmeasured variables influence service use, error in prediction will occur. For example, the study did not control for the degree to which a professional gatekeeper, such as a physician or professional discharge planner, might be crucial in selecting services. While inclusion of such information would reduce the disturbance term somewhat, the importance of information and attitude among potential clients and their family members must be stressed. For example, in another study completed by the authors (Holmes, et al., 1981) in which data were collected during interviews with approximately 1,000 residents of intermediate care facilities (ICFs) and domiciliary care facilities (DCFs), more often than not it was either the family or the resident who had been the key decisionmaker, as the data in Table 25 show.

There are other variables not presented in this model which could also be of significance in relation to service use. These include the size of the support system, health of primary caregivers, and the like. However, even without including such variables, the relationship between service use and information is substantial.

Conclusions

This study has provided considerable support for its originating suppositions, particularly regarding differences among ethnic groups in their knowledge, understanding, and attitudes toward in-home nursing, homemaker services, and nursing home care. The relationship between attitude and information on the one hand, and service use (both actual and anticipated) on the other, is less straightforward.

The study focused on use of services with respect to three modalities: in-home nursing, homemaker, and nursing home. Consistently across all groups, there was a very low rate of service use, for example, an average score of .49 on the scale of service use, where the possible scale range was from 0 to 7. Even given these extremely low base rates, with accompanying (relatively) high standard deviations (.74 in the above example), significant differences were found among the study groups.

Across all groups, lack of familiarity with services was prevalent in communities which, in fact, did provide each of the services; only 40 percent of all respondents knew of visiting nurses, 31 percent knew of homemakers, and 66 percent knew of the existence of a nursing home. Given the recent emphasis on community-based delivery of long-term care services, the relatively far greater awareness of nursing homes is ironic and speaks of the need for better-focused information efforts.

Although there was greater familiarity with in-home nursing services than with the homemaker services, two-fifths of all respondents were ignorant of a visiting nurse's role. There were no differences among the groups in this respect, or in the number of incorrect responses given; there is a dearth of knowledge about what visiting nurses do. Almost half of all interviewees were unfamiliar with the functions of a homemaker, often ascribing to them such (erroneous) functions as "giving injections," and "checking vital signs."

There were also major, statistically significant differences among the groups in their understanding of where or how one could obtain information about each service, or where to get the service. Repeatedly, it was the Puerto Rican subgroup which accounted for the greatest proportion of the statistical effect: Puerto Rican interviewees were clearly and consistently at a disadvantage with respect to service information. Approximately one-fifth of all interviewees did not know where to get information regarding nursing services, two-fifths with respect to homemaker services, and one-fifth with respect to nursing home services. There appeared to be comparatively sophisticated discrimination regarding information sources, among many inteviewees. For example, physicians were seen as an information resource by many respondents with respect to in-home nursing care and nursing home care (this was the modal category for nursing homes and the second most popular response for in-home nursing care) but *not* with respect to homemaker services, for which "Departments of Social Services" were the most popular information source. There was a (statistically significant) tendency for black people to make relatively less use of "family and friends" as an information source with respect to community-based services and for Puerto Ricans to make relatively less use of physicians than did interviewees in the other three study groups.

Turning to sources of reimbursement for each of the targeted services, there again were differences among the study groups; significantly more white people

Table 25
Key decisionmakers involved in institutional placement[1,2]

Type of facility	Self	Family	Professional	Other	Don't know
ICF	208	249	195	5	33
(N=520)	(40)	(48)	(37)	(1)	(6)
DCF	298	177	94	6	13
(N=403)	(74)	(44)	(23)	(1)	(4)
Total	506	426	289	11	46
(N=923)	(55)	(46)	(31)	(2)	(9)

[1]This table is taken from the final report of a study of intermediate care facilities and domiciliary care facilities (Holmes, et al., 1981)
[2]Multiple responses were possible, so percentages do not total to 100.

reported use of Medicare for both in-home nursing and nursing home services. Generally speaking, white people were underrepresented in the "don't know" categories, and Puerto Ricans overrepresented in lack of knowledge of reimbursement sources of nursing home care. Across the board, over one-third of all respondents cited "DSS" as a source of reimbursement for nursing home care—a false perception. It would seem that noninformation and misinformation were widespread.

Only slightly more than one-eighth of all respondents correctly identified Medicaid eligibility requirements: three-quarters of all respondents "didn't know," and one-tenth of those who claimed to be familiar with the requirements gave an incorrect response. The Puerto Rican interviewees, as a group, fared best with respect to knowledge of Medicaid, with more respondents potentially eligible, and/or actually enrolled in Medicaid. Black respondents were at the greatest disadvantage, with fewer than 1 out of 12 interviewees correctly identifying income as a Medicaid eligibility requirement. In a similar vein, two-thirds of all respondents reported that they were not familiar with Medicare requirements. Two-fifths of those claiming familiarity actually cited incorrect requirements. In this instance, as contrasted with Medicaid requirements, Puerto Rican respondents were at a greater disadvantage, and white respondents were over-represented among those who were (correctly) aware of Medicare requirements.

Puerto Rican respondents viewed formal service intervention consistently in a negative light. This subgroup saw the family as responsible for the provision of services which (accurately or inaccurately) were perceived as lying within the province of in-home nursing or nursing home care.

Whereas white respondents were more apt to downplay issues of ethnic sensitivity, or the importance of achieving an ethnic match between provider and recipient, many minority group interviewees reported the insensitivity of care providers to the special needs of people in minority groups.

Given the under-representation of minority group members in nursing facilities, it is interesting to note that white respondents held significantly more positive attitudes than did any of the three other study groups—and that Puerto Rican interviewees held the least positive attitudes of all—slightly on the negative side of the attitude continuum.

Multivariate analysis, particularly multiple regression analysis, showed a significant but modest relationship between attitude and information and actual service use. For example, "Knowledge of Community-based Services" explained only about 16 percent of the variance in service use, across the board. Generally speaking, attitude scale scores contributed even less in the regression analysis. Subsequent path analyses suggested that impairment in activities of daily living (ADL) was the most important causal determinant of service use. However, activity limitation did not account for a substantial proportion of variance in "use" scores, probably a function of low base rates as discussed earlier.

While the relationship of attitude, information, and ADL with service use was similar across groups, the relative magnitudes of relationships did differ among the study groups, as did the absolute amount of knowledge about resources. To the extent that it is desirable for actual and potential consumers of health-related services to be aware of existing services, to understand their functions, to know where to go to obtain these services, and to know how service provision can be reimbursed, there is a clear need for focused education programs. To the extent that it is desirable to reach and inform persons in all groups—minority as well as majority—as to the existence, characteristics, and availability of specific services, it is necessary to implement differential educational/informational strategies, taking into account the values and needs of each population subgroup.

This study does not suggest that knowledge of services is a panacea or that the family be supplanted by formal service providers; the family is and will remain a major source of support to the impaired. Rather, it suggests that educational programs may help to shore up the family by providing knowledge about formal services which may help families in the caregiving role, and thus induce them to continue to provide the necessary care. The need for information/education programs is acute: if appropriate consumption is at all a function of consumer knowledge, then at least some current misuse of resources may be attributed to the fact that a majority of people are simply unaware of services.

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