

# Access to Paid In-Home Assistance among Disabled Elderly People: Do Latinos Differ from Non-Latino Whites?

## ABSTRACT

**Objectives.** The purpose of this study was to compare the national prevalences and predictors of paid in-home functional assistance among disabled Latino and non-Latino elderly people who receive such assistance.

**Methods.** Data were derived from the 1988 wave of the National Center for Health Statistics Longitudinal Study on Aging and the 1988 Commonwealth Fund Commission Survey of Elderly Hispanics. Logistic regression was used to model paid care use and to calculate estimated probabilities of such use.

**Results.** Among Latino and non-Latino Whites 74 years of age and older who received functional assistance, similar proportions used paid assistance. Predictors of paid care coincided with established models for non-Latino Whites only. Disabled Latinos had a lower estimated probability of using paid assistance when they were highly disabled and socially isolated but had a higher estimated probability when their children lived nearby.

**Conclusions.** The effects of disability and social support differ among non-Latino White and Latino elderly people. Latino elderly people with high anticipated needs obtain less paid assistance than similar non-Latino Whites. In addition to a reduction in financial barriers, improving access to long-term care services requires addressing this diversity in service use patterns. (*Am J Public Health.* 1995;85:970-975)

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## Introduction

As the number and proportion of elderly Latino individuals continue to rise, it is critical that we understand the influences on their long-term care use so that policies can appropriately address the needs of the entire aging population. This article analyzes the use of paid vs only unpaid functional help of non-Latino Whites and Latinos 74 years of age and older. We examine the unadjusted prevalence of service use and determine the extent to which functional need and other variables predict use in these two populations. We then compute the estimated probability of using paid assistance based on need, demographics, economics, and family availability factors.

## Determinants of Using Long-Term Care

Long-term care services such as formal (paid) services and informal (unpaid) assistance exist to compensate for lost (or never existing) functional capacity.<sup>1</sup> Functional need has repeatedly been shown to predict the use of community-based formal long-term care by elderly people in general<sup>2-6</sup> and by elderly Latinos in particular.<sup>7</sup> Elderly Latinos have disability rates equal to<sup>8</sup> or higher than<sup>9,10</sup> those of elderly non-Latino Whites; thus, their need for long-term care is at least equal to that of non-Latino Whites. Other factors that may indicate a need for long-term care include the use of other health services (hospitals and physicians) and advanced age (as a proxy for frailty and having multiple chronic conditions).<sup>6,11</sup>

Factors other than health problems also influence the use of formal long-term care services. Low income limits the use of formal long-term care services because of their high cost; publicly financed pro-

grams diminish that barrier.<sup>6,12-14</sup> Limited knowledge reduces use,<sup>15</sup> although education might increase use by raising awareness of service availability as well as providing skills to negotiate in bureaucracies. Hospitalization may increase formal long-term care service use by functioning as a referral source, in addition to indicating need and financial access (via Medicare posthospital home care).

Family members can provide assistance in lieu of, or in addition to, formal care.<sup>2,6,12,16,17</sup> According to the principle of substitution<sup>18</sup> and the hierarchical substitution model,<sup>19</sup> elderly people turn first to a spouse for assistance with functional needs, then to children, and, finally, other family and friends. These theories predict that elderly people will seek formal help only when informal assistance is insufficient. Policymakers assume such substitution models when they raise concerns that publicly funded in-home services might displace existing unpaid family care.<sup>20</sup>

Policies for elderly Latinos must address the factors that influence their use of formal long-term care services. This article presents a comparative analysis of the predictors of paid vs only unpaid care use for elderly Latinos and non-Latino Whites receiving functional assistance.

## Methods

We used data from two surveys to compare the use of paid and unpaid

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functional assistance by elderly people (an extended methodological appendix is available from first author on request). The Longitudinal Study on Aging, conducted by the National Center for Health Statistics (NCHS), provides data for community-dwelling non-Latino Whites. In the 1988 wave of this multiwave study, 4755 noninstitutionalized persons who were 70 years of age or older at the time of the first (1984) wave were reinterviewed. These interviews, conducted primarily by telephone, included 4240 noninstitutionalized non-Latino Whites, 1585 of whom received functional assistance. An assessment based on demographic and socioeconomic characteristics indicated that the 13% of the sample lost to follow-up between 1984 and 1988 occurred nonrandomly. To adjust for attrition, we reweighted the 1988 Longitudinal Study on Aging sample according to the age and sex distributions used in the 1988 NCHS Health Interview Survey.<sup>21</sup>

Data for Latinos were obtained from the 1988 Commonwealth Fund Survey of Elderly Hispanics. The larger number of Latinos available in this data set (1005), in comparison with the 1988 Longitudinal Study on Aging (145), enabled us to estimate a regression model containing all of the predictor variables of interest while maintaining a reasonable number of observations for each covariate pattern. In the Survey of Elderly Hispanics, a nationally representative sample of 2299 noninstitutionalized older Latinos was interviewed by telephone with questions that followed the wording used in the Longitudinal Study on Aging. While respondents represented a heterogeneous mix of Mexican Americans, Chicanos, Hispanos, Puerto Ricans, Cubans, and other Latinos (of any race), we did not distinguish between these subgroups since we found no effect of ancestry on the dependent variable in our preliminary analyses. Of the 1005 respondents who were 70 years old or older in 1984, 326 were receiving functional assistance in 1988. Data were weighted according to 1988 estimates of the Latino population by Latino subgroup, sex, marital status, age, and living arrangements.<sup>10</sup>

We estimated separate logistic regression models for non-Latino Whites and Latinos. The non-Latino White logistic regression model was estimated with SUDAAN, which incorporated information about the complex sampling design used in the 1988 Longitudinal Study on Aging.<sup>22</sup> Normalized weights were used in the Latino model since the Survey of

Elderly Hispanics did not use a complex sampling design. On the basis of the parameter estimates of the predictor variables and selected covariate patterns, we calculated the probability of using paid services vs all unpaid assistance.

All of the elderly individuals in our samples received functional assistance (i.e., help with activities of daily living and/or instrumental activities of daily living). Our dependent variable was whether or not any of that functional assistance was paid (an indicator of access to formal care). We did not have data on the intensity of that care. The seven-item activities of daily living scale addressed difficulties in bathing, dressing, transferring, eating, getting outside, walking, and using the toilet. The six-item instrumental activities of daily living scale addressed difficulties in managing money, shopping, using the telephone, preparing meals, performing light housework, and performing heavy housework. The two scales<sup>23,24</sup> had high levels of reliability in both samples. For non-Latino Whites and Latinos, the activities of daily living scale had Cronbach alpha<sup>25</sup> coefficients of .76 and .83, respectively; the corresponding coefficients for the instrumental activities of daily living scale were .66 and .76.

We coded most other predictor variables dichotomously. Living arrangements were coded to reflect with whom the elderly people lived and whether they lived near their children. We assumed that a spouse would be the first to provide informal support, followed by children and, finally, other family and friends (as predicted by the hierarchical substitution model). This produced the following hierarchy of family living arrangements: (1) living with spouse (regardless of others in household), (2) living with children (no spouse in household, but possibly others), (3) living with others (no spouse or children in household), and (4) living alone. We constructed two variables for each living arrangement, one for children living within 30 minutes and one for no children within 30 minutes. Neither survey asked about the distance of children if the elderly person was living with an adult child, so we used those living with children (but without a spouse) as the reference group. We did not code for children nearby for those living with others (without spouse or children) because of the small number in that category. In total, six dummy variables characterized all living arrangements.

Two variables merit attention for methodological reasons. First, the ques-

tion involving Medicaid coverage was asked differently in the two surveys. In the Survey of Elderly Hispanics, respondents were asked whether they currently had Medicaid coverage; in the 1988 Longitudinal Study on Aging, respondents were asked whether they had services paid in the past year by Medicaid. In the 1984 Longitudinal Study on Aging, in which both questions were asked, 88% of those receiving functional assistance reported both past-year Medicaid use and a current Medicaid card. Since our dependent variable involved current functional help, we expected the Longitudinal Study on Aging variable to be slightly less efficient than the Survey of Elderly Hispanics variable in terms of measuring the effect of Medicaid. Second, 26% of Survey of Elderly Hispanics respondents and 13% of Longitudinal Study on Aging respondents failed to report their income. Preliminary tests indicated that respondents with missing data for income did not have patterns of paid assistance different from those of respondents with valid data. We dichotomized income as low vs high and used the mean proportion of low-income persons in each sample in instances of missing income values.

## Results

### Sample Characteristics

Our sample included the 31.1% ( $n = 326$ ) of Latinos and 37.2% of non-Latino Whites ( $n = 1585$ ) 74 years of age or older who were receiving functional assistance. Our models distinguished between those who received paid functional assistance and those who received only unpaid assistance. Latinos receiving functional assistance had significantly higher levels of impairment in both activities of daily living and instrumental activities of daily living than non-Latino Whites (Table 1). Latinos were also significantly more likely to have had a hospitalization in the previous year.

There were other major differences between Latinos and non-Latino Whites who received functional assistance. For example, Latinos had substantially lower educational levels, more of them were on Medicaid and had low incomes, and fewer of them lived with a spouse. Also, they were more likely to live with children and "other family" (Table 1). These socioeconomic differences reflected differences in the characteristics of the respective general populations, Latinos having fewer socioeconomic resources but higher levels

**TABLE 1—Characteristics of Elderly Non-Latino Whites and Latinos over Age 73 Who Received Paid or Unpaid Functional Assistance: Weighted Distributions**

	Non-Latino Whites (n = 1585), %	Latinos (n = 326), %
<b>Need indicators</b>		
No. of impairments in activities of daily living		
0–1	49.8	42.6 <sup>a</sup>
2–3	26.6	25.1
4–7	23.6	32.3
No. of impairments in instrumental activities of daily living		
0–1	42.3	29.4 <sup>d</sup>
2–3	30.5	32.5
4–6	27.2	38.1
Hospitalization in past year	31.2	36.9**
12 or more doctor visits in past year	23.4	26.2
<b>Demographic variables</b>		
Male	30.7	35.4
Advanced age (79+ years)	62.0	66.8
High school education or greater	42.4	16.0****
<b>Economic resources</b>		
Medicare	98.4	85.4****
Medicaid	13.2	55.1****
Family income less than \$15 000 per year	61.6	87.8****
<b>Potential social support</b>		
Live with spouse but not near children	16.8	11.0***
Live with spouse and near children	20.3	14.5*
Live with children but not spouse	17.9	24.2***
Live with others but not spouse or children	7.3	14.7****
Live alone and not near children	15.8	19.8*
Live alone and near children	22.6	16.2**
Receive paid assistance	39.6	38.1

Note. Samples were weighted to the 1988 population estimates for each group.

<sup>a</sup> $\chi^2 = 10.69$ ,  $df = 2$ ,  $P < .01$ .

<sup>b</sup> $\chi^2 = 22.40$ ,  $df = 2$ ,  $P < .0001$ .

\* $P < .05$ ; \*\* $P < .01$ ; \*\*\* $P < .001$ ; \*\*\*\* $P < .0001$ .

of coresidence with family other than a spouse.<sup>26</sup>

### Use of Paid vs Only Unpaid Services

At a simple descriptive level, frail elderly Latinos who received functional assistance were about as likely as non-Latino Whites to have some of that help paid (38.1% vs 39.6%). This unadjusted prevalence, however, failed to reflect the different functional needs of the two populations, as well as the influences of family availability and economic resources. We therefore modeled separate logistic regression equations to determine whether there were differences in paid service use after needs and resources had been controlled. The models were constructed by entering variables in blocks

(need indicators, demographics, economic resources, social support). Variables were considered for inclusion in the models on the basis of both their theoretical/substantive importance and the likelihood ratio chi-square test for comparing the relative fit of nested models.

Table 2 shows the odds ratios and confidence intervals for the use of paid functional assistance among those receiving any assistance. The goodness of fit statistics and summary diagnostics shown at the bottom of Table 2 indicate that the models fit the data.<sup>27</sup> The logistic equation correctly assigned 75.8% of the actual users and nonusers of paid care among non-Latino Whites and 56.9% of the users and nonusers of such care among Latinos. For non-Latino Whites, the pattern of

predictors for paid help was as we expected; higher need, being female, higher education, financial resources, and lack of available informal support all predicted paid service use.

Previous studies have found that need indicators are predictors of paid service use; in our models, however, only impairments in instrumental activities of daily living increased the odds of using paid care for both Latinos and non-Latino Whites (Table 2). Impairments in activities of daily living increased the odds of paid care among non-Latino Whites, as expected, but decreased the odds of such care among Latinos ( $P < .10$ ).

Demographic variables were significant only for elderly non-Latino Whites (Table 2). The odds of using paid assistance were lower among men than among women and were higher among high school graduates than among those with less education.

The pattern for economic resources also followed our expectations for non-Latino Whites only, with low income reducing the odds of receiving paid assistance (Table 2). In preliminary analyses, we used poverty-level income rather than low income for Latinos (a variable not available for non-Latinos) and found that poverty significantly reduced the use of paid assistance among Latinos.

Social support variables emerged as influential in both groups (Table 2). Latinos and non-Latino Whites living with a spouse (with children nearby) had significantly higher odds of using paid services in comparison with those living with children but without a spouse (the comparison group). Living alone with children nearby was also significant for both groups. The patterns of effects within each group were very different, however.

Non-Latino Whites generally followed the predicted pattern: lower potential social support increased the odds of using paid assistance vs only unpaid assistance. Non-Latino Whites living alone and without children nearby had the highest odds of using paid assistance. The effects of potential social support differed for elderly Latinos. For those living alone and for those living with a spouse, having children nearby raised the odds of using paid functional assistance in comparison with those without children nearby, even though children would be expected to be a source of informal help. The second highest odds ratio for use of paid help among Latinos, after other variables in the model had been controlled, occurred

among those living with a spouse and near children, a group that was among the least likely users for non-Latino Whites. They would also be among the least likely users of paid care according to hierarchical substitution models.

To confirm that the effects of activities of daily living and family variables varied by ethnicity, we combined the two samples and estimated a regression model (data not shown) containing interaction terms between ethnicity and activities of daily living, living with spouse (not near children), and living alone (near children). All interaction terms were significant ( $P < .01$ ), indicating that the effect on paid care use of impairments in activities of daily living and living alone (near children) was less for Latinos than for non-Latino Whites; the effect was larger for living with spouse (near children).

### Comparing Estimated Probabilities of Paid Assistance between Populations

We used our logistic regression equations to calculate the estimated probability that an individual with specific characteristics would use paid assistance vs only informal assistance<sup>28</sup> (Table 3). Example 1 involves an elderly woman expected to have a high need for paid assistance: impairments in four or more activities of daily living, four or more instrumental activities of daily living, past-year hospital visit, low education, female, social isolation (living alone with no children nearby), and low income but Medicaid coverage. The non-Latino White logistic model produced the expected high estimated probability (86.9%) of using paid services. In contrast, the Latino model produced an estimated probability of 34.1%, meaning that she would be more likely to receive only informal help. These predicted probabilities were significantly different at the  $P < .05$  level.

The situation differed for a less disabled woman (impairment in only one activity of daily living and/or instrumental activity of daily living) living with a spouse but not near children (Example 2). In this case, the woman had a higher estimated probability of receiving paid help if she was Latina (27.5%) rather than non-Latina (15.6%) (the difference was not statistically significant,  $P > .05$ ). Similarly, the estimated probabilities were not statistically significant for an elderly man (Example 3) who was impaired in two to three each of activities of daily living and instrumental activities of daily living, who had a past-year hospital visit, lived with a

	Non-Latino Whites (n = 1379)		Latinos (n = 326)	
	Odds Ratio	95% Confidence Interval <sup>a</sup>	Odds Ratio	95% Confidence Interval
<b>Need indicators</b>				
Impairments in activities of daily living	1.26**	1.06, 1.51	0.72†	0.49, 1.04
Impairments in instrumental activities of daily living	1.36***	1.14, 1.63	1.53*	1.03, 2.29
Hospitalization in past year	1.40**	1.06, 1.84	0.76	0.45, 1.28
<b>Demographic variables</b>				
Male	0.43****	0.32, 0.57	0.86	0.49, 1.49
High school graduate or greater	1.75****	1.32, 2.31	1.50	0.75, 2.98
<b>Economic resources</b>				
Medicaid	1.42†	0.96, 2.09	1.24	0.40, 4.24
Income (low)	0.53****	0.40, 0.71	1.14	0.71, 2.16
<b>Potential social support</b>				
Live with spouse but not near children	2.40***	1.46, 3.93	1.41	0.54, 3.70
Live with spouse and near children	2.42****	1.54, 3.81	3.37**	1.43, 7.93
Live with children but not spouse	Reference	...	Reference	...
Live with others but not spouse or children	4.36****	2.56, 7.44	1.88	0.80, 4.42
Live alone and not near children	14.54****	9.02, 23.44	1.70	0.75, 3.84
Live alone and near children	5.57****	3.66, 8.50	3.52**	1.52, 8.12
Intercept	0.145	$P \leq .000$	0.24	$P \leq .01$
$\chi^2$ (df = 12)	313.47	$P \leq .000$	20.93	$P = .051$
-2 log likelihood	1622.00	...	382.33	...
Deviance	1623.00	df = 1366	381.66	df = 313
Pearson $\chi^2$	1430.36	...	305.64	...
Concordant (correctly predicted outcomes), %	75.8	...	56.9	...

<sup>a</sup>Adjusted for design effects by SUDAAN.

† $P < .1$ ; \* $P < .05$ ; \*\* $P < .01$ ; \*\*\* $P < .001$ ; \*\*\*\* $P < .0001$ .

spouse (not near children), and had limited income and Medicaid coverage. When we entered the mean characteristics of Latinos into the Latino equation, the estimated probability of use for the average Latino (37%) was not statistically different from the observed prevalence (38.1%). When we entered these average Latino characteristics into the non-Latino White equation, the estimated probability of use was comparable to that of the Latino sample. Thus, while our models predicted similar overall levels of use of paid assistance for elderly Latinos and non-Latino Whites receiving functional assistance, the pattern of covariate effects in the models also suggested that certain elderly Latinos are likely to be at a

disadvantage in comparison with non-Latino Whites.

### Discussion

As more medical care moves out of the hospital and nursing homes become less available, elderly people who need functional assistance will increasingly need paid in-home assistance. Since our models of community long-term care use are supported primarily by the experience of non-Latino Whites, it is important to identify any divergences from these models for policy and service delivery development. Our analysis showed that, after need, demographic, economic, and family availability factors had been controlled,

**TABLE 3—Estimated Probabilities of Using Paid vs Unpaid Functional Assistance**

Example	Non-Latino Whites		Latinos	
	Probability	95% Confidence Interval	Probability	95% Confidence Interval
1	.87	.80, .92	.34	.19, .53
2	.16	.11, .22	.27	.13, .49
3	.21	.14, .31	.25	.11, .47

Note. All examples use values for low income and not high school graduate. Example one is for women with the highest functional need, hospitalization, Medicaid, living alone not near children. Example two is for women with the lowest need, no Medicaid, living with spouse not near children. Example three is for men with moderate functional need, hospitalization, Medicaid, living with spouse near children.

the predictors of receiving paid care rather than only unpaid care among elderly people 74 years of age and older are different for Latinos and non-Latino Whites, despite similar prevalences of use in these two populations.

Elderly non-Latino Whites who receive functional assistance follow existing theories of paid care, and our equation worked well in predicting paid vs only unpaid functional assistance. Higher need, being female, having a high school degree, Medicaid use, higher income, and decreasing family availability all increased the odds that some of their functional assistance would be paid. When the same model was used with Latinos, however, a different pattern of predictors emerged.

We expected need to be a predictor of paid service use because increasing functional disability and more severe illnesses make it more difficult for informal help alone to suffice. Only difficulties in instrumental activities of daily living worked in this way for both Latinos and non-Latino Whites. This is troubling since all policy proposals for expanding publicly financed personal care (i.e., paid functional assistance) use increased levels of impairment in activities of daily living as a primary indicator of need,<sup>29</sup> which suggests that expanded public programs using such impairments for eligibility will fail to reach many of the most disabled elderly Latinos.

Gender influenced the odds ratio for non-Latino Whites, possibly because wives are more likely than husbands to provide several types of functional assistance for their spouses. The nonsignificant gender effect for Latinos was surprising given the literature on gender roles in Latino families.<sup>30</sup> Gender may be less salient for Latinos as a result of a broader helping network that extends beyond the spouse.<sup>31</sup>

Education increased the odds of paid care for non-Latino Whites, possibly through its effect on economic resources, knowledge of services, and ability to negotiate with bureaucratic organizations. The very low educational level of most of the elderly Latinos in our sample probably weakened the predictive ability of this dichotomous variable.

We expected Medicaid to increase paid service use because it is the primary source of public long-term care funding, even though many poor individuals are not covered.<sup>32</sup> The lack of significance for Medicaid among Latinos may have been the result of underdeveloped Medicaid personal care programs in some states and/or a high frequency of private pay that weakened the relationship of Medicaid to paid care use. Low income is an independent barrier to paid help since programs that provide paid functional assistance to low-income elderly people (e.g., the Social Service Block Grant and the Older Americans Act) receive insufficient funding. Low income was probably not significant for Latinos because there was little variability in income, but preliminary analyses using poverty/nonpoverty coding revealed significant results in the predicted direction.

Family availability has long been recognized as an important moderator of both service need and access. Decreased availability of social support increased the use of paid services for non-Latino whites, consistent with the theory of hierarchical substitution. The higher use of paid help when living with a spouse vs a child departed from the pattern. The advanced age of this sample increased the spouse's chance of also having functional impairments and probably limited his or her ability to provide sufficient informal support alone.<sup>33</sup> It is important to note that

other research has shown that paid care supplements rather than replaces previous informal care.<sup>34</sup>

The social support patterns for Latinos differed from the expected pattern. Paid service use was predicted only by living arrangements that involved living near children. Sussman<sup>35</sup> noted that family members are often mediators between elderly people and formal organizations. Elderly Latinos' children may act as service brokers, arranging and perhaps paying for functional assistance. Latinos' children may be particularly important because of their English-language abilities, better knowledge of possible services, and higher incomes.<sup>36</sup> English fluency, better education, and higher incomes of non-Latino Whites could make brokering services of their children less important than direct help from children. In addition, older Latinos more often share households with their children, leaving fewer nonresidential children able to substitute for paid assistance. The high rates of coresidence with children of functionally impaired elderly Latinos indicate a substantial provision of direct care by their children. It may be that Latino families help locate and pay for low-intensity paid assistance involving instrumental activities of daily living. But when expensive personal care needs develop (those involving activities of daily living), limited Latino family resources may make it necessary to shift to solely informal care. This is consistent with our finding that increasing impairments in activities of daily living do not significantly predict the use of paid care. Longitudinal data and information on the resources of family systems are needed to test this hypothesis.

The parameter estimates for Latinos and non-Latinos provided different probabilities of paid help under identical circumstances. The most disabled and isolated elderly Latinas had a lower estimated probability of using paid care than similar non-Latino Whites. Since an attempt is made to target formal services to those with the highest level of disability and the least family support, this group of elderly Latinos is comparatively underserved. Elderly Latinas with fewer functional needs and greater family resources had probabilities of using paid vs only unpaid help similar to those of non-Latino Whites.

The unexpected pattern of predictors in the Latino model suggests that other unmeasured factors may influence the use of paid care. Analyses not presented here indicated that ethnic-specific

factors (e.g., acculturation, ancestry) would not substantially change the parameter estimates. Other analyses of Latinos have shown that predictors based on the hierarchical substitution model conform to the expected pattern in estimates of the use of three formal services (i.e., services provided by nurse's aides, home health aides, and homemakers) but shift away from this pattern in estimates of any paid functional assistance (help with activities of daily living and instrumental activities of daily living).<sup>7</sup> Thus, the model of substitution works among Latinos who use those three formal in-home services but fails to adequately explain all paid functional care. One explanation may be that Latinos are more likely to use private pay services for low-intensity help with instrumental activities of daily living, perhaps from friends and neighbors, while relying more on informal care for moderate to high needs with activities of daily living.

The similar unadjusted prevalence of paid care use for elderly Latinos and non-Latino Whites suggests that Latinos do not have a cultural aversion to paid functional assistance. Yet, the patterns of paid care show that the most needy and isolated Latinos receive much less formal help than comparable non-Latino Whites. As we devise health policies to improve access to long-term care for elderly people, we need to take into account this diversity in the patterns of service use. Our analysis suggests that proposals to expand personal care by reducing financial barriers and using impairments in activities of daily living as a need indicator will not have the same effect on Latinos and non-Latino White elderly people receiving functional assistance. Researchers and those involved in policy development need to identify and address the possible nonfinancial barriers and facilitators to the use of services by the most disabled and socially isolated elderly Latinos. □

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## References

- Kane RA, Kane RL. *Long-Term Care: Principles, Programs, and Policies*. New York, NY: Springer; 1987.
- Branch LG, Wetle TT, Scherr PA, et al. A prospective study of incident comprehensive medical home care use among the elderly. *Am J Public Health*. 1988;78:255-259.
- Edleman P, Hughes S. The impact of community care on provision of informal care to homebound elderly persons. *J Gerontol*. 1990;45:S74-S84.
- McAuley WJ, Arling G. The use of in-home care by very old people. *J Health Soc Behav*. 1984;25:54-64.
- Wolinsky FD, Johnson RJ. The use of health services by older adults. *J Gerontol*. 1991;46:S345-S357.
- Kemper P. The use of formal and informal home care by the disabled elderly. *Health Serv Res*. 1992;27:421-451.
- Wallace SP, Campbell KM, Lew-Ting CY. Structural barriers to the use of in-home health services by elderly Latinos. *J Gerontol*. 1994;49:S253-S263.
- Hing E, Bloom B. Long-term care for the functionally dependent elderly. *Vital Health Stat [13]*. 1990;104. DHHS publication PHS 90-1765.
- Treviño FM, Moss AJ. Health indicators for Hispanic, Black, and White Americans. *Vital Health Stat [10]*. 1984;148. DHHS publication PHS 84-1576.
- A Survey of Elderly Hispanics, Final Report*. Rockville, Md: Westat Inc; 1989.
- Hanley RJ, Alecxih LM, Wiener JM, Kennell DL. Predicting elderly nursing home admissions. *Res Aging*. 1990;12:199-227.
- Stoller EP, Cutler SJ. Predictors of use of paid help among older people living in the community. *Gerontologist*. 1993;33:31-40.
- Wallace SP, Lew-Ting CY. Getting by at home: community based long-term care of Latino elderly. *West J Med*. 1992;157:337-344.
- Long Term Care and Personal Impoverishment: Seven in Ten Elderly Living Alone Are at Risk*. Washington, DC: US House of Representatives, Select Committee on Aging; 1987.
- Yeatts DE, Crow T, Folts E. Service use among low-income minority elderly: strategies for overcoming barriers. *Gerontologist*. 1992;32:24-32.
- Tennstedt SL, Crawford S, McKinlay JB. Determining the pattern of community care: is coresidence more important than caregiving relationship? *J Gerontol*. 1993;48: S74-S83.
- Jones EW, Densen PM, Brown SD. Posthospital needs of elderly people at home: findings from an eight-month follow-up study. *Health Serv Res*. 1989;24:643-664.
- Shanas E. The family as a social support system in old age. *Gerontologist*. 1979;19: 169-174.
- Cantor MH. Strain among caregivers: a study of experience in the U.S. *Gerontologist*. 1983;23:597-624.
- Tennstedt SL, Crawford SL, McKinlay JB. Is family care on the decline? A longitudinal investigation of the substitution of formal long-term care services for informal care. *Milbank Q*. 1993;71:601-624.
- National Health Interview Survey, 1988*. Hyattsville, Md: National Center for Health Statistics; 1989.
- Kovar MG, Fitti JE, Chyba MM. The Longitudinal Study of Aging: 1984-90. *Vital Health Stat [1]*. 1992; no. 28. DHHS publication PHS 92-1304.
- Katz S, Ford AB, Moskowitz RW, Jackson BA, Jaffe MW. Studies of illness in the aged: The index of ADL. A standardized measure of biological function. *JAMA*. 1963;185:914-919.
- Lawton MP, Brody EM. Assessment of older people: self-maintaining and instrumental activities of daily living. *Gerontologist*. 1969;9:179-186.
- Cronbach LJ. Coefficient alpha and the internal structure of tests. *Psychometrika*. 1951;16:297-334.
- Rawlings S. *Household and Family Characteristics: March 1990 and 1989*. Washington, DC: US Bureau of the Census; 1990. Current Population Reports, Series P-20, No. 447.
- Hosmer DW, Taber S, Lemeshow S. The importance of assessing the fit of logistic regression models: a case study. *Am J Public Health*. 1991;81:1630-1635.
- Weissert WG, Cready CM. Toward a model for improved targeting of aged at risk of institutionalization. *Health Serv Res*. 1989;24:485-510.
- Spector WD, Kemper P. Disability and cognitive impairment criteria: targeting those who need the most home care. *Gerontologist*. 1994;34:640-651.
- Bastida E. Age- and gender-linked norms among older Hispanic women. In: Applewhite SR, ed. *Hispanic Elderly in Transition*. New York, NY: Greenwood Press; 1988.
- Wallace SP, Facio LE. Moving beyond familism: potential contributions of gerontological theory to studies of Chicano/Latino aging. *J Aging Stud*. 1987;1:333-354.
- Lefkowitz D, Monheit A. *Health Insurance, Use of Health Services, and Health Care Expenditures*. Rockville, Md: Public Health Service; 1991.
- Soldo BJ. In-home services for the dependent elderly: determinants of current uses and the implications for future demand. *Res Aging*. 1985;7:281-304.
- Hanley RJ, Wiener JM, Harris KM. Will paid home care erode informal support? *J Health Policy Polit Law*. 1991;16:507-521.
- Sussman MB. The family life of old people. In: Binstock RH, Shanas E, eds. *Handbook of Aging and the Social Sciences*. 2nd ed. New York, NY: Van Nostrand Reinhold, 1985.
- Keefe SE, Padilla AM. *Chicano Ethnicity*. Albuquerque, NM: University of New Mexico Press; 1987.