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Home and community-based service and other senior service use: Prevalence and characteristics in a national sample

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Abstract

We report on the use of home- and community-based services and other senior services and factors affecting utilization of both among Americans over age 60 in the Health and Retirement Study. Those using home- and community-based services were more likely than to be older, single, Black, lower income, receiving Medicaid, and in worse health. Past use of less traditional senior services, such as exercise classes and help with tax preparation, were found to be associated with current use of home- and community-based services. These findings suggest use of less traditional senior services may serve as a ‘gateway’ to home- and community-based services that can help keep older adults living in the community.

Keywords

home- and community-based services; Health and Retirement Study; national data; senior services

Home- and community-based services (HCBS) are intended to help adults remain safely in their homes and communities rather than enter long-term care facilities. Between 2002 and 2012, the number of Medicaid HCBS participants increased from 2.3 to 3.2 million (Ng, Harrington, Museumeci, & Reaves, 2015). The growing demand for HCBS stems in part from the increasing size of the older population, the desire to ‘age in place,’ and increased federal pressure on states, most recently from the Affordable Care Act of 2010, to provide HCBS options that may help reduce spending on nursing homes. Between 2002 and 2012, Medicaid HCBS expenditures for state plan home health services, state plan personal care services, and §1915(c) waivers increased from \$25.1 billion to \$55 billion (Ng et al., 2015).

As costs rise, so do concerns about the cost effectiveness of these programs. Until recently, research was mixed as to whether HCBS led to cost savings. For example, a 2006 meta-analysis found increased costs or flat costs, depending on the type of studies reviewed (Grabowski, 2006). An earlier study found increased use of HCBS led to higher initial costs because not only did the number of people receiving services increase, so did the amount of services they received (Weissert, Cready, & Pawelak, 1988). Increasingly, though, research

is finding some instances of long-term savings to states associated with HCBS (Harrington, Ng, & Litchener, 2011; Harrington, Ng, LaPlante, & Kaye, 2012; Kaye, 2012; Thomas & Mor, 2013). One comprehensive report found that increased state-level expenditure on HCBS led to lower rates of nursing home use from 2000 to 2007 for many, but not all, states (Miller, 2011). The report suggests that there remains a compelling need for a better understanding of factors affecting the use of HCBS.

Much of what we currently know about recipients of HCBS comes from administrative data. HCBS are often delivered through senior centers, area agencies on aging, or local government agencies and include programs and services such as home-delivered meals, personal care, and transportation assistance. These programs and services are generally targeted to vulnerable older adults. Indeed, research using administrative data has shown that those receiving services under Title III of the Older American Act (OAA) are older, less healthy, and have more functional limitations compared to the older United States (U.S.) population overall (Altschuler & Schimmel, 2011). Data from the U.S. Administration on Aging showed that 30 percent of those who received HCBS on a regular or intensive basis had income below the federal poverty level, compared with 9.7 percent of the non-institutionalized population over age 59 (Administration on Aging, 2016a). Other studies examining HCBS use community- or state-level databases and generally support the finding that these services do appear to reach more vulnerable people (Fortinsky, Fenster, & Judge, 2004; Mitchell, Salmon, Polivka, & Soberon-Ferrer, 2006).

The aggregate nature of these data sources, however, means that they cannot be analyzed at the individual level in order to isolate the independent effects of different characteristics on the probability of being a service user in direct comparison to those not using services. Moreover, organizations serving seniors offer many other services that are not considered HCBS for the purpose of funding by public programs but may nonetheless enhance seniors' quality of life and ability to live independently. Examples of these services include exercise classes, help managing Medicare benefits, and help with tax preparation. Very little is known about these other senior services and how they may be related to seniors' use of HCBS.

The Health and Retirement Study (HRS) is the first survey to assess HCBS utilization in a nationally representative sample of older adults living in the U.S. HRS asks about several types of HCBS as well as information on a range of other senior services. Importantly, it provides a comparison group of those who have never used and/or are not currently using services. We use these data to begin to fill in gaps in understanding about HCBS use in the broader context of utilization of senior services. In this study, we define HCBS as those services included under Title III of the OAA regardless of the funding agency. Other (non-HCBS) senior services include those that are offered by the senior services agency or community organization but are not included under Title III of the OAA. Andersen's Behavioral Model has been widely used to facilitate understanding of health service utilization (Andersen, 2008). The model suggests that service utilization is a function of 1) predisposition to use services, 2) factors that enable (or impede) use of services, and 3) perceived need for services. The predisposition to use services is based on characteristics of individuals that might lead some to use services more than others. While characteristics may depend on the particular services and populations under study, a review found predisposing

factors most often included age, marital status, gender, education, and ethnicity. Enabling factors most often were income/financial situation, health insurance, and having a primary care doctor. Perceived need for services encompasses conditions that potentially motivate individuals to seek services, most typically indicators of health status (Babitsch, Gohl, & von Lengerke, 2012).

Given this guiding framework and prior research, we hypothesized that older age, female gender, lower education, Black race, single marital status, and Hispanic ethnicity would predispose individuals to use HCBS. In this study, we also conceived of lower wealth, income, and education, and not working as predisposing to HCBS use. We hypothesized that receipt of Medicaid and presence of a helper would serve as enabling factors. Perceived need for services included poor health status, functional limitations, and cognitive impairment. We also hypothesized the use of other, less traditional senior services (non-HCBS) would serve as both predisposing and enabling factors in the use of HCBS. That is, given that many of the services included in the category of other senior services are also offered in the same locations as HCBS, we hypothesized that use of these other services may act as a ‘gateway’ to future use of HCBS.

Data and Methods

HRS is a longitudinal, biennial study of approximately 22,000 individuals aged 51 and older begun in 1992. Sampling involves clustering and stratification as well as oversampling of Hispanics and African Americans. Sample weights are provided to adjust standard errors for the complex sample design. Further details of the study are provided elsewhere (Sonnega et al., 2014). HRS fielded the Health Care Mail Survey (HCMS) in 2011 to a random subsample of over 7,000 HRS respondents asking a variety of health care questions, including use of senior services. The overall response rate for the HCMS was 75 percent. Because the OAA provides HCBS to adults aged 60 and over, analyses excluded respondents aged 59 or younger. Another 112 respondents were excluded because they were living in a nursing home or were missing key data, making the analytic sample 4,948.

Measures

The HCMS asked ‘Many communities have special services available for seniors. Have you ever used any services sponsored by a senior services agency or a community organization intended to assist seniors?’ Those responding ‘no’ were categorized as ‘not using services.’ Those responding ‘yes’ were asked “What kind of services did you use?” followed by a list of 19 services. HCBS included: Meals on Wheels; other food or nutrition services; transportation services; chore services; adult day care/respite care; and supportive services for caregivers. Case management was not assessed. Other senior services on the list included help with taxes; use of the local senior center; exercise classes; help with Medicare or other health insurance; social activities; continuing education or recreation classes; services for individuals with Alzheimer’s or other dementia; help finding caregivers; help finding volunteer opportunities; legal counseling or helpline; financial counseling; and elder abuse counseling or helpline; and ‘other.’ Respondents could check more than one service. They were asked ‘Are you currently receiving any of these services?’ If yes, they were categorized

in this analysis as using ‘Any HCBS.’ If they checked any of the other senior services as ones they currently used, they were categorized in this analysis as ‘Other senior services only.’ Respondents could be categorized as using both HCBS and other senior services.

We analyzed three mutually exclusive categories of respondents: those who reported currently using any HCBS (who may also use other senior services), those who used other senior services only, and those who used no services. We collapsed the categories in this way because individuals who used both HCBS and other senior services had very similar characteristics to those who used HCBS only.

Race and ethnicity was coded as White non-Hispanic, Black non-Hispanic, and other non-Hispanic. There was a separate indicator for Hispanic ethnicity. For descriptive analyses, gender and marital status were combined to create four categories: unmarried female, married female, unmarried male, married male. Unmarried men and women in this sample were mostly widowed with a much smaller fraction divorced or never married. Income and wealth variables for 2010 were drawn from the RAND-HRS (Chien et al., 2015) and inflated to 2011 levels. Income relative to poverty was categorized as: less than 100 percent of the federal poverty line (FPL), 100–199 percent of the FPL, 200–299 percent of the FPL, 300–399 percent of the FPL, and greater than or equal to 400 percent of the FPL. Work status was coded as currently working for pay in 2010 or not. We also included a dichotomous indicator of whether or not the respondent reported receiving Medicaid.

Respondents assessed their overall health on a 5-point scale. Following common practice, a dichotomous indicator of fair or poor health compared to good, very good, or excellent health was used. We used a dichotomous indicator of cognitive impairment based on respondents’ performance on three tasks: serial sevens, word recall, and backwards counting (Crimmins, Kim, Langa, & Weir, 2011). Functional status was assessed with difficulties in activities of daily living (ADLs), including toileting, dressing, grooming, walking across the room, and bathing (coded 0–5); difficulties in instrumental activities of daily living (IADLs), including needing help to use telephone, with food preparation, housekeeping laundry, driving, managing medications, and handling finances (coded 0–6) and Nagi limitations, which included reporting difficulties with walking several blocks; running or jogging a mile; walking a block; sitting for two hours; lifting heavy objects; getting up from a chair after sitting long; climbing several flights of stairs; climbing one flight of stairs; pulling or pushing large objects; stooping, crouching or kneeling; reaching or extending arms over head; picking up a dime from a table (coded 0–12) (Nagi, 1964). Each was coded as continuous for the number of limitations. Presence of a helper for ADLs and IADLs was coded 1 for having a helper with any activity, 0 if no helper.

Statistical Analysis

Descriptive statistics were generated for all study variables, and pair-wise comparisons were conducted between 1) those using any HCBS and those using other senior services only, 2) those using any HCBS and those using no services, and 3) those using other senior services only and those using no services. We also examined the patterning of use within groups by age, sex by marital status, number of ADLs, and income relative to poverty group.

Multivariate logistic regression models were used to isolate the independent effect of each characteristic on the probability of using any HCBS and the probability of using other senior services only, holding other factors constant. For these analyses, we created a dichotomous age indicator for age 75 or older where younger than 75 was the referent category. Gender and marital status were modelled separately with an indicator for single marital status, with married as the referent category and female gender with male as the referent. A dichotomous indicator for non-Hispanic Black was included with non-Hispanic White and Other as the referent. A dichotomous indicator of Hispanic ethnicity was included with non-Hispanic as the referent. Financial status was represented with the five dichotomous indicators of income relative to poverty described previously, where income less than 100 percent of the FPL was the referent. Those who were not working were the referent for work status. Those who were not Medicaid recipients and did not have a helper for ADLs and IADLs were the comparison categories on those indicators. Good to excellent health was the referent for the indicator of self-reported health, and no cognitive impairment was the referent for that indicator. Years of education and numbers of functional limitations were included as continuous variables.

Lastly, we compared those currently using HCBS or other senior services with those who reported ever using these services and adjusted this comparison for demographic and health characteristics used in the previous multivariate analyses. Statistical analyses were performed using Stata version 13. Analyses were weighted using 2010 respondent weights, and standard errors were corrected for the complex sample design using the svy procedure in Stata.

Results

Overall, 2.7 percent of seniors used HCBS but no other services, while another 3.0 percent used HCBS in addition to some other senior services, for a total of 5.7 percent currently using any HCBS. An additional nine percent used other senior services only. The majority of the sample – 85.3 percent – was not currently using services (Table 1). Although this last group could include people who have ever used services, there were very few of them.

The prevalence of service utilization among current service users for each type of service is reported in Figure 1. HCBS appear in gray, and other senior services are in Black. The most popular services were not HCBS. The four most widely-used services were help with filing taxes, which was used by 27.0 percent of current service users, use of the local senior center (25.4 percent), exercise classes (22.5 percent), and help with Medicare or other health insurance (15.8 percent), none of which would be considered HCBS. The most commonly reported HCBS were transportation services and other food or nutrition services (other than Meals on Wheels, which was queried separately), which were each used by approximately 14 percent of current service users; these rank as the fifth and sixth most widely-used services overall. Rounding out the top ten most widely-used services were social activities (reported by 10.8 percent of service users), Meals on Wheels (HCBS, 9.4 percent), continuing education/recreation (other senior services, 8.7 percent) and chore services (HCBS, 6.7 percent). Each of the remaining services was used by less than 5 percent of service users.

Table 1 presents sample characteristics for all study variables with means of continuous variables and percentages for dichotomous variables and all pair-wise comparisons among the three samples. Compared to those using no services, those using HCBS and those using other senior services were more likely to be older, Black, Hispanic single, female, in poorer health with more functional limitations and cognitive impairment, to have a helper, to be a Medicaid recipient, to have lower financial status on every indicator, and to be not working (Table 1). As indicated by the † symbol in Table 1, this same pattern of differences held for the comparison between those using other senior services and no services. It is notable, however, that for a number of characteristics, those using other senior services only are more similar to those using no services than they are to those using HCBS. For example, self-reported poor health was 52.8 percent for those using HCBS and 25.5 and 23.2 for those using other senior services and those not using services, respectively. Similarly, those using other senior services held similar levels of wealth as those using no services. On other indicators, such as mean age, mean income, and the percentage working, those using senior services were in the middle between those using HCBS and those using no services.

We next examined patterns of use (Table 2). Only 3.9 and 5.3 percent of 60 to 64 year-olds used any HCBS and any other senior service, respectively. By age 85 and older 13.9 percent of respondents reported using any HCBS, and 12.6 percent reported using other senior services. Men and people who were married were less likely to use HCBS and other senior services than women and single people. Among single females, 12.5 percent reported using HCBS compared with 3.1 percent of married females. Likewise, 8.0 percent of single males reported currently using HCBS compared with 3.0 percent of married males. The probability of service use increased with increasing numbers of ADLs. The use of HCBS went from 4.1 percent for those with no ADLs to 18.2 percent for those with 5 ADLs; whereas there was no clear pattern between use of other senior service services and ADLs. Similarly, seniors with lower income relative to poverty were much more likely to use HCBS than higher income seniors. But there was no clear pattern of association between income relative to poverty and use of other senior services.

Table 3 shows the results of two multivariate logistic regressions with current use of HCBS as the dependent variable in the first column and current use of other senior services only in the second column. Older age (75 years and older), single marital status, and Medicaid coverage were all significant predictors of both HCBS and other senior service use. Non-Hispanic Black race, poor health and Nagi limitations significantly increased the odds of using HCBS, but not other senior services. The odds of HCBS use declined as income relative to poverty increased, but there was no association between income and use of other senior services. Working for pay reduced the odds of using other senior services. Women were more likely than men to report using other senior services, but there was no gender difference in the multivariate context for use of HCBS.

Using respondent reports of whether they had ever used services, we found that prior use of other senior services was significantly associated with higher current use of HCBS. Twenty-five percent of those who used other senior services in the past also reported current use of HCBS. In contrast, only 3 percent of those who did not use other senior services in the past

reported current use of HCBS. This association persisted after controlling for the same variables included in the prior multivariate models (results available upon request).

Discussion

We report the first national estimates and correlates of the use of senior services, including a range of HCBS and other senior services in adults aged 60 and older. The vast majority of older adults did not use either type or service. Among those currently using services, other senior services, such as exercise classes and tax preparation help, were much more commonly used than HCBS. Comparing the characteristics of those who used HCBS, other senior services, and no services was an important first step in learning more about all three groups.

Multivariate results supported some of the hypothesized associations but not all. Specifically, the predisposing characteristics of older age, Black race, and single marital status were significantly associated with use of HCBS. Higher income was associated with lower odds of HCBS use. The hypothesized enabling factor of participation in Medicaid was supported.

The hypothesized enabling factor of helper, however, was not supported. The role of the helper is potentially complex. Muramatsu et al. (2007) used HRS data to study the interaction of state financial support for HCBS and family care resources, finding that HRS respondents who lived in states with higher spending on HCBS were less likely to enter nursing homes but only if they were childless. In the HRS, helpers are nearly always a family member, often a spouse or daughter. It is not clear what role they play in relation to HCBS. Do their efforts substitute for or complement these services? Muramatsu and Campbell (2002) found suggestive evidence that they are complementary, but this remains a fertile area for future research. Perceived need characteristics that were significantly associated with use of HCBS included self-reported poor health and Nagi limitations, but not ADLs, IADLs, or cognitive impairment. Some of these results are consistent with prior research showing that older age, poorer health, functional limitations and lower income are significantly associated with use of HCBS (Altschuler & Schimmel, 2010), providing further evidence with national probability data, that these services appear to be reaching their intended audience

We found that prior use of other senior services, like help with tax preparation and exercise classes, was associated with current use of HCBS. The comparison of those using HCBS, using other senior services, and no senior services suggested that, in many ways, those using other senior services are more like those using no services than those using HCBS. This result, combined with the popularity of other senior services, suggests that administrators of local senior service agencies may want to consider providing less intensive services outside the scope of traditional HCBS, if they are not already doing so, to introduce older adults to HCBS. Future research should consider familiarity with the senior service delivery system as a potential enabling factor that may act as a gateway for older adults to begin using HCBS as they age..

While the HRS is the first nationally representative study to provide details on who is using HCBS, the data have limitations. First, while many HCBS are included in the HCMS, several important ones are missing. In addition to home-delivered meals, assisted transportation, chore services, adult day care services, and supportive services for caregivers, Title III of the OAA also includes other HCBS such as congregate nutrition programs, nutrition counselling, homemaker, personal care, and case management services. While these services may have been included in the ‘other’ category in the present study, more than 2.3 million people received them in 2011 (Administration on Aging, 2016b). Future studies should aim to include direct assessment of these important services.

The findings of the present study are cross-sectional and do not leverage the benefits of the longitudinal nature of the HRS. An important feature of HRS is that it follows respondents as they transition to long-term care. More research is needed to understand the life course of people who use HCBS. How long are they able to continue living in the community? Do the type, mix, and duration of HCBS play a role in keeping them in the community? These questions go beyond the scope of this paper; however, when answered, they will help researchers and policymakers better understand how HCBS help older adults remain in their homes and communities.

Conclusion

HCBS are increasingly important as the population ages and demand for these services grows. This study presents the first information from a national probability sample on the use of these and other senior services. As expected those using HCBS were more vulnerable than those using other senior services. Those using other senior services, however, were much like those using no services in terms of health and demographic characteristics. We found that services like help with tax preparation and exercise classes were surprisingly popular among those using services. This fact combined with the finding that past use of other senior services dramatically increased the likelihood of current use of HCBS suggests that using senior services may serve as a gateway to future use of HCBS.

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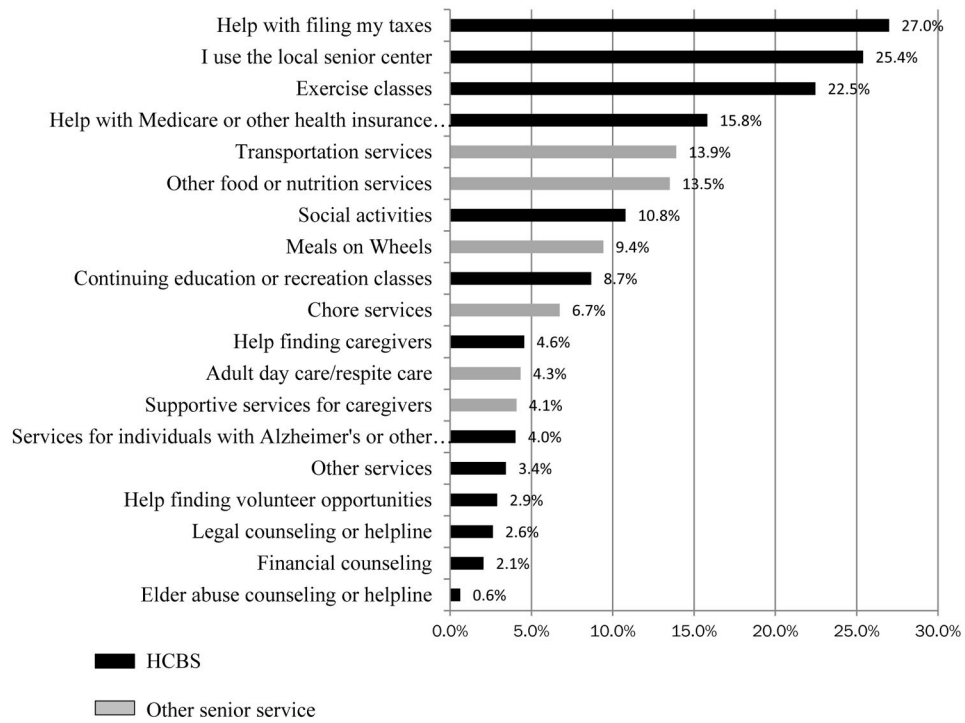


Figure 1.
Prevalence of Current Use of Services by Type of Service

TABLE 1

Demographic Characteristics of People age 60 and over Using any Home and Community-Based Service (HCBS), Using Other Senior Services Only, and Not Using Services

	Any HCBS	Other Senior Services Only	No Services
Total	5.7	9.0	85.3
Predisposing Factors			
Age (years)	75.1	73.1 [*]	70.0 ^{**,††}
Married female (%)	18.6	32.3 ^{**}	34.0 ^{**,††}
Single female (%)	51.5	34.7 ^{**}	20.2 ^{**,††}
Married male (%)	18.8	25.9 [*]	37.8 ^{*,††}
Single male (%)	11.1	7.1	7.9
White non-Hispanic (%)	66.0	84.6 ^{**}	85.1 ^{**,††}
Black non-Hispanic (%)	17.2	6.9 ^{**}	6.8 ^{**,††}
Other non-Hispanic (%)	2.2	2.9	2.4
Hispanic, any race (%)	14.6	5.6 ^{**}	5.7 ^{**,†}
No high school degree (%)	31.0	39.1 [*]	35.5
Mean wealth (\$)	\$181,062	\$485,888 ^{**}	\$550,426 ^{**,††}
Mean income (\$)	\$30,945	\$56,138 ^{**}	\$70,476 ^{**,††}
<100% FPL (%)	23.3	10.0 ^{**}	6.5 ^{**,††}
100–199	34.0	21.3 ^{**}	16.9 ^{**,††}
200–299	17.6	21.4	17.2
300–399	9.0	15.0 [*]	15.0 ^{*,†}
400+	16.4	35.5 ^{**}	44.3 ^{**,††}
Working (%)	9.7	16.2 [*]	26.8 ^{**,††}
Enabling Factors			
Medicaid recipient (%)	26.0	8.3 ^{**}	5.5 ^{**,††}
Has a helper (%)	31.6	14.6 ^{**}	9.4 ^{**,††}
Perceived Need Factors			
Self-reported health is fair or poor (%)	52.8	25.5 ^{**}	23.2 ^{**,††}
Number of ADLs (0 – 5)	0.8	0.3 ^{**}	0.2 ^{**,††}
Number of IADLs (0 – 6)	1.1	0.5 ^{**}	0.4 ^{**,††}
Number of Nagi limitations (0–12)	6.2	4.2 ^{**}	3.6 ^{**,††}
Cognitive impairment (%)	31.5	19.9 ^{**}	14.6 ^{**,††}
Unweighted n	319	479	4,150

Note:

^{*} means different from users of any HCBS *p<0.05 **p<0.01.

[†] means different from users of other senior services only [†]p<.05 ^{††}p<0.01.

Percentages and means are weighted using sampling weights as described in the text.

Source: Health and Retirement Study, 2010 & 2011.

TABLE 2

Patterns of Utilization by Age, Gender and Marital Status, ADLS Limitations, and Income Relative to Poverty

	Any HCBS	Other Senior Services Only	No Services
Age			
60–64	3.9%	5.3%	90.9%
65–74	4.2%	9.1%	86.7%
75–84	8.0%	12.7%	79.3%
85+	13.9%	12.6%	73.5%
Gender & Marital Status			
Single female	12.5%	13.6%	73.9%
Married female	3.1%	8.9%	88.1%
Single male	8.0%	8.4%	83.6%
Married male	3.0%	6.4%	90.6%
ADL limitations			
None	4.1%	8.7%	87.1%
1	12.6%	12.3%	75.1%
2	18.0%	8.9%	73.2%
3	16.2%	12.9%	71.0%
4	20.1%	5.9%	74.0%
5	18.2%	7.2%	74.6%
Income/poverty			
<100% FPL	18.0%	7.5%	74.6%
100 – 199%	10.7%	10.8%	78.5%
200 – 299%	5.3%	11.6%	83.0%
300 – 399%	3.8%	8.8%	87.4%
400%	2.1%	7.6%	90.3%

Note: Percentages and means are weighted using sampling weights as described in the text.

Source: Health and Retirement Study, 2010 & 2011.

TABLE 3

Multivariate Logistic Regression of Utilization of Home and Community-Based Service and Other Senior Services

	Any HCBS		Other Senior Services Only	
	Odds Ratio	95%CI	Odds Ratio	95%CI
Predisposing Factors				
Age 75	1.495 *	(1.085–2.068)	1.515 **	(1.241–1.861)
Female	1.202	(0.819–1.767)	1.385 **	(1.120–1.706)
Single	2.020 **	(1.568–2.701)	1.532 **	(1.253–1.931)
Black, non-Hispanic	1.503 *	(1.105–2.045)	1.169	(0.905 – 1.511)
Hispanic	1.48	(0.853–2.567)	1.250	(0.856–1.826)
Years of education	0.832	(0.610–1.135)	0.994	(0.822–1.216)
< 100–199% FPL	0.849	(0.507–1.142)	1.092	(0.691–1.725)
200–299	0.661	(0.374–1.169)	1.194	(0.793–1.798)
300–399	0.507	(0.251–1.024)	0.970	(0.601–1.566)
400+	0.471 **	(0.256–0.867)	1.037	(0.681–1.581)
Working	0.849	(0.430–1.601)	0.704 *	(0.526–0.932)
Enabling Factors				
Has Medicaid	1.857 **	(1.277–2.686)	1.598 *	(1.072–2.440)
Has a helper for any ADLs/IADLs	1.271	(0.872–1.894)	1.355	(0.988–1.852)
Perceived Need Factors				
Health is fair or poor	1.489 *	(1.082–2.051)	1.009	(0.783–1.300)
Number of ADLs (0–5)	1.040	(0.887–1.220)	0.957	(0.852–1.074)
Number of IADLs (0–6)	1.064	(0.944–1.193)	0.977	(0.877–1.087)
Number of Nagi limitations (0–12)	1.088 *	(1.007–1.180)	1.024	(0.978–1.073)
Cognitive impairment	1.319	(0.934–1.859)	1.099	(0.865–1.397)
Unweighted n	4,948		4,948	

Note:

* p<0.05

** p<0.01.

Regressions are weighted using sampling weights as described in the text.

Source: Health and Retirement Study, 2010 & 2011.