
Workforce Issues and Consumer Satisfaction in Medicaid Personal Assistance Services

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This study used a survey of older people and younger persons with disabilities who were receiving Medicaid-financed home and community-based services (HCBS) to assess the effect of workforce issues on consumer satisfaction. We found that recruitment problems had very strong negative and significant effects on consumer satisfaction. An interruption in service was a more important and significant indicator of consumer dissatisfaction than not having the same worker over time. We also found that problems with worker training and respect and treatment of consumers strongly and significantly affected satisfaction with paid care. Efforts to improve workforce issues are needed to improve the quality of care of these services.

INTRODUCTION

Many community-dwelling Americans with disabilities of all ages need daily help with personal assistance needs. These needs include help with such tasks as shopping and paying bills and less frequently with activities of daily living (ADLs) such as bathing and eating. While a majority of these persons receive assistance with these activities from unpaid family members, friends, and neighbors, a sizable minority receives assistance from paid paraprofessional helpers (Stone and Wiener, 2001).

Little is known about the quality of paid HCBS, even though increasing numbers of people are receiving paid care at home

(Wiener and Brown, 2005). Developing measures of quality for HCBS is difficult, partly because many types of services are covered across large geographical areas (Wiener and Tilly, 2003). Reliable measures and data on quality of care for non-skilled HCBS such as personal care are not readily available.

One component of the quality of care is satisfaction with services (Donabedian, 1966). Satisfaction relates to how beneficiaries experience care received compared to their standards or expectations (Linder-Pelz, 1982). Satisfaction measures can provide important information about interpersonal aspects of care, such as interactions and communication between providers and consumers, consumers' perceptions on how much providers respect, understand, and listen to them, and whether consumers are treated with dignity (Aharony and Strasser, 1993; Keepnews, 2003). They also can provide information about whether consumers think they are receiving enough of the right types of care.

Geron and colleagues (2000) provide an overview of the factors affecting satisfaction with health care and found that few prior studies analyze satisfaction with HCBS. Researchers usually examine demographic characteristics and health status when studying correlates of satisfaction with health care (Geron et al., 2000), but these characteristics may not provide needed information to inform policies affecting the organization, delivery, and financing of HCBS. For example, few researchers have examined the effects of workforce-related factors such as recruitment and retention

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of workers on consumer satisfaction with personal care services (Larson, Hewitt, and Lakin, 2004). In particular, examining the independent effects of such workforce factors on consumer satisfaction would address an important gap in the literature on satisfaction with HCBS.

At least four major workforce factors may affect consumer satisfaction with personal assistance services: (1) difficulty recruiting and retaining workers, (2) inadequate worker training, (3) potential mistreatment of consumers, and (4) lack of communication and inappropriate care caused by differences in the cultural preferences of workers and consumers (Stone and Wiener, 2001).

First, providers and consumers report problems in recruiting and retaining direct service workers. In 2002, 37 States reported that direct care shortages were a serious workforce issue (Harmuth and Dyson, 2002). While prior work (American Health Care Association, 2002) shows that turnover and vacancy rates for certified nursing assistants in nursing homes is very high, home care turnover and vacancy rates are believed to be lower, but still substantial (Stone and Wiener, 2001).

Satisfaction with personal assistance services is likely compromised by the vacancies and high turnover of these workers. The vacancies mean that consumers may not have enough workers to meet their needs. High turnover means that continuity of care is reduced, with staff not having time to get to know the needs and preferences of individual consumers. Workers who are providing care in understaffed environments may experience high levels of stress and frustration, which may contribute to high turnover and poor quality of care. Quality of care is also affected when workers do not show up for work or show up late and agencies and consumers are required to find backup workers on short notice.

The second major problem that may affect consumer satisfaction with personal assistance services is inadequate worker training. Consumers who perceive that their workers are not well trained and who experience substandard care may be less satisfied than consumers who perceive their workers have been properly trained. Low levels of education and training may make it difficult for workers to provide the standard of care that consumers' desire. Paid certified nursing assistants and home health aides are required under Federal law to receive 75 hours of initial training, but State training requirements for personal care workers vary greatly and generally are not extensive. Consumers usually orient workers as to how they would like personal care tasks performed, but in addition, may end up providing ad hoc training for workers new to the field to address shortcomings in prior training.

The third major problem potentially affecting satisfaction concerns how workers treat and respect consumers. Consumers may be less satisfied with care if they are not treated well and respected by their workers. Mistreatment by paid and unpaid caregivers has been reported in a few limited studies, and some researchers believe that the problem is underreported (Bonnie and Wallace, 2003). Estimates of the occurrence of abuse and neglect of older people in the general population (regardless of source) have varied from about 2 to 10 percent annual incidence, although the basis of these estimates is uncertain (Branch, 2001).

The fourth major problem that may affect satisfaction is the issue of cultural competency such as how well workers and consumers communicate and get along with each other (Saha et al., 1999; LaVeist and Nuru-Jeter, 2002; LaVeist and Carroll, 2002; Shin and Moon, 2005). Given the very personal nature of these services, workers

who can understand and accommodate cultural differences in privacy and custom can help ensure higher consumer satisfaction with care. This mutual understanding can help ameliorate situations where disagreements or problems arise.

STUDY DESIGN AND DATA

The goal of this study is to assess the impact of workforce issues on two measures of consumer satisfaction with Medicaid personal assistance services among older people and younger persons with disabilities using primary data analysis. First, we examine the independent effects of problems with recruitment and retention on a consumer satisfaction scale. Second, we analyze the independent effects of worker training, treatment, and respect on a single consumer satisfaction measure.

This effort is part of a larger research project (Wiener, Tilly, and Alecxih, 2002) funded by CMS in which The Lewin Group and its subcontractors, RTI International, the University of Minnesota Research and Training Center on Community Living, Mathematica Policy Research, and The Medstat Group are studying Medicaid financing and delivery of HCBS to older people and younger adults with physical disabilities, as well as to individuals with mental retardation and developmental disabilities. The overall goal of the larger project is to study selected programs to assess their effects on consumer quality of care and Medicaid utilization and expenditures. States chosen for inclusion in the study include ones with well-developed community-based systems and States that are in the process of developing their non-institutional services systems. States included in the study for the part of the project focusing on older people and younger

persons with physical disabilities are Alabama, Kentucky, Maryland, Michigan, Washington, and Wisconsin.

Survey Methodology

Mathematica Policy Research, Inc., conducted a survey of Medicaid HCBS beneficiaries in the six selected States (Snell et al., 2005). The target population for the HCBS study consisted of all adult Medicaid HCBS waiver and personal care option recipients. The sample was allocated proportionally among States based on the number of HCBS beneficiaries in each State. The sample was selected using simple random sampling and weights were computed from the inverse of the selection probability, which varied by State. Respondent data was adjusted for non-response, first for the ability to locate a person, and then for whether or not the located person responded. Because of the interest in differences between older and younger persons with disabilities, the survey sample was stratified by age (under and over age 65).

The survey was fielded between May 2003 and June 2004. The survey respondents participated in the survey directly or via proxy (paid and unpaid caregivers) and included participants living in their own homes and residents of assisted living facilities and other group settings. The survey, which took about one-half of an hour to complete, was conducted primarily through telephone interviews using a computer-assisted telephone interviewing (CATI) system ($N = 2,458$) with some in-person interviews ($N = 143$)¹. The overall survey response rate was 72 percent, with 28 percent of respondents using a proxy respondent, though the percentage of proxy respondents in the analyses reported was

¹ Four observations were later determined to be duplicates and were removed from the sample.

only 16 percent. Survey data were obtained from 2,597 community-residing Medicaid beneficiaries.

Dependent Variables

We developed two measures of consumer satisfaction for use as dependent variables in six regression analyses. We analyzed the first measure of consumer satisfaction using three regressions—one on the overall sample, one on persons under age 65, and one on persons age 65 or over. The dependent variable in these three regressions is the Satisfaction with Paid Personal Assistance Scale (SPPAS), a 100-point, eight-item scale designed to measure the satisfaction of respondents with paid care received and various aspects of their relationship with their workers (Khatutsky, Anderson, and Wiener, 2006). The scale comprised eight questions (Table 1). These items measure overall satisfaction, as well as specific interpersonal aspects of care provided by paid helpers, such as communication with paid helpers, how problems get resolved, how often paid helpers get impatient or angry, and how well they are trained. The scale had complete responses for 2,325 of the 2,597 self-respondents and unpaid caregiver proxies in the sample. Paid caregivers who were proxies were not asked questions about satisfaction to eliminate potential bias.

We constructed the scale by collapsing response categories of individual survey questions as needed in order to increase variability across response categories, and by assigning a scale value to all response categories within each underlying variable created for use in the scale. Dummy variables included in the scale were scaled 0-100, variables with three response categories were scaled 0-50-100, variables with four response categories were scaled 0-33-

67-100, and variables with five response items were scaled 0-25-50-75-100. We did not adjust the scale for the fact that this method allowed binary variables to have more weight than categorical variables. The scale was set to a missing value if more than four of the eight potential items had missing responses. We designed the scale to range from 0-100 so that coefficients associated with independent variables could be interpreted as percentage point differences in satisfaction across the categories of each variable. The scale had a mean of 93.9 (standard deviation of 11.2) and a Cronbach's (1951) alpha of 0.7.

We evaluated the eight-item scale using factor analysis, which showed one dominant factor (eigenvalue 2.9). This factor loaded uniformly on all the variables, predicting a high correlation with the SPPAS, which was constructed as a mean of all items. The correlation between the scale and the factor was 0.97.

We analyzed the second measure of consumer satisfaction also using three regressions—one on the overall sample, one on persons under age 65, and one on persons age 65 or over. The dependent variable in these three regressions is one item from the eight-item scale, the four-level Overall Satisfaction with Paid Care measure, designed to assess the independent effects of worker training, treatment, and respect for a client on satisfaction with paid services. While measures of worker training, treatment, and respect were part of the eight-item scale used previously, we use them as independent variables with the other controls in this second part of our analyses to test whether they had a separate relationship on the Overall Satisfaction with Paid Care variable apart from their contribution to the eight-item scale. This variable had values for 2,303 of the 2,597 respondents in the sample.

Table 1
Proportions for Responses to Variables Comprising the Satisfaction with Paid Personal Assistance Scale

Survey Question	Survey Respondents		
	All	Under Age 65	Age 65 or Over
<i>N</i> (Unweighted)	1,340	728	612
How Happy Overall with Paid Care Received			
Very Happy	0.755	0.752	0.758
Somewhat Happy	0.205	0.212	0.194
Somewhat Unhappy	0.027	0.023	0.033
Very Unhappy	0.013	0.012	0.014
Has It Ever Been Difficult to Get Problems Resolved or Fixed			
Yes	0.132	0.170	0.078
No	0.868	0.830	0.922
How Well Get Along with Paid Helper			
Very Well	0.810	0.795	0.830
Well	0.183	0.197	0.163
Not Very Well	0.005	0.006	0.004
Not At All Well	0.002	0.002	0.002
Any Trouble Communicating with Paid Helper			
Yes	0.073	0.088	0.052
No	0.927	0.912	0.948
Problems of Paid Helper Ignoring Survey Participant			
Never	0.845	0.816	0.887
Seldom	0.089	0.118	0.047
Sometimes	0.054	0.049	0.063
Often	0.007	0.012	0
Very Often	0.004	0.005	0.003
Problems with Paid Helper Treating Survey Participant Badly			
Never	0.948	0.938	0.963
Seldom	0.031	0.037	0.023
Sometimes	0.016	0.02	0.009
Often	0.001	0.002	0.001
Very Often	0.003	0.003	0.005
Is Paid Helper Competent and Well Trained			
Yes	0.917	0.915	0.921
Sometimes	0.044	0.051	0.034
No	0.039	0.035	0.045
Is Paid Helper Respectful			
Yes	0.961	0.955	0.969
Sometimes	0.021	0.021	0.022
No	0.018	0.024	0.010

NOTE: Results are weighted and stratified by State.

SOURCE: RTI analysis of the Mathematica Policy Research, Inc., Home and Community-Based Services Survey, 2004.

Independent Variables

Primary independent variables of interest for workforce policy included (1) whether one had ever had a problem or difficulty finding a replacement worker, (2) whether a worker had either not shown up when scheduled or had shown up late, (3) how many paid workers one had retained in the

last 6 months, (4) how well workers were trained, (5) how well they treated the consumer, and (6) whether they respected the consumer. While we used all six variables in the three regressions on the Overall Satisfaction with Paid Care measure, the last three of these variables were part of the SPPAS and were not used as independent variables in the three regressions

Table 2

Variable Construction and Descriptive Characteristics of the Sample Using Satisfaction with Paid Personal Assistance Scale

Characteristic	Variable Construction	All Survey Respondents	Survey Respondents	
			Under Age 65	Age 65 or Over
N (Unweighted)		1,340	728	612
Satisfaction with Paid Personal Assistance Scale	8-Item Scale Ranging from 0 to 100	93.200	92.270	94.550
Workforce Problems				
Problem Replacing a Paid Worker	Dummy Variable = 1 If Consumer Reports Problems Replacing a Paid Worker	0.184	0.232	0.114
Not Show Up as Scheduled or Show Up Late	Dummy Variable = 1 If Consumer Reports Problem with Paid Worker Not Showing Up or Showing Up Late	0.144	0.142	0.147
Number of Paid Helpers in Last 6 Months	Count Variable for Number of Paid Helpers Reported in the Last 6 Months	2.788	2.871	2.667
Demographics				
18 to 44 Years	Dummy Variable for Respondent's Age Group	0.230	0.390	—
45 to 64 Years	Dummy Variable for Respondent's Age Group	0.361	0.610	—
65 to 74 Years	Dummy Variable for Respondent's Age Group	0.173	—	0.424
75 to 84 Years	Dummy Variable for Respondent's Age Group	0.159	—	0.389
85 Years or Over	Dummy Variable for Respondent's Age Group	0.077	—	0.187
Male	Dummy Variable for Respondent's Sex	0.260	0.328	0.161
White	Dummy Variable for Respondent's Race	0.713	0.727	0.693
Black	Dummy Variable for Respondent's Race	0.172	0.161	0.188
Asian	Dummy Variable for Respondent's Race	0.087	0.090	0.081
Other Race	Dummy Variable for Respondent's Race	0.029	0.022	0.038
Matching Race	Dummy Variable = 1 If Survey Participant and Paid Caregiver Report the Same Race or Hispanic Origin	0.734	0.720	0.755
Health and Functional Status				
Fair/Poor Health	Dummy Variable for Self-Reported Health Status	0.691	0.698	0.680
Good/Very Good Health	Dummy Variable for Self-Reported Health Status	0.275	0.260	0.297
Excellent Health	Dummy Variable for Self-Reported Health Status	0.034	0.042	0.023
Number of IADL Limitations	4-Item Scale Ranging from 0 to 4	3.238	3.261	3.204
Number of ADL Limitations	6-Item Scale Ranging from 0 to 6	2.564	2.625	2.476
Proxy Responding	Dummy Variable=1 If Proxy Responded	0.158	0.131	0.196
Ever Institutionalized	Dummy Variable=1 If Ever Been a Resident or Patient in a Nursing Home	0.189	0.185	0.194
Some or Great Deal of Pain	Dummy Variable=1 If Experienced Pain 4 Weeks Prior to the Survey	0.869	0.865	0.875
Having Pressure Sores	Dummy Variable=1 If Had Sores 6 Months Prior to the Survey	0.120	0.142	0.088
Bladder/Bowel Difficulties	Dummy Variable=1 If Had Incontinence Problems 6 Months Prior to the Survey	0.604	0.598	0.612
Unmet Needs for ADLs and IADLs	10-Item Scale Ranging from 0 to 10	0.814	0.936	0.637

See footnotes at the end of the table.

Table 2—Continued
Variable Construction and Descriptive Characteristics of the Sample Using Satisfaction with Paid Personal Assistance Scale

Characteristic	Variable Construction	All Survey Respondents	Survey Respondents Under Age 65	Survey Respondents Age 65 or Over
Social Characteristics and Residence				
Social Participation (%)	Dummy Variable=1 If Went Out for Social/Recreation at Least Once a Week Prior to the Survey	0.797	0.833	0.744
State 1	Dummy Variable for the State of Residence	0.086	0.065	0.116
State 2	Dummy Variable for the State of Residence	0.163	0.136	0.202
State 3	Dummy Variable for the State of Residence	0.034	0.026	0.045
State 4	Dummy Variable for the State of Residence	0.302	0.385	0.181
State 5	Dummy Variable for the State of Residence	0.100	0.087	0.118
State 6	Dummy Variable for the State of Residence	0.315	0.300	0.337

NOTES: Results are weighted and stratified by State. IADL is instrumental activity of daily living. ADL is activities of daily living.

SOURCE: RTI analysis of the Mathematica Policy Research, Inc., Home and Community-Based Services Survey, 2004.

on that dependent variable. Our ability to control for these workforce characteristics separately is a strength of the study.

We grouped the remaining independent variables into three domains—social and residential characteristics, demographic characteristics, and health and functional characteristics—for use as controls. We present details of variable construction in Table 2 along with the means for the overall sample analyzed as well as for those respondents over and under age 65. For demographic characteristics, we included variables representing age groups as dummy variables with the group 65 to 74 years as the omitted group. Approximately 59.1 percent of the sample used in regressions was under age 65. Other demographic characteristics modeled included categorical measures for sex (26.0 percent were males) and race (71.3 percent were White persons, 17.2 percent were Black persons, and 8.7 percent were Asian persons). We also included a variable to indicate when care recipients and paid caregivers have a matching race or Hispanic origin (mean of 73.4 percent) in an attempt to control for any effects of cultural competency of workers. We did not include income given the lack of variability in this Medicaid-eligible population.

We included a broad range of health and functional status characteristics. For self-reported health status, 69.1 percent of the sample reported fair or poor health, 27.5 percent reported good or very good health, and 3.4 percent reported excellent health. We included a measure of the number of limitations in six ADLs, including bathing, dressing, eating, transferring, walking across the room, and toileting (mean of 2.56). We also created a measure for the number of limitations in four instrumental activities of daily living (IADLs), including cooking, managing medications, shop-

ping, and doing light housework (mean of 3.24). Approximately 15.8 percent of sample respondents were proxies who were used in the survey to address limited cognitive status in the sample population. We also included a composite of 10 items that asked about unmet needs for ADL and IADL assistance, a count variable ranging from 0 to 10 (mean of 0.81). Additional health status indicators included any prior nursing home use (mean of 18.9 percent), incidence of recent pain (mean of 86.9 percent) or pressure sores (mean of 12.0 percent), and problems with bladder/bowel incontinence (mean of 60.4 percent). We imputed self-reported health status based on survey respondents' ADL impairment for about 1 percent of the total sample for which a response was missing on the original categorical variable.

We created a measure of social participation to identify respondents who took part in social or recreational activity at least once a week (mean of 79.7 percent). We also included the respondent's State of residence to control for State-level differences such as the design and operation of State HCBS programs and other factors.

The sample size for regressions was reduced to 1,340 observations for the regression on the eight-item scale and to 1,307 observations for the regression on the Overall Satisfaction with Paid Care measure almost entirely because not all respondents were asked whether they had had a problem replacing a worker. This question was not asked of the 874 persons who either lived in group settings or who had never had to replace a worker. Those who did and did not respond to this question did not differ on important demographic, health, and functional status measures used in the analysis. Only a very small number of observations were randomly missing across the independent variables to be used in regressions.

METHODOLOGY

In predicting satisfaction with personal care services using the SPPAS, we estimated an ordinary least squares (OLS) model that was right-censored at a scale value of 100 to account for the approximately one-half of all observations with that value (54.7 percent for the overall sample, 51.8 percent for the sample under age 65, and 58.2 percent of the sample age 65 or over). The shape of the distribution of the remaining part of the satisfaction scale allowed us to assume the properties of a normal distribution. For the four-level categorical measure for Overall Satisfaction with Paid Care, we estimated an ordered logistic regression model. We estimated summary statistics using probability weights adjusted for non-response and post-stratification and stratified estimates by State, but did not do so with the regression models because we estimated fully specified models incorporating State effects to capture unobserved heterogeneity across States. As part of our data collection arrangement with the six States, we agreed not to identify any individual State. Thus, the States are identified only by number.

We report results from our models at conventional levels of significance, first in the overall sample, and then for each age subgroup separately. We had reason to believe that the two populations would differ in their expectations. For example, we anticipated that younger disabled adults would have higher expectations for participating in the workforce and community life, and subsequently might be more demanding (less satisfied) than elderly respondents. Estimating satisfaction for these subgroups allowed us in part to account for these differences and determine whether levels of satisfaction differed between them.

RESULTS

In the overall sample, as well as in the age-related subgroup analyses, the workforce policy variables often were significant indicators of satisfaction, while demographic and health and functional status variables were seldom significant. We found a 10-plus percentage point difference in satisfaction for problems in replacing workers and for when workers never show up or show up late. We found lesser, but still significant effects for most of the remaining workforce related variables.

Regression on SPPAS

Two of the three workforce characteristics analyzed in this set of regressions were statistically significant determinants of consumer satisfaction (Table 3). In the regression on this scale in the overall sample, respondents having problems or difficulty in replacing workers were 10.2 percentage points less satisfied than those without a problem. Younger persons with disabilities with this problem were 8.6 percentage points less satisfied than persons without this problem while older persons with this problem were 13.5 percentage points less satisfied. Respondents in the overall sample who had a worker who did not show up or showed up late were 14.9 percentage points less satisfied than those respondents whose workers showed up when scheduled or on time. Younger persons with disabilities were 14.7 percentage points less satisfied if a worker was late or did not show up for work, which was similar to older persons, who were 15.3 percentage points less satisfied. We did not find that the number of paid workers consumers had hired over the last 6 months was a statistically significant predictor in any of the three regressions.

Table 3
Ordinary Least Squares Regression on Satisfaction with Paid Personal Assistance Scale

Characteristic	All Survey Respondents		Survey Respondents Under Age 65		Survey Respondents Age 65 or Over	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
N (Unweighted)	1,340		728		612	
Workforce Problems						
Problem Replacing a Paid Worker	-10.23	*1.55	-8.56	*1.89	-13.53	*2.62
Not Show Up as Scheduled or Show Up Late	-14.92	*1.5	-14.71	*2.04	-15.27	*2.18
Number of Paid Helpers in Last 6 Months	-0.19	0.18	-0.39	0.23	0.29	0.31
Demographics						
18 to 44 Years	-4.07	*1.89	-3.15	1.69	—	—
45 to 64 Years	-0.98	1.68	—	—	—	—
75 to 84 Years	-0.06	1.93	—	—	0.39	1.92
85 Years or Over	2.34	2.38	—	—	2.23	2.41
Male	-0.54	1.36	-0.13	1.67	0.13	2.33
Black	-2.85	1.55	-0.08	2.16	-5.55	*2.20
Asian	1.53	2.33	3.72	3.13	-2.19	3.42
Other Race	1.93	3.89	-6.23	5.34	9.00	5.86
Matching Race	3.39	*1.31	2.48	1.72	5.35	*1.99
Health and Functional Status						
Fair/Poor Health	0.51	1.33	3.34	1.79	-1.74	1.94
Number of IADLs	0.47	0.64	0.58	0.80	0.24	1.06
Number of ADLs	0.56	0.35	0.66	0.45	0.32	0.57
Proxy Responding	-5.21	*1.61	-7.2	*2.23	-2.94	2.30
Ever Institutionalized	-1.62	1.52	-3.45	2.07	1.13	2.20
Some or Great Deal of Pain	-1.44	1.77	-5.38	*2.38	2.48	2.61
Pressure Sores	0.59	1.80	0.28	2.22	0.75	3.03
Incontinence	-0.85	1.27	2.14	1.72	-3.34	1.85
Unmet Needs for ADLs and IADLs	-2.08	*0.33	-2.26	*0.41	-1.76	*0.53
Social Characteristics and Residence						
Social Participation	1.47	1.36	0.93	1.95	2.95	1.87
State 1	4.95	*2.03	5.44	2.82	3.64	2.91
State 2	7.56	*1.78	9.12	*2.42	4.91	2.60
State 3	1.28	2.60	11.49	*3.97	-5.28	3.50
State 4	5.20	*1.94	6.92	*2.37	3.38	3.45
State 5	3.39	2.58	5.02	3.55	1.07	3.71
Constant	102.26	*3.57	100.20	*4.43	100.88	*5.21

*Statistically significant at $p < 0.05$.

NOTES: ADL is activity of daily living. IADL is instrumental activity of daily living.

SOURCE: RTI analysis of the Mathematica Policy Research, Inc., Home and Community-Based Services Survey, 2004.

Only a few demographic characteristics had statistically significant effects on satisfaction. In the main regression, respondents age 0 to 44 were 4.0 percentage points less satisfied than persons age 65 to 74, the omitted age category. There were no statistically significant effects of age in the subgroup analyses. Race was a significant determinant of satisfaction for older persons with disabilities, with Black respondents 5.5 percentage points less satisfied than White respondents, with no significant effect in the regressions on the overall sample and younger persons. Our indicator of matching race between respondent and worker was a significant determinant of satisfaction in the main regression (3.4 percentage points more satisfied) and in the regression on older persons (5.3 percentage points), but not in the regression for younger persons. There were no significant sex effects.

Among health and functional characteristics, proxy status and our index of unmet need were statistically significant in the regressions. Proxy respondents in the main regression were 5.2 percentage points less satisfied than self-respondents, and 7.2 percentage points less satisfied in the younger group with disabilities. For every unmet need reported by respondents, satisfaction ratings were only slightly lower, with reductions of 2.1 percentage points in the main regression, 2.3 percentage points for younger respondents, and 1.8 percentage points for older persons. Younger persons with disabilities who had some or a great deal of pain in the last 4 weeks reported 5.4 percentage points lower satisfaction. Measures of self-reported health status, ADLs and IADLs were not statistically significant in any regression.

Regression on Overall Satisfaction with Paid Care

We found that workforce characteristics analyzed in the three regressions using this dependent variable were almost always statistically significant (Table 4). Consumers who had problems or difficulty with replacing workers were somewhat less satisfied in both the overall sample and among younger persons with disabilities, but there was no significant effect among older persons. Respondents in the overall sample and in both age subgroups who reported problems with workers not showing up or arriving late were much less satisfied than those persons who had not encountered any problems and the findings were all significant. Consumers in the overall sample and in the younger population were only slightly less satisfied for every additional paid helper they had hired over the last 6 months, with no significant effect in the older population.

The workforce variables included in this regression but not included in the Satisfaction with Paid Personal Assistance Scale were almost always significant with large effects. Respondents who sometimes or always perceived their workers to be well trained were much more satisfied in the overall sample and both age subgroups, and the findings were all significant. Respondents with workers who treated them badly very often or often were significantly and greatly dissatisfied in all three regressions. In the overall sample and in the younger population, workers who sometimes or seldom treated consumers badly caused these consumers to also be significantly and greatly dissatisfied, but not to the extent as when the worker treated respondents badly often or very often. Finally, consumers in the

Table 4
Ordered Logistic Regressions of the Probability of Overall Satisfaction with Paid Care

Characteristic	All Survey Respondents		Survey Respondents Under Age 65		Survey Respondents Age 65 or Over	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
N (Unweighted)	1,340		728		612	
Variable						
Workforce Problems						
Problem Replacing a Paid Worker	-0.45	*0.19	-0.52	*0.23	0.37	0.35
Not Show Up as Scheduled or Show Up Late	-0.83	*0.23	-0.67	*0.32	-1.06	*0.36
Number of Paid Helpers in Last 6 Months	-0.05	*0.02	-0.06	*0.03	-0.04	0.03
Paid Workers Some or All Well Trained	1.56	*0.35	1.21	*0.50	2.07	*0.52
Paid Worker Treats Badly Often/Very Often	-3.61	*0.82	-4.20	*1.24	-3.01	*1.19
Paid Worker Treats Badly Some/Seldom	-1.30	*0.29	-1.57	*0.35	-0.90	0.53
Paid Worker Is Respectful of Needs/Wants	1.05	*0.51	0.70	0.65	2.29	*1.02
Demographics						
18 to 44 Years	-0.08	0.24	—	—	—	—
45 to 64 Years	-0.05	0.21	0.03	0.21	—	—
75 to 84 Years	-0.34	0.23	—	—	-0.32	0.25
85 Years or Over	0.06	0.30	—	—	0.06	0.31
Male	-0.23	0.17	-0.44	*0.21	0.25	0.31
Black	-0.60	*0.19	-0.85	*0.26	-0.38	0.29
Asian	0.02	0.28	0.24	0.40	-0.33	0.41
Other Race	-0.52	0.43	-0.78	0.64	-0.35	0.60
Matching Race	0.19	0.16	0.29	0.21	0.08	0.26
Health and Functional Status						
Fair/Poor Health	-0.11	0.16	0.01	0.23	-0.12	0.25
Number of IADLs	0.14	0.08	0.19	0.11	0.05	0.14
Number of ADLs	0	0.04	0.02	0.06	-0.05	0.07
Proxy Responding	-0.17	0.20	-0.30	0.29	-0.01	0.30
Ever Institutionalized	0.09	0.19	-0.28	0.26	0.45	0.31
Some or Great Deal of Pain	0	0.22	-0.26	0.30	0.13	0.34
Pressure Sores	0.18	0.22	0.24	0.28	0.17	0.37
Incontinence	-0.24	0.16	-0.01	0.21	-0.52	*0.25
Unmet Needs for ADLs and IADLs	-0.09	*0.04	-0.12	*0.05	-0.09	0.07
Social Characteristics and Residence						
Social Participation	0.14	0.17	0.04	0.25	0.28	0.24
State 1	0.27	0.25	-0.09	0.35	0.45	0.39
State 2	0.39	0.22	0.36	0.30	0.29	0.33
State 3	-0.09	0.30	0.59	0.49	-0.47	0.42
State 4	0.53	*0.25	0.52	0.31	0.31	0.45
State 5	-0.26	0.29	-0.36	0.40	-0.26	0.46
Constant 1	-2.18	*0.67	-3.65	*0.88	-1.28	1.20
Constant 2	-1.24	0.66	-2.14	0.84	0.29	1.23
Constant 3	1.29	0.66	0.61	0.84	2.68	*1.25

*Statistically significant at $p < 0.05$.

NOTES: ADL is activity of daily living. IADL is instrumental activity of daily living.

SOURCE: RTI analysis of the Mathematica Policy Research, Inc., Home and Community-Based Services Survey, 2004.

overall sample and in the older population who reported that their workers treated them with respect were much more satisfied than when they were not treated with respect, but there was no significant effect in the younger population.

As in the prior regressions using the eight-item satisfaction scale, few demographic characteristics were significant predictors of satisfaction with care. Males in the younger group with disabilities were somewhat less likely to be satisfied with paid care, but there were no significant sex effects in the overall sample or among older persons. When considering race, Black beneficiaries in both the overall sample and among younger persons with disabilities were somewhat less likely to be satisfied with paid care and the findings were significant. The indicator for matching race between the consumer and the worker was not significant in any regression. There were no significant age effects in any of the regressions performed.

Few health and functional characteristics were significant predictors of satisfaction with paid care. Older consumers with incontinence problems were somewhat less satisfied than those older persons without this problem. The unmet need index was a significant predictor of satisfaction with paid care for respondents in the overall sample and the younger population with disabilities, who were only slightly less likely to be satisfied for every unmet need experienced. There was no significant effect of unmet need in the older population. Self-reported health status, measures of ADLs and IADLs, and other health related factors were not significant in any regression.

DISCUSSION

This study highlights the importance of workforce issues to consumers who use Medicaid personal assistance services.

While other studies (Anderson et al., 2004) focus on the lack of available and trained workers to meet the demand for services, this study demonstrates the importance that consumers place on services that are reliable and that satisfy their preferences. Efforts to recruit and retain workers need to consider the desires of consumers for reliable and caring workers if the care is to be valued.

This study's findings add to prior work on consumer satisfaction with personal assistance services by measuring the independent effects of workforce-related characteristics on consumer opinions. Two related articles examined the effects of demographic, health, functional status, and social variables (Khatutsky, Anderson, and Wiener, 2006) and consumer-direction (Wiener, Khatutsky, and Anderson, 2006) on the same satisfaction scale we used in this study. We found that workforce-related issues are powerful predictors of client satisfaction with services, taking precedence over other domains. While this study specifically sought to measure client satisfaction with paid personal assistance, there are other areas of life for frail and disabled Medicaid beneficiaries that are important to study. Other satisfaction scales could be constructed to measure a consumer's sense of their overall condition or satisfaction with quality of life. Especially since satisfaction is likely to be a key outcome variable in assessing the quality of HCBS, more research is needed on scales for measuring satisfaction with these services.

Consumer problems with worker recruitment in this study (e.g., replacing a worker and dealing with their unscheduled absences) were always more important indicators of consumer dissatisfaction than problems with retention (e.g., having many different workers over time). This finding implies that when you count on someone else to meet your personal assistance needs,

having services performed by any number of different workers is better than having no services at all.

Whether consumers perceived that their workers were well trained and competent also strongly and consistently affected consumer satisfaction. In this study, having well-trained workers was valued as much as having no recruitment problems. Consumers expect paid workers to have sufficient training to perform required tasks well.

Worker mistreatment of consumers was a very strong and consistent indicator of dissatisfaction. One would expect to find great dissatisfaction among consumers who were being mistreated by workers, and the magnitude of the coefficient for being treated badly often or very often was the highest of all measures included in our analyses. While a statistically significant predictor, problems with mistreatment were reported by only 5 percent of consumers in this sample, and only 2 percent of consumers reported mistreatment occurring more than very infrequently. While this problem is not large in our sample, the fact that it exists is troubling. Our findings differed across the two age groups regarding the effect of worker respect for consumers, with significant impacts only for older persons. Older persons in this sample may have been disproportionately served by family members, from whom the consumer had higher expectations for respect than for workers with whom there was no prior relationship.

The only two non-workforce related characteristics that routinely rose to statistical significance were whether the respondent was a Black person and the degree to which a respondent had unmet needs. The measure of racial concordance may be indicative of the preferences of respondents for persons who share the same cultural, ethnic and linguistic background, but may also

reflect racial bias. A similar measure for race or cultural match may be informative for future research to better understand how these issues affect worker performance and consumer receipt of services.

Two limitations affect these analyses. First, the study is limited to Medicaid beneficiaries in six States, and its results cannot necessarily be generalized to the national population of Medicaid beneficiaries receiving these services. However, the study includes States with a range of home and community-based systems and a substantial sample of respondents. For context, another study (Wiener, Tilly, and Alexih, 2002) conducted as part of this larger CMS study, fully describes the features of the Medicaid home and community-based systems in each of these States. Second, satisfaction is an important indicator of quality of HCBS; however, because it is subjective, it is susceptible to cultural norms and expectations and social desirability, making it difficult to measure reliably (Geron et al., 2000).

This study suggests that workforce factors have a major effect on consumer satisfaction with their personal assistance services. Making it easier to find replacement workers, having workers show up on time, reducing worker turnover, increasing worker training, and insisting that workers treat consumers with respect and not mistreat them would all likely improve consumer satisfaction with paid HCBS. Improving consumer satisfaction is a key element to empowering consumers and ensuring that the services they receive meet their needs.

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