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# Racial and Ethnic Variations in Caregiver Service Use

Andrew E. Scharlach, PhD

Nancy Giunta, PhD

Julian Chun-Chung Chow, PhD

Amanda Lehning, MSW

*University of California at Berkeley*

**Objectives:** This article examines whether race and ethnicity contribute to the differential use of caregiver support services, when controlling for caregiver and care recipient characteristics, as represented by predisposing, enabling, and need factors included in the Behavioral Model of Health Services Use.

**Methods:** The study includes 1,508 individuals who provide care to an ill or disabled adult aged 50 or older, identified through a random digit dial telephone survey of California households. Logistic regression analysis is utilized to examine factors that predict use of caregiver support services. **Results:** Race and ethnicity do not contribute significantly to caregiver service utilization, when controlling for relevant covarying factors such as age, education, emotional support, family contribution, care recipient service use, and care recipient impairment. A significant interaction exists between ethnicity and family closeness, with reduced rates of service use among Asian and Pacific Island caregivers whose families are brought closer by the caregiving experience. **Discussion:** These findings suggest that racial and ethnic disparities in caregiver service use found at the bivariate level are attributable to covarying predisposing, enabling, and need factors. Further research and theoretical development are suggested to clarify the impact of sociocultural factors on caregiver service use.

**Keywords:** *caregiving; support services; race and ethnicity; culture*

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Substantial concern has been raised regarding the extent to which existing caregiver support programs and services are used by, and meet the needs of, caregivers who are persons of color (Dilworth-Anderson, Williams, & Gibson, 2002; Janevic & Connell, 2001). Caregivers from African American, Latino, Asian, and Pacific Island populations consistently express higher levels of unmet social and mental health care needs than do non-Hispanic White caregivers, as well as a greater need for formal support services (Cox, 1999; Hinrichsen & Ramirez, 1992; Ho, Weitzman, Cui, & Levkoff, 2000; National Alliance for Caregiving and the American Association of Retired Persons [NAC/AARP], 2004; Wallace & Lew-Ting, 1992). This raises questions regarding the accessibility of needed services for these populations. This study examines racial and ethnic variations in caregiver service use as well as factors that might help to explain differential service use patterns.

Existing evidence concerning disparities in service use among racial and ethnic groups is inconclusive. Most studies have reported a lower level of formal service utilization among minority caregivers compared with non-Hispanic White caregivers (Dilworth-Anderson et al., 2002; Dunlop, Manheim, Song, & Chang, 2002; Mausbach et al., 2004; Miller & Guo, 2000; Tennstedt & Chang, 1998; White-Means & Thornton, 1996). Some other studies, however, have reported higher levels of service use among caregivers who are persons of color (Cox, 1996; Logan & Spitze, 1994; Miner, 1995; Schoenberg, Coward, & Dougherty 1998). Still others have found no differences in caregiver service utilization among racial and ethnic groups (Cox, 1999; Haley et al., 1996; Hing & Bloom, 1990). However, most of these studies have utilized convenience samples, and seldom have incorporated multiple racial and ethnic groups.

The Behavioral Model of Health Services Use (Andersen & Newman, 1973) provides a potential framework for understanding differential use of caregiver support services. This model proposes that service utilization is the product of various predisposing, enabling, and need factors. Predisposing variables reflect characteristics that affect an individual's inclination to use health or social services, such as demographic characteristics, social structure, and health beliefs. Even if an individual is predisposed to use a service, certain enabling conditions must exist before the individual has the ability to do so; such enabling conditions include income, social support, and access to services. Finally, an individual must also have a need that requires intervention, such as illness, impairment, or distress (Andersen, 1995). Although the Andersen model was originally developed to predict and explain health service use, it has also been used to predict social service

use. Researchers, for example, have used the Behavioral Model of Health Services Use to predict the use of adult day care (Kosloski & Montgomery, 1994), respite services (Montoro-Rodriguez, Kosloski, & Montgomery, 2003), and other caregiver support services (Gill, Hinrichsen, & DiGiuseppe, 1998; Toseland, McCallion, Gerber, & Banks, 2002).

Several studies have identified particular predisposing, enabling, and need factors that might explain racial and ethnic differences in caregiver and care recipient service use. Some studies have found that predisposing factors such as level of education (Gill et al., 1998; Wallace Williams & Dilworth-Anderson, 2002) or the care recipient's living arrangement (Gill et al., 1998) account for some of the variation in service use by racial and ethnic groups. There also are indications that differential service use may be associated with enabling factors, including the care recipient's prior service use (Wallace, Campbell, & Lew-Ting, 1994), family closeness and family obligation (Bradley et al., 2004; Kosloski, Schaefer, Allwardt, Montgomery, & Karner, 2002), and economic factors (Dunlop et al., 2002), especially receipt of Medicaid (Gill et al., 1998; Wallace et al., 1994). Need factors, such as the care recipient's activities of daily living (ADL) limitations, often have been found to be the strongest predictors of caregiver service use (Gill et al., 1998; Wallace et al., 1994) and may well contribute to racial and ethnic variations in service use.

It seems likely that ethnicity and country of origin might impact service use through differential cultural norms regarding family responsibility and the acceptability of utilizing extrafamilial support services. Several studies have found that Latino cultural values regarding the strength and centrality of family responsibility (Wallace & Lew-Ting, 1992) foster an expectation that family members will assist with the care of older relatives (Clark & Huttlinger, 1998; Cox & Monk, 1993). Similarly, Asian cultural values typically understand the caregiving role in terms of a filial obligation to provide care to older family members, demonstrating respect for the elder's worthiness and authority (Sung, 1998). From these perspectives, caregivers' use of formal services to replace or augment family care may be seen as a failure to fulfill expected family roles or an expression of conflict or discomfort in doing so. Culturally based values such as these may be particularly salient among caregivers who have emigrated to the United States from a country where family norms and societal sanctions are stronger than those found in contemporary America; indeed, this may be one reason why some studies have found that immigrant caregivers provide more assistance than nonimmigrant caregivers (Soskolne, Halevy-Levin, & Cohen, 2007).

Very few previous studies have specifically examined racial and ethnic variations in caregiver service use. Moreover, most of these studies have failed to differentiate caregiver and care recipient service use, making it impossible to distinguish service use specifically by and for caregivers (Dunlop et al., 2002; Gill et al., 1998; Wallace et al., 1994; Wallace Williams & Dilworth-Anderson, 2002). In one of the few studies to examine explicitly the contribution of race and ethnicity to caregiver service use, Kosloski et al. (2002) found that Hispanic caregivers used greater amounts of respite services than did White and African American caregivers, even after controlling for a variety of caregiver attitudes and beliefs about families, help, religion, and service delivery. Because Hispanic caregivers also had the highest reported levels on measures of family values, the authors speculated that family norms could mediate the effect of culture on service use. However, this study only examined service use among caregivers who already were receiving in-home or day respite services, as part of a demonstration program specifically designed to increase access to services among non-White and Hispanic Alzheimer's patients and their caregivers. Moreover, the sample apparently did not include any caregivers of Asian, Pacific Islander, Native Hawaiian, or Native American ethnicity, nor did it examine the potential contribution of immigrant status.

The present study expands upon these previous findings by examining racial and ethnic variations in the use of formal support services among an ethnically diverse sample of family caregivers, including caregivers who had not previously utilized formal services. In particular, we address the following research question: Do racial and ethnic variations in caregiver service use reflect differential caregiver and care recipient characteristics, as represented by predisposing, enabling, and need factors proposed by the Behavioral Model of Health Services Use?

Unlike previous studies, we include a wide array of caregiver services and a highly diverse sample of caregivers, drawn from a random sampling of households in California. California has the largest and most diverse older adult population of any state (U.S. Census Bureau, 2000) as well as a broad array of resources available for caregivers, including 11 regional Caregiver Resource Centers, 54 Alzheimer's Day Care Resource Centers, 75 county-based, publicly funded case management programs, multiple chapters of the Alzheimer's Association, and a broad range of community-based programs provided by religious, social, and health care organizations and private, for-profit service providers (California Association for Adult Day Services [CAADS], 2002; Whittier, Scharlach, & Dal Santo, 2005).

## Methodology

### Procedure

Telephone interviews were conducted between March 28 and August 22, 2002, from the facilities of California State University, San Bernardino's Institute of Applied Research and Policy. The initial sampling frame consisted of a random sample of all telephone numbers for households with phones in California. Interviews were conducted in English or Spanish, and data were collected using computer-assisted telephone interviewing (CATI) equipment and software.

### Sample

Respondents were included in this study if they "currently provide[s] assistance or support to an adult relative or friend age 50 or over who is ill, disabled, or elderly," the same criteria used in previous household surveys of caregivers (NAC/AARP, 1997, 2004). These criteria also are similar to those used by the National Family Caregiver Support Program, which defines a caregiver as "an adult family member, or another individual, who is an informal provider of in-home and community care to an older individual" (Title III-E, 2000). One in six households was found to contain at least one caregiver, comparable to national estimates of caregiver prevalence (NAC/AARP, 2004). Of 8,790 individuals meeting our criteria, 1,643 agreed to participate in the study and completed in-depth telephone interviews. Of these, 1,508 provided their race, ethnicity, and country of origin, and were included in the analyses reported here.

Of those interviewed, 61% were non-Hispanic White, 25% were Latino or Hispanic, 6% were African American, and 5% were Asian, Native Hawaiian, or Pacific Islanders (ANHPI). To help determine whether this sampling distribution reflected systematic bias, we compared the racial and ethnic composition of our sample with general California figures for individuals and households (U.S. Census Bureau, 2005) and with demographic data for adults from the 2005 California Health Interview Survey (UCLA Center for Health Policy Research, 2005). We found that our sample distribution was similar to the California population as a whole and to the adult population of California, except for an overrepresentation of non-Hispanic White respondents and an underrepresentation of ANHPI respondents.

As shown in Table 1, respondents had an average age of 51. Most were female (75%), married or living with a partner (59%), a high school graduate

**Table 1**  
**Racial and Ethnic Variations in Predisposing, Enabling, and Need Characteristics (Percentages)**

Variable	LAT, US born ( <i>n</i> = 233)		LAT, non-US born ( <i>n</i> = 114)		WH ( <i>n</i> = 989)		All ( <i>N</i> = 1,508)		Significance
	AA ( <i>n</i> = 97)	API ( <i>n</i> = 75)	born ( <i>n</i> = 75)	born ( <i>n</i> = 114)	WH ( <i>n</i> = 989)	All ( <i>N</i> = 1,508)	Significance		
Dependent variable formal service use	76.7	57.1	67.1	52.4	71.9	69.3	$\chi^2 = 24.67^{***}$		
Predisposing factor									
Age (mean, in years)	49	45	45	43	54	51	$F = 38.10^{***}$		
Gender (female)	80	73	76	75	74	75	<i>ns</i>		
Education (post high school)	67	81	65	30	74	69	$\chi^2 = 97.85^{***}$		
Marital status (married/partner)	31	61	55	71	60	59	$\chi^2 = 40.94^{***}$		
Children at home	36	41	35	65	24	30	$\chi^2 = 92.76^{***}$		
CG health (good, very good, excellent)	68	73	71	75	81	78	$\chi^2 = 18.64^{**}$		
Spiritual practices (prays/meditates > weekly)	95	77	78	87	77	79	$\chi^2 = 20.04^{***}$		
Relationship to CR (spouse/partner)	9	8	7	10	15	13	$\chi^2 = 16.02^{**}$		
Relationship to CR (child or in-law)	46	79	64	67	54	57	$\chi^2 = 32.14^{***}$		
Living arrangement (lives with CR)	37	52	35	50	31	35	$\chi^2 = 26.64^{***}$		
Enabling factor									
Employed	42	61	58	52	47	50	$\chi^2 = 14.61^{**}$		
Annual income (> \$30,000)	37	73	49	29	72	63	$\chi^2 = 137.81^{***}$		
Emotional support	77	73	79	59	81	78	$\chi^2 = 29.54^{***}$		

(continued)

**Table 1 (continued)**

Variable	AA (n = 97)	API (n = 75)	LAT, US born (n = 233)	LAT, non-US born (n = 114)	WH (n = 989)	All (N = 1,508)	Significance
Family contribution	94	81	88	90	86	87	<i>ns</i>
Family closeness	45	43	40	44	32	36	$\chi^2 = 13.86^{**}$
Family hardship	50	64	65	41	54	55	$\chi^2 = 20.31^{***}$
CR uses formal services	26	22	30	17	33	30	$\chi^2 = 14.41^{**}$
Need factors							
Hours/week assisting CR (mean)	56	46	43	62	37	42	$F = 5.28^{***}$
CR ADL impairment	53	32	42	37	41	41	<i>ns</i>
CR memory impairment	37	31	43	24	37	37	$\chi^2 = 13.20^{**}$
Physical strain	53	60	60	49	55	55	<i>ns</i>
Emotional strain	71	75	78	52	73	72	$\chi^2 = 27.82^{***}$
Financial hardship	57	61	54	43	38	44	$\chi^2 = 63.85^{***}$

Note: AA = African American; API = Asian Pacific Islander; LAT US Born = Hispanic born in the United States; LAT Non-US Born = Hispanic not born in the United States; WH = non-Hispanic White; CG = caregiver; CR = care recipient; ADL = activities of daily living. Significance tests consisted of ANOVA (*F*) and chi-square statistics.

\*\**p* < .01. \*\*\**p* < .001.

(69%), had annual income of at least \$30,000 (63%), and did not have children younger than age 18 living at home (70%). The majority (57%) was caring for a parent or parent-in-law, with 13% caring for a spouse or partner and nearly one-third (30%) providing assistance to other relatives, friends, or neighbors, similar to the relationship distribution found in other surveys of family caregivers (Deimling, Smerglia, & Schaefer, 2001; Gill et al., 1998; Kosloski et al., 2002; NAC/AARP, 2004). Nearly all (97%) of African American and non-Hispanic White respondents were born in the United States, as compared with 67% of Latino/Hispanic respondents and only 34% of ANHPI respondents.

## Measures

The interview included questions reflecting caregiver service use as well as potential contributing factors identified based on the Behavioral Model of Health Services Use (Andersen & Newman, 1973).

*Caregiver service use.* The National Family Caregiver Support Program (NFCSP), created by Congress in the 2000 reauthorization of the Older Americans Act, identifies five support service areas to assist family caregivers: information; assistance in gaining access; education, training, counseling, and support groups; respite care; and other supplemental services. This study expanded and further specified these five service areas to include 11 possible types of caregiver support services (i.e., information about community services, assistance with access, education and training, mental health counseling, spiritual counseling, group support, in-home respite, out-of-home day respite, overnight respite, legal assistance, financial advice). Respondents were asked to indicate whether they had received each of these services in the past year from a community agency or provider organization. Because the distribution of caregiver formal service utilization (CGFSU) was highly skewed, the measure was transformed into a dichotomous variable indicating whether the respondent had utilized at least one formal support service in the past year.

*Predisposing variables.* Predisposing variables included respondent age, gender, race/ethnicity (using U.S. Census 2000 categories), whether the respondent was an immigrant, educational attainment (postsecondary education or training), marital status, primary responsibility for children younger than age 18 living at home, health (good, very good, or excellent),

religious participation (attending religious services at least weekly), spiritual practices (praying or meditating at least weekly), relationship to the care recipient (spouse vs. nonspouse), and care recipient living arrangement (with the caregiver vs. elsewhere). To eliminate potential collinearity risks in the multivariate analysis, the race/ethnicity and immigrant variables were combined for Latino and ANHPI respondents, producing the following combinations: U.S.-born Latinos, foreign-born Latinos, U.S.-born ANHPs, foreign-born ANHPs, African Americans, and non-Hispanic Whites.

*Enabling variables.* Enabling variables included respondent employment status, income (greater than or equal to \$30,000 per year), availability of emotional support (having someone to go to for support and understanding), care recipient use of any community services (e.g., home-delivered meals, adult day care, transportation), family contribution, family closeness, and family hardship. The three family perception variables were assessed with questions adapted from the Cultural Justifications Caregiving Scale (Dilworth-Anderson, 1995). Family contribution was assessed by asking respondents to indicate the extent to which they believed that they were contributing to their family or setting an example for the children in their family (very much, somewhat, just a little, not at all). Family closeness and family hardship were assessed respectively by asking whether the care recipient's need for care had brought their family closer together or been a hardship for their family (very much, somewhat, just a little, not at all). Because the distributions of these variables were highly skewed, responses were dichotomized (very much vs. other responses).

*Need variables.* Need variables included care recipient ADL impairment (whether the care recipient needed help with dressing, eating, bathing or getting to the bathroom), care recipient cognitive impairment (severe memory problems or dementia), hours of care per week provided by the caregiver, and whether or not the caregiver experienced any physical strain, emotional distress, or financial hardship.

## Analyses

Chi-square, ANOVA, and *t* tests were conducted to examine bivariate differences in caregiver service use and bivariate differences by race and ethnicity, with respect to each of the potential predisposing, enabling, and

need variables. Odds ratios were computed for differences in caregiver service use by race and ethnicity combined with immigrant status.

To examine potential predictors of formal service use by caregivers, a logistic regression was conducted, including only those variables found to be significant correlates of caregiver service use at the bivariate level. An interaction term was included in the regression model to examine the potential differential contribution of family closeness by race/ethnicity/immigrant. Variables were entered into the regression analysis in five blocks: race/ethnicity/immigrant, predisposing variables, enabling variables, need variables, and interaction terms.

## Results

### Racial and Ethnic Variations in Service Use

Formal caregiver service utilization differed significantly by race, ethnicity, and immigrant status, as shown in Table 1. African American, non-Hispanic White, and U.S.-born Latino respondents were significantly more likely to use caregiver services than were their ANHPI or foreign-born Latino counterparts ( $\chi^2 = 24.7, p < .001$ ). Odds ratios indicated that Latino caregivers born in the United States were 1.9 times as likely to use caregiver services as those who were foreign-born ( $\chi^2 = 6.5, p \leq .01$ ). African Americans were three times as likely as foreign-born Latinos to use services ( $\chi^2 = 12.4, p \leq .001$ ), and non-Hispanic White respondents were 2.3 times as likely as foreign-born Latinos to use services ( $\chi^2 = 17.1, p \leq .001$ ). Neither African American nor non-Hispanic White respondents were significantly more likely to use caregiver services than were U.S.-born Latinos. Service use among ANHPI caregivers did not differ significantly by immigrant status; therefore, the two groups of ANHPI respondents were combined for all analyses.

### Racial and Ethnic Variations in Predisposing, Enabling, and Need Factors

Racial/ethnic/immigrant variations were found with regard to the following predisposing characteristics: age, education level, marital status, children in the home, self-reported health, spiritual practices, caregiver-care recipient relationship, and care recipient's living arrangement (see Table 1). Non-Hispanic White caregivers tended to be significantly older than caregivers

who were persons of color ( $F = 38.1, p \leq .001$ ). ANHPI were most likely, and Latinos (U.S. and non-U.S. born) least likely, to have obtained education or training following high school graduation ( $\chi^2 = 97.9, p \leq .001$ ). ANHPI and non-Hispanic Whites were most likely, and African Americans least likely, to be married ( $\chi^2 = 40.9, p \leq .001$ ). Latinos born outside the United States were most likely, and non-Hispanic Whites least likely, to have children in the home for whom they were responsible ( $\chi^2 = 92.8, p \leq .001$ ). African Americans were most likely to pray or meditate at least weekly ( $\chi^2 = 20.0, p \leq .001$ ), followed by Latino caregivers not born in the United States. Non-Hispanic White caregivers were most likely to be caring for a spouse or partner ( $\chi^2 = 16.0, p \leq .01$ ), whereas ANHPI caregivers were most likely to be caring for a parent or parent-in-law ( $\chi^2 = 32.1, p \leq .001$ ). ANHPI and foreign-born Latinos were most likely to be living with their care recipient ( $\chi^2 = 26.6, p \leq .001$ ).

Enabling factors differed significantly by caregiver race/ethnicity/immigrant status with regard to employment, income, emotional support, family closeness, family hardship, and care recipient use of formal services. ANHPI caregivers were most likely, and African Americans least likely, to be employed ( $\chi^2 = 14.6, p \leq .01$ ). ANHPI caregivers and non-Hispanic Whites were more likely than African Americans and Latinos (U.S. and non-U.S. born) to have annual household incomes of \$30,000 or more ( $\chi^2 = 137.8, p < .001$ ). Among all groups, Latino caregivers not born in the United States were least likely to have emotional support available to them ( $\chi^2 = 29.5, p \leq .001$ ). Non-Hispanic White caregivers were least likely to say that the care recipient's illness had brought their family closer ( $\chi^2 = 13.9, p \leq .01$ ), whereas Latino caregivers born in the United States were most likely to report family hardship as a result of the caregiving situation ( $\chi^2 = 20.3, p \leq .001$ ). Foreign-born Latinos were least likely to have care recipients who were using formal services ( $\chi^2 = 14.4, p \leq .01$ ).

The need factors found to have significant variations by race/ethnicity/immigrant status were hours per week providing care, care recipient memory impairment, caregiver emotional strain, and financial hardship. Latino caregivers not born in the United States provided the greatest number of hours of care each week, and non-Hispanic White caregivers the least ( $F = 5.28, p < .001$ ). U.S.-born Latinos were most likely, and foreign-born Latinos least likely, to be caring for someone with memory problems ( $\chi^2 = 13.2, p \leq .01$ ) and to be experiencing emotional strain ( $\chi^2 = 27.8, p \leq .001$ ). ANHPI caregivers were most likely, and non-Hispanic White caregivers least likely, to experience financial hardship ( $\chi^2 = 63.85, p \leq .001$ ).

## Predisposing, Enabling, and Need Factors in Service Use

*Predisposing factors.* Predisposing factors found to be associated significantly with formal service use at the bivariate level included age, education level, and spiritual practices. Respondents were more likely to have used formal caregiver services in the past year if they were older ( $t = 2.43$ ,  $p < .05$ ), had completed high school ( $\chi^2 = 30.9$ ,  $p < .001$ ), and participated in spiritual practices (i.e., prayer or meditation) at least weekly ( $\chi^2 = 4.58$ ,  $p < .05$ ).

*Enabling factors.* The only enabling factors associated with caregiver service use at the bivariate level were emotional support, family contribution, and care recipient service use. Respondents who had used caregiver support services were more likely than nonusers to report having someone to go to for support and understanding ( $\chi^2 = 12.84$ ,  $p < .001$ ), contributing very much to their family ( $\chi^2 = 9.76$ ,  $p < .01$ ), and assisting care recipients who themselves had used formal community services such as home-delivered meals and adult day services ( $\chi^2 = 30.19$ ,  $p < .001$ ).

*Need factors.* Respondents who had used caregiver support services were more likely to be caring for a care recipient who needed help with personal care ( $\chi^2 = 30.26$ ,  $p < .001$ ) or had memory problems or dementia ( $\chi^2 = 6.35$ ,  $p < .01$ ), and they were more likely to report physical strain ( $\chi^2 = 9.06$ ,  $p < .01$ ) or emotional distress ( $\chi^2 = 9.46$ ,  $p < .01$ ).

## Multivariate Analyses

A logistic regression was conducted to examine factors predicting caregiver formal service use (see Table 2). In addition to variables found to be significantly associated with caregiver service use at the bivariate level, we included an interaction term reflecting the potential differential contribution of family closeness by race/ethnicity/immigrant status. Variables were entered in the order presented in Table 2. Results demonstrated that race and ethnicity no longer made a significant direct contribution to formal service use when included in the regression model with other predisposing, enabling, need, and interaction variables.

Predisposing variables that significantly predicted formal service use were caregiver age,  $\text{Exp}(B) = 1.01$ ,  $p < .05$ , and caregiver education,  $\text{Exp}(B) = 1.78$ ,  $p < .001$ ; these explained 6.7% of the variance in service use. Among

**Table 2**  
**Logistic Regression of Formal Service Utilization ( $n = 1,055$ )**

Independent Variables (by block)	Block 1: Race/ Ethnicity/ Immigrant		Block 2: Predisposing		Block 3: Enabling		Block 4: Need		Block 5: Interactions		
	<i>B</i>	<i>(SE)</i>	<i>B</i>	<i>(SE)</i>	<i>B</i>	<i>(SE)</i>	<i>B</i>	<i>(SE)</i>	<i>B</i>	<i>(SE)</i>	<i>Exp(B)</i>
Race/ethnicity/country of origin											
ANHPI <sup>a</sup>	-.850	(.283)**	-.798	(.291)**	-.627	(.299)*	-.635	(.303)*	.005	(.419)	1.01
Hispanic, born in U.S. <sup>a</sup>	-.177	(.177)	-.023	(.188)	-.010	(.191)	-.035	(.194)	-.111	(.241)	.89
Hispanic, not born in U.S. <sup>a</sup>	-.865	(.223)***	-.530	(.241)*	-.382	(.251)	-.363	(.255)	-.456	(.331)	.63
African American <sup>a</sup>	.172	(.294)	.272	(.304)	.298	(.309)	.225	(.318)	.793	(.479)	2.21
Predisposing variables											
More than high school education	.610	(.146)***	.610	(.146)***	.565	(.149)***	.580	(.152)***	.577	(.153)***	1.78
CG age	.010	(.005)*	.010	(.005)*	.012	(.005)**	.010	(.005)*	.010	(.005)*	1.01
Meditates or prays at least weekly	.405	(.164)**	.405	(.164)**	.326	(.169)*	.312	(.172)	.324	(.173)	1.38
Enabling variable											
Emotional support					.357	(.168)*	.376	(.170)*	.396	(.172)*	1.49
Family contribution					.629	(.203)**	.602	(.207)**	.602	(.208)**	1.83
CR service use					.801	(.164)***	.749	(.167)***	.730	(.168)***	2.08
Family closer					-.080	(.146)	-.086	(.148)	-.019	(.195)	1.02
Need variables											
CR needs ADL help							.699	(.153)***	.694	(.155)***	2.00
CR memory problems							-.032	(.155)	-.048	(.156)	.953

(continued)

**Table 2 (continued)**

Independent Variables (by block)	Block 1: Race/ Ethnicity/ Immigrant	Block 2: Predisposing	Block 3: Enabling	Block 4: Need	Block 5: Interactions
	<i>B (SE)</i>	<i>B (SE)</i>	<i>B (SE)</i>	<i>B (SE)</i>	<i>B (SE)</i> <i>Exp(B)</i>
Physical strain				.078 (.160)	.134 (.162)
Emotional strain				.123 (.172)	.086 (.174)
Interactions					
Family Closer × ANHPI <sup>a</sup>					-1.465 (.634)*
Family Closer × African American <sup>a</sup>					-1.157 (.649)
Family Closer × Lat (US Born) <sup>a</sup>					.172 (.389)
Family Closer × Lat (non-US Born) <sup>a</sup>					.148 (.475)
Intercept	.886 (.086)***	-.423 (.314)	-1.437 (.385)***	-1.714 (.399)***	-1.760 (.402)***
Model fitting statistics					
Model block comparisons	$\chi^2 = 22.9$ ***	$\chi^2 = 28.9$ ***	$\chi^2 = 41.3$ ***	$\chi^2 = 26.6$ ***	$\chi^2 = 9.6$ *
Test of coefficients and <i>R</i> square	$R^2 = .030$	$R^2 = .067$	$R^2 = .118$	$R^2 = .150$	$R^2 = .161$
Goodness-of-fit chi-square <sup>b</sup>	0 ( $p > .05$ )	12.99 ( $p > .05$ )	13.9 ( $p > .05$ )	9.80 ( $p > .05$ )	13.7 ( $p > .05$ )

Note: ANHPI = Asian, Native Hawaiian, or Pacific Islanders; CG = caregiver; CR = care recipient; ADL = activities of daily living; LAT (US Born) = Hispanic born in the United States; LAT (Non-US Born) = Hispanic not born in the United States.

a. Reference group: non-Hispanic White.

b. Hosmer and Lemeshow Test.

\* $p \leq .05$ . \*\* $p \leq .01$ . \*\*\* $p \leq .001$ .

enabling variables, significant predictors included availability of emotional support,  $\text{Exp}(B) = 1.49$ ,  $p < .05$ , perceived contributions to the family,  $\text{Exp}(B) = 1.83$ ,  $p < .01$ , and care recipient use of community services,  $\text{Exp}(B) = 2.08$ ,  $p < .001$ ; these explained an additional 5.1% of the variance in service use. The only need variable that contributed significantly to formal service use was care recipient ADL impairment,  $\text{Exp}(B) = 2.0$ ,  $p < .001$ , explaining 3.2% of the variance. The interaction between being ANHPI and perceiving that the care situation had brought the family closer together contributed significantly to decreased likelihood of formal service use,  $\text{Exp}(B) = 0.231$ ,  $p < .05$ , explaining an additional 1.1% of the variance in service use. The complete model accounted for 16.1% of the variance.

## Discussion

This study expands existing knowledge regarding racial and ethnic variations in caregiver service use by elucidating some of the factors that differentially affect use of support services by caregivers from diverse racial and ethnic groups. Like previous studies, we found significant racial and ethnic differences at the bivariate level, with African American and non-Hispanic White caregivers significantly more likely to be using formal caregiver services than were ANHPI caregivers or immigrant Latino caregivers. However, in a logistic regression model with other predisposing, enabling, and need variables, race, ethnicity, and immigrant status no longer were found to have a significant main effect on formal service use.

These findings suggest that the direct impact of race and ethnicity on caregiver service use is relatively limited. Previous studies that have found significant racial or ethnic differences have been based on nonrepresentative samples of service users, rather than the randomly selected household sample of users and nonusers included here. Most of these previous studies have examined care-recipient service use, which may be more subject to cultural norms and beliefs about familial obligation than is caregiver service use. Seeking outside assistance for a disabled parent or spouse might be viewed as a failure to fulfill one's family responsibility, whereas seeking services for oneself may be considered a more private act, which does not necessarily violate cultural norms.

Racial and ethnic variations in caregiver service use found at the bivariate level appear to be attributable to a number of covarying characteristics, including predisposing factors such as caregiver age and education; enabling factors such as emotional support, perceived family contribution, and care recipient service use; and need factors such as care recipient impairment.

Help-seeking may be more prevalent among older caregivers as a result of their increased physical and social vulnerability, whereas caregivers with fewer years of education may have a more limited ability to access and utilize written information about available services as well as more difficulty in acquiring new knowledge and information (Gill et al., 1998; Wallace Williams & Dilworth-Anderson, 2002). Caregiver emotional support and care recipient use of community services may serve as potential pathways to caregiver services by providing information about and assistance in accessing those services. Lack of emotional support, on the other hand, may reflect social isolation as well as cultural norms regarding the legitimacy of seeking extrafamilial assistance for personal problems (Wallace et al., 1994). Caregivers who believe that they are making particularly great contributions to their families may have more intense care situations or may be especially conscious of their personal role contributions, resulting in a greater likelihood of seeking external supports. Care recipient ADL limitations are apt to intensify directly and indirectly the demands on caregivers' time and energy, increasing the caregivers' need for outside assistance (Gill et al., 1998; Wallace et al., 1994).

Ethnicity impacted caregiver service use only through its interaction with perceived family behavior. Reduced rates of caregiver service use were found for ANHPI caregivers whose families were brought closer by the caregiving experience. These caregivers are apt to have more traditional cultural norms about familial responsibility, and may belong to families that actively demonstrate allegiance to those norms through their family solidarity at a time of illness. Moreover, family closeness and mutual involvement may make it more difficult for caregivers to seek outside services without the awareness of other family members. These findings echo other studies that have suggested that family closeness and social norms might impact service use directly and indirectly (Bradley et al., 2004; Kosloski et al., 2002), while extending these previous analyses by providing empirical evidence of the potential mediating effect of family behavior on racial and ethnic variations in caregiver service use.

## **Implications for Theory and Research**

The Behavioral Model of Health Services Use (Andersen & Newman, 1973) served as a useful framework for examining potential contributors to differential rates of caregiver service use in this study. However, as has been observed in other studies of aging-related social services, the Behavioral Model accounted for only a modest percentage of the overall variance (Gill

et al., 1998; Kosloski & Montgomery, 1994; Montoro-Rodriguez et al., 2003), raising questions about the adequacy of the model for predicting use of caregiver support services. The Andersen-Newman model also has been criticized for its focus on seemingly immutable characteristics of the individual service user, such as demographic characteristics and need variables (Montoro-Rodriguez et al., 2003), and its failure to take into account the potential mediating effect of factors related to families, social networks, and organizational systems (Mui & Burnette, 1994). As this study shows, family behavior has a potential effect on ethnic variations in caregiver service use, specifically for ANHPI caregivers, a finding not explained by the original Behavioral Model.

Social and cultural factors not typically included in multivariate models such as the Behavioral Model of Health Services Use may be especially salient in understanding social service use among racially and ethnically diverse populations (Bradley et al., 2004). Dilworth-Anderson and her colleagues have identified three cultural factors likely to affect caregiver service use: (a) feelings of shame regarding the inability to fulfill traditional expectations may limit outside contact and service use; (b) familial obligation norms may proscribe seeking assistance from outsiders; and (c) caregiver services may not be perceived to be culturally sensitive (Dilworth-Anderson et al., 2002).

### **Implications for Service Providers**

Lower service use, especially among immigrant Latino caregivers, seems to be associated in part with characteristics that restrict service access, including social isolation, lack of education, and their care recipients' lack of involvement in the home and community-based service system. These findings suggest that area agencies on aging and other caregiver support providers should develop more assertive outreach programs for immigrant caregivers and others who are not already connected with the caregiver support system, including promotional efforts that contain linguistically appropriate and culturally sensitive information regarding available services. In addition, consideration should be given to family-oriented approaches that respond to the mutual needs of caregivers and care recipients, including policy and programmatic changes in the National Family Caregiver Support Program so that caregiver services can be better integrated with care recipient services provided through other community-based long-term care programs (Scharlach et al., 2006).

Strategies that have proven effective in recruiting and serving racially and ethnically diverse caregivers include involving indigenous community

leaders in helping to plan services and recruit caregivers, hiring staff with the same cultural background as clients, and tailoring intervention content to the norms and expectations of particular racial and ethnic groups (Gallagher-Thompson et al., 2003). Indeed, Kosloski and his colleagues found relatively high levels of service use by Latino caregivers when programs were designed specifically to increase access for minority caregivers (Kosloski et al., 2002). Similarly, Latino caregivers, many of whom have not completed high school or college, have found a graduation ceremony marking the completion of their training in a support group very meaningful, whereas non-Hispanic White participants reported this was a low priority (Gallagher-Thompson et al., 2003). These examples highlight the need for service providers to develop cultural competence in all aspects of caregiver services, from design and recruitment to implementation and termination.

## Conclusion

This exploratory study has provided important new evidence that racial and ethnic disparities in caregiver service may be attributable to covarying predisposing, enabling, and need factors. Although the random sampling method used in this study allowed us to examine patterns of service use as well as nonuse among ethnic groups not typically included in previous studies, generalization is limited somewhat by the underrepresentation of Asian caregivers and reliance on restricted measures of cultural norms, caregiver well-being, and care recipient impairment.

Further research is needed regarding the ways in which cultural values affect the caregiving experience, especially among immigrants. Qualitative approaches may be particularly helpful in explicating caregiving processes among various racial and ethnic groups, including the ways in which culture affects decisions about the types of assistance caregivers seek and the sources from which assistance can be obtained. The resulting knowledge can facilitate policy development and program implementation that are responsive to the needs of an increasingly diverse caregiver population.

## References

- Andersen, R. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, 36, 1-10.
- Andersen, R., & Newman, J. F. (1973). Societal and individual determinants of medical care utilization in the United States. *Milbank Memorial Fund Quarterly*, 51, 95-124.

- Bradley, E., Curry, L., McGraw, S., Webster, T., Kasl, S., & Andersen, R. (2004). Intended use of informal long-term care: The role of race and ethnicity. *Ethnicity & Health, 9*, 37-54.
- California Association for Adult Day Services (CAADS). (2002). *California long term care county data book, 2002*. Sacramento, CA: Author.
- Clark, M., & Huttlinger, K. (1998). Elder care among Mexican American families. *Clinical Nursing Research, 7*, 64-81.
- Cox, C. B. (1996). Discharge planning for dementia patients: Factors influencing caregiver decisions and satisfaction. *Health & Social Work, 21*, 97-104.
- Cox, C. (1999). Race and caregiving: Patterns of service use by African-American and non-Hispanic White caregivers of persons with Alzheimer's disease. *Journal of Gerontological Social Work, 32*, 5-19.
- Cox, C., & Monk, A. (1993). Hispanic culture and family care of Alzheimer's patients. *Health & Social Work, 18*, 92-100.
- Deimling, G. T., Smerglia, V. L., & Schaeffer, M. L. (2001). The impact of family environment and decision-making satisfaction on caregiver depression: A path analytic model. *Journal of Aging and Health, 13*, 47-71.
- Dilworth-Anderson, P. (1995). *Cultural justification caregiving scale*. Unpublished measure.
- Dilworth-Anderson, P., Williams, I. C., & Gibson, B. E. (2002). Issues of race, ethnicity, and culture in caregiving research: A 20-year review (1980-2000). *The Gerontologist, 42*, 237-272.
- Dunlop, D., Manheim, L., Song, J., & Chang, R. (2002). Gender and ethnic/racial disparities in health care utilization among older adults. *Journals of Gerontology: Social Sciences, 57B*, S221-S233.
- Gallagher-Thompson, D., Haley, W., Guy, D., Rupert, M., Arguelles, T., Zeiss, L. M., et al. (2003). Tailoring psychological interventions for ethnically diverse dementia caregivers. *Clinical Psychology: Science and Practice, 10*, 423-438.
- Gill, C., Hinrichsen, G., & DiGiuseppe, R. (1998). Factors associated with formal service use by family members of patients with dementia. *The Journal of Applied Gerontology, 17*, 38-52.
- Haley, W. E., Roth, D. L., Coleton, M. I., Ford, G. R., West, C. A. C, et al. (1996). Appraisal, coping, and social support as mediators of well-being in Black and Non-Hispanic White family caregivers of patients with Alzheimer's disease. *Journal of Consulting and Clinical Psychology, 64*, 121-129.
- Hing, E., & Bloom, B. (1990). Long-term care for functionally dependent elderly. *Vital & Health Statistics, 13*, 1-50.
- Hinrichsen, G. A., & Ramirez, M. (1992). Black and Non-Hispanic White dementia caregivers: A comparison of their adaptation, adjustment, and service utilization. *Gerontologist, 32*, 375-381.
- Ho, C. J., Weitzman, P. F., Cui, X., & Levkoff, S. E. (2000). Stress and service use among minority caregivers to elders with dementia. *Journal of Gerontological Social Work, 33*, 67-88.
- Janevic, M. R., & Connell, C. M. (2001). Racial, ethnic, and cultural differences in the dementia caregiving experience: Recent findings. *Gerontologist, 41*, 334-347.
- Kosloski, K., & Montgomery, R. (1994). Investigating patterns of service use by families providing care for dependent elders. *Journal of Aging and Health, 6*, 17-37.
- Kosloski, K., Schaefer, J., Allwardt, D., Montgomery, R., & Karner, T. (2002). The role of cultural factors on clients' attitudes toward caregiving, perception of service delivery, and service utilization. *Home Health Care Services Quarterly, 21*, 65-88.
- Logan, J. R., & Spitze, G. (1994). Informal support and the use of formal services by older Americans. *Journals of Gerontology, 49*, S25-S34.

- Mausbach, B. T., Coon, D. W., Depp, C., Rabinowitz, Y. G., Wilson-Arias, E., Kraemer, H. C., et al. (2004). Ethnicity and time to institutionalization of dementia patients: A comparison of Latina and Caucasian female family caregivers. *Journal of the American Geriatrics Society, 57*, 1077-1084.
- Miller, B., & Guo, S. (2000). Social support for spouse caregivers of persons with dementia. *Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 55B*, S163-S172.
- Miner, S. (1995). Racial differences in family support and formal service utilization among older persons: A nonrecursive model. *Journal of Gerontology: Social Sciences, 50B*, S143-S153.
- Montoro-Rodriguez, J., Kosloski, K., & Montgomery, R. (2003). Evaluating a practice-oriented service model to increase the use of respite services among minorities and rural caregivers. *The Gerontologist, 43*, 916-924.
- Mui, A., & Burnette, D. (1994). Long-term care service use by frail elders: Is ethnicity a factor? *The Gerontologist, 34*, 190-198.
- National Alliance for Caregiving and the American Association of Retired Persons (NAC/AARP). (1997). *Family caregiving in the U.S.: Findings from a national survey*. Retrieved on February 27, 2007, from <http://www.caregiving.org/data/Family%20Caregiving%20in%20the%20US.pdf>
- National Alliance for Caregiving and the American Association of Retired Persons (NAC/AARP). (2004). *Caregiving in the U.S.* Retrieved on January 24, 2007, from <http://www.caregiving.org/data/04finalreport.pdf>
- Scharlach, A., Kellam, R., Ong, N., Baskin, A., Goldstein, C., & Fox, P. (2006). Cultural attitudes and caregiver service use: Lessons from focus groups with racially and ethnically diverse family caregivers. *Journal of Gerontological Social Work, 47*, 133-156.
- Schoenberg, N. E., Coward, R. T., & Dougherty, M. C. (1998). Perceptions of community-based services among African American and Non-Hispanic White elders. *Journal of Applied Gerontology, 17*, 67-78.
- Soskolne, V., Halevy-Levin, S., & Cohen, A. (2007). The socio-cultural context of family caregiving and psychological distress: A comparison of immigrant and non-immigrant caregivers in Israel. *Aging & Mental Health, 11*, 3-13.
- Sung, K. (1998). Filial piety in modern times: Timely adaptation and practice patterns. *Australasian Journal on Ageing, 17*, 88-92.
- Tennstedt, S., & Chang, B.-H. (1998). The relative contribution of ethnicity versus socioeconomic status in explaining differences in disability and receipt of informal care. *Journal of Gerontology: Social Sciences, 53B*, S61-S70.
- Title III-E (The National Family Caregiver Support Program). (2000). *Older Americans Act Amendments of 2000*. Administration on Aging, Department of Health & Human Services.
- Toseland, R., McCallion, P., Gerber, T., & Banks, S. (2002). Predictors of health and human services use by persons with dementia and their caregivers. *Social Science and Medicine, 55*, 1255-1266.
- UCLA Center for Health Policy Research. (2005). *California Health Interview Survey*. Available from [http://www.chis.ucla.edu/data\\_main.html](http://www.chis.ucla.edu/data_main.html)
- U.S. Census Bureau. (2000). *United States Census 2000*. Retrieved on February 28, 2007, from <http://www.census.gov/main/www/cen2000.html>
- U.S. Census Bureau. (2005). *California quick facts from the U.S. Census Bureau*. Retrieved on April 4, 2007, from <http://quickfacts.census.gov/qfd/states/06000.html>
- Wallace, S., Campbell, K., & Lew-Ting, C. (1994). Structural barriers to the use of formal in-home services by elderly Latinos. *Journals of Gerontology: Social Sciences, 49*, S253-S264.

- Wallace, S. P., & Lew-Ting, C. (1992). Getting by at home: Community-based long-term care of Latino elders. *Western Journal of Medicine, 157*, 337-344.
- Wallace Williams, S., & Dilworth-Anderson, P. (2002). Systems of social support in families who care for dependent African American elders. *The Gerontologist, 42*, 224-236.
- White-Means, S. I., & Thornton, M. C. (1996). Well-being among caregivers of indigent Black elderly. *Journal of Comparative Family Studies, 27*, 109-128.
- Whittier, S., Scharlach, A., & Dal Santo, T. (2005). Availability of caregiver support services: Implications for implementation of the National Family Caregiver Support Program. *Journal of Aging and Social Policy, 17*, 45-62.