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UTILIZATION OF ALZHEIMER'S DISEASE COMMUNITY RESOURCES BY ASIAN-AMERICANS IN CALIFORNIA

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Abstract

Alzheimer's disease is as prevalent among Asian ethnic minority groups as among Caucasians. We explored Asian groups' utilization of available Alzheimer's disease services in California, using a uniquely large sample of Asian-Americans.

The Minimum Uniform Dataset includes data from nine California Alzheimer's Disease Diagnostic and Treatment Centers. Of the 9451 cases included in the Minimum Utilizable Dataset, 4.2% were Asian (primarily Chinese), 0.8% Filipino, 0.3% Pacific Islander, and 75.9% Caucasian. In comparison to their numbers within the nine California counties served, Asian ethnic elders were underrepresented in enrollment by approximately 50%, except at one center where all staff were bilingual. The centers referred a significantly greater proportion of Asian than Caucasian patients for financial help (47.8 vs. 7.4%, $P < 0.001$), case management (47.8 vs. 22.3%, $P < 0.001$), and to Alzheimer's disease day care (41.3 vs. 28.4%, $P < 0.05$). A significantly greater proportion of Asian caregivers received referrals to caregiver resource centers (32.6 vs. 61.3%, $P < 0.001$) and financial help (29.6 vs. 4.7%, $P < 0.001$). A smaller proportion of Asian patients received referrals to home health care services than Caucasians (4.3 vs. 14.9%, $P < 0.05$). Filipino patients were also referred more frequently to financial assistance than Caucasians ($P < 0.05$).

Asians and Pacific Islanders under-enroll at centers specializing in AD care. Bilingual staff at centers specializing in dementia care, training for community physicians who treat these patients, and establishment of caregiver support groups within Asian and Pacific Islander communities may

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enhance the enrollment of these elders. AD care centers in areas supporting Asian and Filipino families may need to concentrate resources on providing financial assistance in case management.

Keywords

Alzheimer's disease; Asian-Pacific Islander; caregiver; dementia; ethnicity; resource utilization; vascular dementia

INTRODUCTION

By the year 2020, 40% of the elderly US population will be non-Caucasian, (California Department of Finance, 1988). The fastest growing non-Caucasian ethnic group is Asian-Pacific Islander (Fawcett and Carino, 1987), which includes Chinese, Japanese, Korean, South-East Asians, Filipinos and Pacific Islanders. California has the highest proportion of Asian-American residents in the United States (US Department of Commerce Economics and Statistics Administration, 1993; Yeo et al., 1996). Given this impending growth in the Asian-American population and the consequent increase in the number of patients with dementia, health care professionals will address cultural differences in approaches to dementia care among the Asian-American population.

The prevalence of dementia among the general American population over age 65 has been reported as 6.5% (Cross and Gurland, 1986). There is evidence that dementia prevalence is similar between Chinese and Caucasian elderly (Zhang et al., 1990; Ikels, 1991; Chiu *et al.*, 1998; Gurland et al., 1999), and there is no significant difference in dementia prevalence between the Chinese in Taiwan and in mainland China (Yeh et al., 1994).

The most common cause of dementia among the elderly is Alzheimer's disease (AD). Alzheimer's disease patients and their families often require assistance beyond a medical evaluation and pharmacotherapy. There are multiple psychosocial and financial stressors spanning the duration of illness, which can extend to a mean of 13 years. Centers specializing in dementia diagnosis can facilitate patient and caregiver enrollment in dementia support resources such as caregiver support groups, respite care, day care centers, and home health services. Such interventions reduce caregiver distress, allow patients to remain at home longer, and reduce direct costs of AD patient care (Mittelman et al., 1996).

A preliminary review of ethnic minorities receiving services at California's Alzheimer's Disease Diagnosis and Treatment Centers (ADDTCs) suggested that these centers are currently underutilized by Asian ethnic minority groups in California (Hart et al., 1996). As with other mental disorders, dementia and AD are subject to different cultural beliefs about what constitutes a disease process. Because it is a slowly progressive disease marked by memory impairment in the aging, AD is often regarded as part of the normal aging process in Asian cultures. Respect for elders and parents, as well as stigmatization of mental illness in Asian cultures, may keep caregivers from reporting symptoms of AD as abnormalities to their physicians or admitting to the presence of the disease by enrolling at a center specializing in AD (Kitano, 1969; Wu, 1975; Kim et al., 1989; Li, 1997; Lin and Fabrega, 1997; Kao and Stuifbergen, 1999). The sense of obligation to elder family members can

create a barrier to seeking assistance when Asian families feel they must care for dementing elders in the privacy of their own homes (Wu, 1975; Li, 1997). Language barriers to medical evaluation in older Asians who are not competent in English must also be considered. Asian beliefs about normal aging may cloud the diagnosis of AD and impede enrollment of these patients in services designed to help them and their families.

The purpose of this study was to test the hypotheses that (1) Asian American groups under-enroll at AD care centers and (2) those patients who do participate have different needs from the mainstream Caucasian American group of patients, as reflected in referrals generated by the centers. We wished to explore utilization patterns that may be unique to demented Asian patients and their caregivers, in order to understand how AD care centers in Asian communities may concentrate their efforts to meet these needs.

METHODS

Design and procedures

Since 1984, the California Department of Health Services has established nine ADDTCs to offer comprehensive assessment, diagnosis, treatment, support, education, and research opportunities to persons affected by AD and related disorders. The ADDTCs are state-funded, university-based, multidisciplinary clinics that specialize in the evaluation of patients with possible progressive cognitive impairment. Data on each patient-caregiver dyad evaluated at an ADDTC are compiled into the Minimum Uniform Dataset (MUDS).

The data were collected by neurologists, psychiatrists, neuropsychologists, nurses and social workers during baseline evaluations at ADDTCs; one-year reassessment visits took place at the ADDTCs and at patients' residences. The ADDTCs evaluate each patient using a comprehensive evaluation that includes a physical examination, lab tests, neuroimaging tests, and a comprehensive neuropsychological assessment. Neuropsychological assessment at seven of the nine centers relied upon the patient's English-speaking ability. At these centers, non-English-speaking Asian patients were excluded from the dataset. The other two centers had bilingual staff. The data include demographics; physical, neurologic, and psychiatric symptom lists; medical history; medication lists; results of previous dementia evaluations; neurological and psychiatric diagnoses; and usage of patient and caregiver resources. Contributors to the MUDS have a comprehensive manual to guide them and receive training in data collection methodology (Institute for Health and Aging, 1988). Inter-rater reliability for the dementia diagnoses has been explored by Chui *et al.* (2000).

The examiners asked patients to categorize themselves into the following ethnic groups: Caucasian, African-American, Hispanic, American Indian or Alaska Native, Filipino, Pacific Islander, Other, Not Determined, and Asian. The Asian group was composed primarily of Chinese, but included Japanese, Korean, and Southeast Asian patients. Patients from other ethnic groups in the MUDS are described elsewhere (Bohnsted et al., 1994; Hart et al., 1996; Hargrave et al., 1998). Patients were diagnosed with possible or probable AD using National Institute of Neurological and Communicative Disorders and Stroke and the Alzheimer's Disease and Related Disorders Association criteria and vascular dementia (VaD) based on

the criteria for ischemia vascular dementia proposed by the California ADDTCs (Chui et al., 1992).

Sample

Of the 9451 cases given baseline evaluations in the MUDS (versions 1988, 1993, and 1995), 5.2% ($N = 487$) consisted of patients who identified themselves as Asian, Filipino or Pacific Islander. The majority (75.9%) of patients seen at the ADDTCs were Caucasian. The Pacific Islander group consisted of only 20 subjects and could not be included in statistical analysis. All patients were older adults.

Complete one-year reassessment data on referrals and services received were most consistently available for patients enrolled in the 1993 and 1995 versions of the MUDS. The sub-sample included 46 Asians, 12 Filipinos, 2 Pacific Islanders, and 864 Caucasians.

Measures

Comparisons at baseline: Student's *t*-test was used to test for statistically different mean ages at dementia symptom onset, levels of education, and MMSE scores among three of the ethnic groups presenting for baseline evaluation. Ethnic differences in income brackets, reason for presentation at the ADDTC, referral sources, clinical manifestations of dementia, and prior support resource utilization were determined by chi-squared testing applied between each non-Caucasian group and the Caucasian group. The frequency of patient enrollment in the ADDTCs for baseline evaluations was compared to the prevalence of elders from each ethnic group in the corresponding county by chi-squared testing.

Comparisons at reassessment: analysis of covariance showed that the demographics for this sub-sample of patients presenting for one-year reassessment did not differ significantly from the larger group with baseline evaluations. We used chi-squared testing to compare proportions of patients and caregivers referred to support services at the baseline visit, as well as percentages of referrals followed in the ensuing 12 months by ethnicity.

RESULTS

Baseline evaluations

Demented patients from the Caucasian and Asian groups who presented to the ADDTCs did not differ significantly in gender distribution, mean age at dementia symptom onset, mean level of education, or mean MMSE score (see Table 1). Figure 1 shows combined patient and spouse income levels for each of the groups. The distributions for the Asian and Filipino groups reflected significantly lower income levels than the Caucasian group ($P < 0.001$). This correlates with the finding that a higher proportion of Asian and Filipino patients and caregivers were referred for financial assistance (see below).

Reasons for referral to the ADDTC for baseline evaluation differed significantly among the ethnic groups (see Table 2). For all patients in the sample, the most common reason for seeking dementia evaluation was memory loss. Asian patients presented more frequently than Caucasian patients for specific suspicion of AD ($P < 0.05$), but were significantly less likely to be seeking a second opinion on dementia diagnosis than Caucasian patients ($P <$

0.001). More than one reason for referral was listed in many cases. Family members and physicians were the most common sources of referral in all of the ethnic groups (see Table 2). Significantly fewer Asian patients had been referred by a physician ($P < 0.05$) or a community support group ($P < 0.05$). Informants were usually children of the patient, almost twice as often as spouses, regardless of the patient's ethnicity.

The ADDTCs diagnosed dementia in 85–93% of the total sample in this study. AD was the most common etiology of dementia for all four ethnic groups. Neuropsychiatric manifestations of AD and VaD did not differ significantly between the Asian and Caucasian groups or based on type of dementia. Delusions, apathy, and anxiety were the most commonly reported symptoms for AD patients of the four ethnic groups; apathy, depression, and delusions were the most commonly reported symptoms for VaD patients. The high prevalence of neuropsychiatric symptoms in the demented patients from each of the ethnic groups did not correlate with patient or caregiver resource utilization.

The ADDTCs are located in Californian counties featuring moderate percentages of elders from Asian minority groups (see Table 3), yet enrollment represented approximately half of the expected numbers. On the other hand, enrollment of Caucasian patients exceeded their average 65% composition of the elderly population for eight of the ADDTCs.

Reassessment

The one-year reassessment sample includes fewer than 50% of the patients from the Caucasian and Asian ethnic groups (see Tables 4–6). There was no statistical difference in the proportions of patients reassessed from each ethnic group. Reasons for lack of reassessment are complicated, as ADDTC sites had differing bases for reassessing patients, varying from medical necessity to referral from primary physicians for return evaluations. Of subjects offered reassessment, more Filipinos specifically refused to participate in reassessment than Caucasians (8.8 vs 3.2%, respectively, $P < 0.05$). This difference could not be attributed to patient deaths.

Table 4 shows generally low Asian, Filipino and Caucasian rates of patient and caregiver resource utilization prior to baseline evaluation. With the exception of primary medical care, financial assistance, case management, adult day care, and caregiver support groups, fewer than 10% of the demented patients were using support services in the 12 months prior to their first evaluation at an ADDTC.

The Asian group of patients differed significantly from the Caucasian group in referrals and utilization (see Table 5). Significantly more Asians garnered referrals to financial assistance ($P < 0.001$), case management ($P < 0.01$), and AD day care centers ($P < 0.05$). The ADDTCs referred a smaller proportion of Asian patients than Caucasians to home health services ($P < 0.05$). More Filipino than Caucasian patients were referred for financial assistance ($P < 0.05$) and fewer were referred to nursing homes ($P < 0.001$). Follow-up on referrals in the year after baseline evaluation was less than 50% in many cases, regardless of ethnic group. Significantly more Asian than Caucasian patients followed up on their referrals for financial assistance ($P < 0.001$), more Filipinos obtained services at AD day care centers ($P < 0.05$), and more Caucasian patients followed up on transportation services than Asians ($P < 0.05$).

Table 6 lists caregiver referrals and services obtained. As with patients, Asian caregivers were referred more frequently than Caucasian caregivers for financial assistance ($P < 0.001$). The rate of referrals for Asian caregivers to caregiver resource centers was higher than for Caucasians ($P < 0.001$), and follow-up was fairly similar between ethnic groups.

Repeat chi-squared analysis limited to patients with incomes less than US\$20 000 per year still showed statistically significant differences in Asian greater than Caucasian referral for financial assistance ($P < 0.001$), case management ($P < 0.01$), and to caregiver resource centers ($P < 0.001$). This implies that the lower socioeconomic status of the Asian group as a whole was not a factor in referral differences.

DISCUSSION

This study revealed that Asian, Filipino, and Pacific Islander elders in California subscribe to dementia evaluation services at much lower rates than Caucasians. Language barriers may contribute to Asian underutilization of ADDTCs. Most Asian elders currently residing in California are foreign-born and may not be able to negotiate the health care system without fluency in English (Yeo, 1991). Bilingual needs were met at the St Barnabas ADDTC in Los Angeles County, which was the only center to recruit significantly more patients from the combined Asian, Filipino and Pacific Islander groups than expected. The St Barnabas clinic's specialized outreach effort to the Korean-American community consisted of bilingual Korean social workers with affiliations to community churches, one bilingual Korean-American clinical nurse, and a staff of Korean national geriatric psychiatry trainees participating in a program affiliated with the University of Southern California School of Medicine (Bondareff, 1999, personal communication). Although the UC San Francisco ADDTC also had bilingual (Chinese) staff, none of the evaluating physicians were bilingual in Asian languages, and Chinese-American enrollment did not reach the expected proportion (see Table 1) (Hart et al., 1996). This language barrier may account directly for some of the lower referral rates; referrals may not be made if bilingual case managers or day care centers do not exist. Referrals and need for services were documented in the dataset. Dementia care centers may need to address language barriers at a multidisciplinary level in order to recruit and manage minority elders.

Filipino enrollment in the ADDTCs may reflect an even lower utilization rate than Asian enrollment. Among Asian ethnic groups, Filipinos have the second highest population after Chinese in the United States (20.4 and 23.8% of the collective Asian group, respectively) (US Department of Commerce and Statistics Administration, 1993). Filipino patients made up 0.8% of the ADDTC database, falling far short of that ethnic group's prevalence in California. Pacific Islanders rarely enrolled in the ADDTCs. Factors influencing their participation negatively might include distance between residence and ADDTC or lack of outreach to this specific population, but profiles of demented Pacific Islander patients who did not enroll in ADDTCs are not available. Barriers to service use by both of these ethnic groups warrants further investigation as to the most effective type of outreach.

The number of cases from Asian ethnic groups referred to the ADDTCs may be low in part because more elders from these groups than Caucasians still rank in the younger (60–69) age

group (US Department of Commerce Bureau of the Census, 1993) and the Asian elders have yet to develop dementia. This would not account for all of the observed discrepancy.

Along with language barriers, low or late Asian caregiver reporting of dementia symptoms could impact participation in AD evaluation programs. Among Asian cultures, aging is seen as a more prestigious process than in the American culture, which tends to perceive changes of aging as a disease-state (Wu, 1975). As adult Asian children increase caregiving responsibilities due to cultural mores, they may overlook dysfunction of the elders. Japanese-American caregivers in the Honolulu–Asia Aging Study did not report or recognize up to 53% of the dementia cases diagnosed during the course of the study (Ross et al., 1997). There also are cultural barriers to reporting symptoms, even if the symptoms are recognized by family members. For example, Chinese caregivers behave according to *hsiao ching*, a deep sense of obligation and respect for elder parents, which prevents caregivers from acknowledging a stigmatized ‘shortcoming’ such as dementia (Wu, 1975; Li, 1997; Kao and Stuifbergen, 1999). Asian caregivers to mentally ill patients wait until more severe stages of illness prevail before seeking medical attention, a delay which impacts treatment outcome negatively (Kitano, 1969; Kim et al., 1989; Lin and Fabrega, 1997). This delay reflects the stigmatization of mental illness in Asian cultures. The majority of referrals to the ADDTC included in this study came from family members, showing that the caregivers who would be most reluctant to report dementia symptoms are paradoxically the gatekeepers to dementia evaluation and treatment. While cultural beliefs of family members may be difficult to overcome as a barrier to dementia care, it should be noted that significantly fewer Asian patients were initially referred to the ADDTCs by a physician or a community-based support group. Enhancing community physician detection of dementia symptoms and establishing more community support groups in Asian and Pacific Islander communities may increase the number of referrals.

Referrals between ethnic groups differed significantly. Demented patients from the Asian, Filipino, and Pacific Islander ethnic groups did not differ from Caucasian patients in age, educational level, level of cognitive impairment (as measured by MMSE), and neuropsychiatric symptoms of dementia, but financial assistance and case management were still more likely to be needed by Asians and Filipinos. AD care centers in areas supporting Asian and Filipino families may need to concentrate resources on providing financial assistance and case management.

This study bears several limitations. The MUDS was not designed specifically with our study hypotheses in mind. Therefore, the availability of bilingual resources for patients near their homes and the ethnicity of referring physicians, important factors that probably impact Asian ethnic groups, could not be evaluated. Service needs could be defined by the patient, his caregiver, or the ADDTC evaluator, and the MUDS does not allow for differentiation. Perceived need by any of the three parties may not be the same and would affect the rate of referrals followed. Also, the patients who returned for reassessment after 12 months were selected by different criteria at each of the ADDTCs. One of the most common reasons for reassessment is the level of referrals made to other resources, so that our sample tends toward a Type 1 (false positive) error. Among those patients and caregivers for whom we

have reassessment data, reasons for not pursuing a referral are unavailable and therefore left to speculation.

Our strongest limitation is selection bias. There are no data on demented Asian Americans who did not enroll in an ADDTC. Without this comparison group, it is difficult to characterize barriers to dementia care and evaluation. The income distributions of those enrolled at the ADDTCs may have been representative of the socioeconomic strata for each of the ethnic groups at large (State of California, 1990), but the sample's similarities in educational level across ethnic groups imply that the large number of Asian Pacific Islander elders in the community with lower than high school levels of education have been excluded (Tom et al., 1998). Given this caveat, this study found statistically significant differences between demographically similar members of three ethnic groups.

This study provides a preliminary investigation of the differences between Asian Pacific Islander patients with dementia, their caregivers, and their Caucasian counterparts. Without the inclusion of ethnic minority patients in AD research efforts, it would be difficult to tease out what interventions may be broadly applicable across ethnicities, and what might vary substantially across ethnic/cultural groups. There is a paucity of information regarding stress, social support and helpseeking preferences of Asian AD patients and their families. Such information is crucial for the design of appropriate and effective educational outreach in Asian communities, which would then translate into earlier recognition and more effective management of dementia, thereby benefiting minority patients and their families.

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Fig. 1. Combined patient and spouse income for each of the four ethnic groups. The Caucasian group is weighted toward a significantly higher income by chi-squared testing ($P < 0.001$).

Table 1

Demographics and mean MMSE scores of patients referred to the ADDTCs for baseline evaluation

	Asian	Filipino	Pacific Islanders	Caucasian
Gender (% female)	51.4	61.5	35.7	54.4
Mean age at onset of dementia symptoms in years (SD, <i>n</i>)	70.3 (9.7, 307)	72.1 (8.8, 58)	71.0 (7.7, 18)	71.6 (8.9, 6270)
Mean educational level in years (SD, <i>n</i>)	11.0 (5.2, 310)	10.3 (4.9, 61)	9.4 (5.0, 18)	12.7 (3.4, 6457)
Mean MMSE (SD, <i>n</i>) (range 0–30)	15.4 (7.1, 262)	15.1 (7.6, 58)	17.5 (6.1, 17)	17.7 (7.3, 6335)

ADDTC = Alzheimer's Disease Diagnosis and Treatment Center, MMSE = Mini-Mental State Examination.

Table 2

Frequencies of reasons for referral to the ADDTCs and referral sources for patients with dementia. Each patient may have had more than one reason for referral (‡ $P < 0.05$, ** $P < 0.001$, by chi-squared testing)

	Chinese, Japanese, and Korean (<i>n</i> = 330)	Filipino (<i>n</i> = 63)	Pacific Islanders (<i>n</i> = 19)	Caucasian (<i>n</i> = 6607)
<i>Referral source</i>				
Memory loss	0.66	0.71	0.68	0.70
Suspect AD	0.58‡	0.56	0.47	0.48
Physical complaint	0.20	0.29	0.26	0.22
Unmanageable patient	0.18	0.19	0.21	0.16
<i>Reason for referral</i>				
Seeking second opinion	0.15	0.13	0.16	0.22**
Family member	0.20	0.29	0.13	0.25
Physician	0.15‡	0.22	0.33	0.21
Friend	0.06	0.04	0.00	0.07
Community support group	0.03‡	0.04	0.07	0.06
Self	0.03	0.02	0.07	0.02
Other	0.53	0.40	0.40	0.39

ADDTC = Alzheimer's Disease Diagnosis and Treatment Center.

Table 3

Ethnicity of ADDTC patients per county. Asterisks mark significant differences between the percentage of patients enrolled vs. their composition in the county population ($\dagger P < 0.05$, $** P < 0.001$)

ADDTC/county (total no. of patients enrolled)	Patients seen at the ADDTC who were Asian, Filipino or Pacific Islanders (n)	Elders in the county who are Asian, Filipino or Pacific Islanders [†]	Patients seen at the ADDTC who were Caucasian (n)	Elders in the county who are Caucasian [†]
San Diego (1045)	1.1% (12)**	6%	98.3% (1027)**	80%
Rancho Los Amigos/Los Angeles (1296)	3.8% (49)**	8%	68% (881)**	47%
St Barnabas/Los Angeles (796)	13.6% (108)**	8%	47.2% (376)	47%
Sacramento (1320)	2.7% (35) [†]	4%	90.5% (1194)**	78%
Berkeley/Alameda (1494)	3.7% (56)**	14%	75.3% (1125)**	60%
San Francisco (1073)	12.2% (131)**	32%	70.5% (757)**	48%
Stanford/San Mateo (866)	5.7% (49)**	12%	91.6% (793)**	75%
Fresno (712)	2.1% (15)**	7%	80.9% (576)**	69%
Irvine/Orange County (849)	3.8% (32)**	8%	93.9% (797)**	81%

ADDTC = Alzheimer's Disease Diagnosis and Treatment Center.

[†]US Department of Commerce Economics and Statistics Administration (1993).

Table 4

Frequency of resource utilization by the reassessed sample prior to baseline evaluation. Frequency of use of greater than 0.10 appears in bold

	Asian <i>n</i> = 46	Filipino <i>n</i> = 12	Pacific Islander <i>n</i> = 2	Caucasian <i>n</i> = 864
Primary MD	0.83	1	0.5	0.88
Financial assistance	0.41	0.25	0	0.05
Case management	0.11	0.08	0	0.05
Homemaker chore Sx	0.07	0.08	0	0.20
AD day care center	0.02	0.00	0	0.03
Transportation services	0.07	0.08	0	0.09
Adult day health care	0.02	0.08	0	0.02
Adult day care	0.00	0.17	0	0.05
Congregate meal service	0.09	0.00	0	0.09
Residential facility	0.02	0.08	0	0.07
Community support group	0.02	0.00	0	0.04
Nursing home	0.02	0.00	0	0.03
Home health services	0.04	0.08	0	0.09
Adult protective services	0.00	0.00	0	0.02
Caregiver community support group	0.04	0.00	0	0.14
Caregiver resource center	0.02	0.00	0	0.08
Respite care	0.02	0.00	0	0.04
Caregiver financial assistance	0.15	0.00	0	0.01
Adult protective services for the caregiver	0.00	0.00	0	0.01

Table 5Frequency of referrals and utilization of outpatient services (‡ $P < 0.05$, ** $P < 0.001$)

	Asian (n = 46)		Filipino (n = 12)		Caucasian (n = 864)	
	Referred	Obtained service	Referred	Obtained service	Referred	Obtained service
Primary MD referral	0.96	0.95	1.00	0.92	0.96	0.95
Financial assistance	0.48**	1.00**	0.25‡	1.67	0.07	0.78
Case management	0.48**	0.36	0.33	0.50	0.22	0.40
Homemaker chore Sx	0.39	0.33	0.25	0.67	0.34	0.59
AD day care center	0.41‡	0.26	0.33	0.75‡	0.28	0.27
Transportation services	0.30	0.36	0.33	0.25	0.18	0.72‡
Adult day health care	0.20	0	0.33	0.25	0.18	0.21
Adult day care	0.24	0.18	0.42	0.20	0.33	0.38
Congregate meal service	0.17	0.25	0.08	1.00	0.09	1.10
Residential facility	0.17	0.63	0.17	0.50	0.27	0.71
Community support group	0.13	0.33	0.08	0	0.20	0.24
Nursing home	0.11	1.00	0.08**	0	0.12	1.13
Home health services	0.04‡	0	0	+	0.15	0.57
Adult protective services	0.02	1.00	0	0	0.03	0.28

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Utilization of resources by caregivers to patients in Table 4. Asian = Chinese, Japanese, and Korean. Data from 1993 and 1995 datasets only (** $P < 0.001$)

Table 6

	Asian (<i>n</i> = 46)		Filipino (<i>n</i> = 12)		Caucasian (<i>n</i> = 864)	
	Referred	Obtained service	Referred	Obtained service	Referred	Obtained service
Community support group	0.72	0.24	0.50	0.33	0.77	0.29
Caregiver resource center	0.33**	0.27	0.58	0	0.61	0.18
Respite care	0.35	0.13	0.08	0	0.37	0.18
Financial assistance	0.20**	0.44	0.08	0	0.05	0.54
Adult protective services	0.02	1.00	0	+	0.03	0.05