

Health Care Access and Utilization among Korean American Adults in Alameda County, California: 1994 and 2002*

Young-Bok Kim* · Joel M. Moskowitz** · Hyun-Ju Lee** · Yevgeniy Kazinets**

*Department of Hospital Service Administration, College of Health Science, Seonam University

**Center for Family and Community Health, School of Public Health, University of California at Berkeley, U.S.A

CONTENTS

I. Introduction	V. Conclusion
II. Methods	References
III. Results	Abstract
IV. Discussion	

I. Introduction

Many countries, including the U.S., have experienced substantial growth in immigration in recent years. As such, public health professionals must increasingly attend to the needs of new immigrants. In the U.S., Asian and Pacific Islander Americans (APIA), who consist of more than 30 distinct ethnic groups, are the most diverse and fastest growing population in the U.S. (Chen et al., 1997; Lew et al., 2001). In California, 12.1% of the total population

were Asian American in 2004 (U.S. Census Bureau, 2006), and by 2020, APIAs are predicted to constitute 20% of the state's population (Campbell, 1994).

In the U.S., considerable attention has been paid to examination of health issues with respect to racial diversity, but little attention has been paid to the ethnic diversity within racial groupings, especially ethnic diversity among APIAs. For example, according to the 2005 Behavioral Risk Factor Surveillance System (BRFSS), 82.8% of the overall California adult population had health

* This study was supported by Cooperative Agreement Number U48/DP000033 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

Corresponding Author: Joel M. Moskowitz
140 Warren Hall, Berkeley, CA 94720-7360, U.S.A.
Tel: +1-510-643-7314, E-mail: jmm@berkeley.edu

insurance coverage (CDC, 2006). Among "Whites" coverage was 92.3%, among "Blacks" coverage was 88.9%, among Hispanics coverage was 68.1% and among "Other" which includes APIAs coverage was 89.6%. Even though the APIA population is growing rapidly, population-based health data on APIAs are suboptimal, and data on APIA subgroups are sparse.

The diversity of immigrants is reflected in their unique histories, cultures, values and beliefs. Although immigrants from different countries of origin share certain common experiences, they may hold beliefs and engage in behaviors from their country of origin, or their ethnic or religious group that may have implications for their health. These differences influence health-related behaviors (e.g., diet, exercise, smoking, alcohol consumption), and may contribute to disparities in access to, and use of, health care (Berrigan et al., 2003). Disparities in health care access are of concern to public health because health care plays an important role in the prevention and treatment of infectious and chronic disease. Thus, it is imperative to examine patterns of health care access and utilization within specific immigrant groups.

According to Liao and colleagues (2004), racial/ethnic minorities reported fewer visits to a doctor because of medical cost. Common barriers to health care access include high cost,

communication problems, lack of time and long waits for appointments. Immigrants in California possess limited knowledge about access and utilization and often experience language problems (Vryheid, 2001). Many private (e.g. health maintenance organizations or HMOs) and public (e.g., Medicaid or MediCal in California, Medicare) health care organizations offer language services to their enrollees. In one study only 2% of patients who received interpreter services complained of difficulty in understanding their medical instructions (Youdelman & Perkins, 2002).

Acculturation is a complex process and its influence on the health of immigrants from different countries is not well understood (Abraido-Lanza et al., 2006). Acculturation has been shown to be related to preventive health practices among Korean American women in Los Angeles (Sohn & Harada, 2005), and to psychological well-being among Korean American immigrants in the U.S. (Shin et al., 2006).

As compared to the other major APIA groups in California, Korean Americans were less likely to be proficient in English, and to have good or excellent self-reported health status. They were also less likely to have health insurance coverage, a usual source of health care, and were more likely to delay medical care. Also, Korean Americans, along with Chinese and Vietnamese, were more likely to need

interpreters for health care (Lin et al., 2006).

According to Kominski (2006), about 67% of Korean Americans who needed interpretation services were provided these services, which were considerably less than other ethnic groups with such needs, e.g., Hispanics (93%) and Chinese Americans (81%). Language problems can be a barrier to health care and result in reduced preventive health behaviors and poorer health status. Lacking health insurance and not having a Korean doctor have been identified as barriers to health care among elderly Korean Americans (Kang et al., 2006). Also, Korean Americans in California who had health insurance were more likely to use allopathic health care (Hill et al., 2006).

Although the Korean American community is the fifth largest APIA group, research on the health issues of Korean Americans has been limited. Thus, it is important to collect data on the Korean American community to set health priorities and to eliminate health disparities. Since 1994, Asian Health Services (a primary care community clinic in Oakland, California that serves APIA immigrants), the Korean American Community Advisory Board, and the Center for Family and Community Health (University of California at Berkeley) have conducted periodic, population-based health surveys on Korean American community health in Alameda County, California. Given

the paucity of population-based data on Korean Americans, these surveys provide a preliminary understanding of Korean American community health in the U.S.

In this study we examined changes in health care access and utilization between 1994 and 2002 among Korean American adults in Alameda County, California. The primary variables of interest, health care access and utilization, were operationalized in terms of health insurance coverage, routine check-ups, a usual source of health care and reported barriers to health care. Acculturation was defined in terms of length of time in the U.S. for immigrants or U.S. born, and barriers to health care included high cost, language and no time. Examination of changes in health care access and utilization among Korean American adults will contribute to our understanding of the health behaviors associated with preventive health services among Korean American in the U.S. Furthermore, it will be used to select the target group and to develop health education programs to reduce morbidity and mortality from the effect of chronic disease outcomes.

II. Methods

We reanalyzed data from the 1994 and 2002 Korean Health Surveys (Center for Family and Community Health, 1997, 2006).

These population-based telephone surveys were conducted with Korean Americans who resided in Alameda County, California. Telephone numbers with Korean surnames were randomly sampled from published telephone directory listings. Telephone interviews were conducted in Korean and in English by bilingual Korean Americans. Within each Korean American household reached, one adult aged 18 years and over was randomly sampled for the interviews in 1994 and in 2002. Data were available on 676 (Male: 272, Female: 404) respondents in 1994 and 626 (Male: 208, Female: 418) respondents in 2002. For some analyses, sample sizes were slightly smaller because "don't know/not sure" and "refused" responses were excluded.

The questionnaire items used in this study were adapted from the 1993 California Behavioral Risk Factor Surveys. The questionnaires assessed socio-demographic characteristics, acculturation, health insurance coverage, access to healthcare (routine check-up for health care and usual source of health care), and barriers to health care. The survey instruments were developed in English, translated into Korean, back-translated into English and modified as necessary in order to attain conceptual equivalence of the English and Korean versions of the instruments. The questionnaires were pre-tested prior to fielding the surveys.

Potential correlates included socio-

demographic factors and acculturative factors. Socio-demographic factors in our analysis were sex (male, female), age (< 50 years, ≥ 50 years), education (≤ 12 years, > 12 years), and employment status (self-employed, employed, student, unemployed). The unemployed category included homemakers, retired, ill or disabled persons, in addition to unemployed. Acculturation was assessed through length of time in the U.S. for immigrants or U.S. born.

Sample weights were constructed to adjust for the probability of respondent selection and the samples were weighted to reflect the sex and age distributions of Korean Americans in Alameda County from the U.S. Censuses in 1990 (for the 1994 survey) or 2000 (for the 2002 survey). Frequency distributions were calculated and standard errors were estimated using SUDAAN (Research Triangle Institute, North Carolina), a statistical program which uses Taylor Series approximations to calculate variance to account for the complex survey design. The differences between 1994 and 2002 which were adjusted by sex and age according to the 1990 or 2000 U.S. Census were examined with chi-square tests using standard errors generated by SUDAAN. We also estimated the chi-square values and p-values using adjusted data by age and sex with all of the responses weighted to the 1990 U.S. Census and found similar results (not reported).

III. Results

Socio-Demographic Characteristics & Acculturation

The socio-demographic characteristics of

the population of Korean Americans in Alameda County in 1994 and 2002 were compared (Table 1).

Table 1. Socio-demographics and acculturation of Korean American adults in Alameda County in 1994 and 2002

Classification		1994 ^a	2002 ^a
Sex	Male	45.5 (41.3-49.7)	45.7 (40.9-50.5)
	Female	54.5 (50.3-58.7)	54.3 (49.5-59.1)
Age	18-34yrs	52.6 (48.4-56.8)	46.8 (41.9-51.6)
	35-49yrs	27.8 (24.2-31.4)	29.5 (25.4-33.5)
	50-64yrs	14.3 (11.8-16.9)	16.8 (13.7-19.8)
	≥ 65yrs	5.3 (3.9- 6.8)	7.0 (5.2- 8.8)
Education	> High school	8.9 (6.8-11.0)	6.6 (4.5- 8.7)
	High school	18.9 (15.5-22.3)	15.1 (11.8-18.4)
	Some college	20.4 (16.8-24.0)	15.1 (11.4-18.7)
	College graduate	39.2 (25.0-43.3)	45.8 (41.0-50.6)
	Post-graduate	12.6 (9.7-15.5)	17.4 (13.8-21.0)
Employment	Self-employed	22.2 (18.8-25.7)	16.1 (12.8-19.5)
	Employed	29.7 (25.8-33.6)	35.8 (31.2-40.4)
	Retired	2.0 (1.1- 3.0)	4.3 (2.8- 5.9)
	Student	25.6 (21.6-29.6)	17.7 (13.6-21.8)
	Homemaker	14.8 (11.9-17.6)	21.4 (17.7-25.1)
	Ill/Disabled	0.4 (0.1- 0.8)	0.3 (0.0- 0.6)
	Unemployed	5.3 (3.8- 6.8)	4.4 (2.4- 6.5)
Length of time in U.S.	Born in US	7.5 (5.1- 9.8)	10.4 (7.2-13.7)
	>20yrs	12.9 (10.2-15.6)	31.4 (27.2-35.6)
	16-20yrs	18.1 (14.9-21.2)	17.6 (13.9-21.2)
	11-15yrs	24.2 (20.5-27.9)	13.2 (9.9-16.4)
	6-10yrs	24.4 (20.6-28.2)	13.9 (10.5-17.2)
0-5yrs	13.0 (9.9-16.1)	13.6 (10.1-17.1)	

^aAll data weighted to account for different selection probabilities and the age and sex distribution of the Korean population in Alameda and Santa Clara Counties according to the 1990 or 2000 U.S. Census.

^bRow and column totals may not equal overall sample size because "don't know/not sure" and "refused" responses were excluded or because of rounding.

^cPercentage may not add up to 100% because of rounding.

The sex and age distributions were similar except compared to 1994, there were fewer adults less than 35 years of age in 2002 (52.6% vs. 46.8%). Compared to 1994, in 2002 the population contained more college graduates (39.2% vs. 45.8%) and post-graduates (12.6% vs. 17.4%), but fewer adults with some college or technical school education (20.4% vs. 15.1%). In 2002, more adults were homemakers (14.8% vs. 21.4%) or retired (2.0% vs. 4.3%), but fewer adults were self-employed or students. Also, in 2002 more immigrants lived in the U.S. greater than 20 years (12.9% vs. 31.4%).

Health insurance coverage

Overall, health insurance coverage increased between 1994 and 2002. Compared to 1994, Korean Americans in Alameda County were more likely to have health insurance in 2002 (74.0% vs. 82.7%)(Table 2). Health insurance coverage increased for males (78.8% vs. 87.3%), for females (70.0% vs. 78.7%), for adults less than 50 years (73.7% vs. 82.1%), for adults 50 years of age and older (75.3% vs. 84.5%), for employed adults (79.2% vs. 88.4%), for unemployed adults (62.5% vs. 81.1%), and for immigrants with 10 or fewer years in the U.S. (64.5% vs. 79.6%).

Table 2. Health insurance coverage among Korean American Adults in Alameda County in 1994 and 2002 by socio-demographic characteristics and acculturation

Unit: % (95% CI)

Classification		1994a (N=647)	2002 ^a (N=612)	p ^b
Total		74.0 (70.2-77.8)	82.7 (78.9-86.5)	0.002
Sex	Male	78.8 (73.5-84.0)	87.3 (81.7-92.9)	0.041
	Female	70.0 (64.8-75.2)	78.7 (73.6-83.9)	0.026
Age (in years)	<50	73.7 (69.2-78.2)	82.1 (77.5-86.8)	0.014
	≥ 50	75.3 (68.6-82.0)	84.5 (79.0-90.1)	0.039
Education (in years)	≤ 12	66.8 (59.5-74.1)	76.9 (68.8-85.0)	0.079
	> 12	76.9 (72.5-81.3)	84.4 (80.1-88.8)	0.018
Employment	Self-employed	64.8 (56.4-73.3)	71.6 (60.9-82.4)	0.435
	Employed	79.2 (72.9-85.6)	88.4 (83.2-93.7)	0.034
	Student	85.8 (79.1-92.6)	84.1 (74.0-94.2)	0.816
	Unemployed ^c	62.5 (54.4-70.6)	81.1 (74.3-87.9)	0.001
Length of time in U.	Born in US & >20yrs	87.2 (81.1-93.4)	87.6 (83.0-92.3)	0.991
	11-20yrs	75.6 (70.2-81.0)	78.6 (71.1-86.2)	0.528
	≤ 10yrs	64.5 (57.3-71.7)	79.6 (71.5-87.7)	0.007

^aAll data weighted to account for different selection probabilities and the age and sex distribution of the Korean population in Alameda and Santa Clara Counties according to the 1990 or 2000 U.S. Census.

^bp-value for chi-square test .

^cUnemployed included retired, homemaker, ill/disabled and unemployed.

Routine health checkup

Compared to 1994, Korean Americans in Alameda County were more likely to have received a recent (prior two years) routine health checkup in 2002 (50.4% vs.

57.2%)(Table 3). Health checkups increased over time for males (38.9% vs. 53.5%), for adults with more than 12 years of education (47.8% vs. 56.5%), and for employed adults (55.1% vs. 66.4%).

Table 3. Percentage of Korean American adults Alameda County in 1994 and 2002 who received a routine checkup in the prior two years

Unit: % (95% CI)

Classification		1994a (N=647)	2002 ^a (N=618)	p ^b
Total		50.4 (46.1-54.6)	57.2 (52.4-62.0)	0.040
Sex	Male	38.9 (32.5-45.3)	53.5 (45.8-61.1)	0.005
	Female	59.9 (54.4-65.4)	60.3 (54.3-66.4)	0.894
Age (in years)	<50	48.3 (43.3-53.2)	53.5 (47.7-59.2)	0.162
	≥ 50	59.0 (51.5-66.4)	69.4 (61.8-76.9)	0.069
Education (in years)	≤ 12	57.0 (49.3-64.7)	60.8 (51.3-70.3)	0.507
	> 12	47.8 (42.7-53.0)	56.5 (50.9-62.1)	0.028
Employment	Self-employed	48.2 (39.7-56.6)	43.9 (33.0-54.9)	0.553
	Employed	55.1 (47.3-62.8)	66.4 (58.7-74.1)	0.048
	Student	40.7 (31.3-50.0)	41.7 (28.8-54.7)	0.950
	Unemployed	57.3 (49.4-65.3)	61.9 (53.8-69.9)	0.378
Length of time in U.	Born in US & >20yrs	54.3 (45.0-63.5)	63.2 (56.1-70.3)	0.120
	11-20yrs	55.9 (49.6-62.1)	59.4 (50.7-68.0)	0.524
	≤ 10yrs	41.8 (34.7-48.9)	45.7 (36.2-55.2)	0.544

^aAll data weighted to account for different selection probabilities and the age and sex distribution of the Korean population in Alameda and Santa Clara Counties according to the 1990 or 2000 U.S. Census.

^bp-value for chi-square test .

Usual source of health care

Although there was a significant overall change over time in the percentage of Korean Americans in Alameda County who had a usual source of health care (66.0% vs.

73.0%), significant improvement was observed in only one subgroup. Compared to 1994, employed adults were more likely to have a usual source of health care in 2002 (66.5% vs. 78.4%).

Table 4. Percentage of Korean American adults in Alameda County in 1994 and 2002 who had a usual source of health care

Unit: % (95% CI)

Classification		1994a (N=647)	2002 ^a (N=621)	p ^b
Total		66.0 (61.9-70.1)	73.0 (68.6-77.4)	0.019
Sex	Male	62.6 (56.3-68.9)	69.2 (62.0-76.5)	0.178
	Female	68.8 (63.6-74.0)	76.1 (70.8-81.5)	0.055
Age (in years)	<50	64.9 (60.1-69.7)	71.0 (65.7-76.4)	0.104
	≥50	70.5 (63.7-77.2)	79.6 (73.0-86.2)	0.070
Education (in years)	≤12	60.2 (52.7-67.7)	70.7 (62.0-79.5)	0.102
	>12	68.3 (63.5-73.1)	73.8 (68.7-78.9)	0.137
Employment	Self-employed	61.9 (53.5-70.3)	58.1 (47.0-69.3)	0.668
	Employed	66.5 (59.1-73.8)	78.4 (71.6-85.2)	0.026
	Student	66.0 (57.2-74.9)	65.3 (52.8-77.9)	0.907
	Unemployed	69.4 (61.8-76.9)	78.8 (71.6-86.0)	0.069
Length of time in U.	Born in US & >20yrs	78.7 (71.2-86.3)	75.5 (69.2-81.8)	0.510
	11-20yrs	67.4 (61.5-73.4)	74.9 (66.9-82.9)	0.148
	≤10yrs	57.3 (50.0-64.5)	66.5 (57.4-75.7)	0.110

^aAll data weighted to account for different selection probabilities and the age and sex distribution of the Korean population in Alameda and Santa Clara Counties according to the 1990 or 2000 U.S. Census.

^bp-value for chi-square test.

Barriers to Health Care

High cost was the most commonly cited barrier to health care in 1994 and 2002 (Table 5). The next most frequently cited barriers were language (29.2% vs. 27.7%) and no time (29.2% vs. 30.3%). Overall, compared to 1994, Korean Americans in Alameda County were less likely to report that high cost was a barrier to health care in 2002 (58.0% vs. 47.8%). High cost was less likely to be cited as a barrier to health care

in 2002 by males (58.0% vs. 40.5%), adults less than 50 years of age (59.7% vs. 50.6%) and 50 years and older (51.1% vs. 38.8%), adults with 12 or less years of education (56.9% vs. 42.5%) and with more than 12 years of education (58.4% vs. 49.7%), employed adults (50.6% vs. 38.2%), and adults born in the U.S. and immigrants who lived in the U.S. more than 20 years (64.2% vs. 42.5%). As compared to 1994, language was less likely to be cited as a barrier to

health care in 2002 by self-employed (42.2% vs. 29.2%) and employed adults (28.7% vs. 18.8%). Finally, the percentage that cited lack of time for health care did not change across years.

Table 5. Barriers to Health Care among Korean American Adults in Alameda County in 1994 and 2002

Unit: % (95% CI)

Classification		Barriers	1994a (N=647)	2002 ^a (N=618)	p ^b
Total		High cost	58.0 (53.8-62.2)	47.8 (43.0-52.6)	0.002
		Language	29.2 (25.4-33.1)	27.7 (23.5-31.9)	0.642
		No time	29.2 (25.3-33.2)	30.3 (25.9-34.7)	0.7
Sex	Male	High cost	58.0 (51.5-64.5)	40.5 (32.9-48.1)	0.001
		Language	25.8 (20.2-31.4)	18.7 (12.5-24.8)	0.103
		No tim	29.2 (23.3-35.1)	30.5 (23.3-37.6)	0.76
	Female	High cost	57.9 (52.5-64.5)	53.9 (48.0-59.8)	0.345
		Language	32.1 (27.0-37.2)	35.4 (29.7-41.0)	0.397
		No tim	29.3 (24.0-34.6)	30.2 (24.6-35.7)	0.85
Age (in years)	<50	High cost	59.7 (54.8-64.6)	50.6 (44.8-56.3)	0.019
		Language	27.4 (23.1-31.8)	25.0 (20.0-29.9)	0.434
		No tim	30.3 (25.7-34.9)	31.0 (25.7-36.4)	0.84
	≥50	High cost	51.1 (43.3-58.9)	38.8 (31.2-46.5)	0.023
		Language	36.6 (29.2-44.0)	36.6 (29.1-44.2)	0.960
		No tim	24.8 (18.4-31.2)	28.0 (20.6-35.5)	0.50
Education (in years)	≤12	High cost	56.9 (49.4-64.5)	42.5 (33.0-52.0)	0.019
		Language	43.2 (35.8-50.6)	42.2 (32.9-51.5)	0.943
		No tim	30.7 (23.5-38.0)	24.6 (16.8-32.4)	0.26
	>12	High cost	58.4 (53.3-63.5)	49.7 (44.1-55.2)	0.022
		Language	23.7 (19.4-28.0)	23.6 (18.9-28.3)	0.975
		No tim	28.6 (23.9-33.3)	32.0 (26.7-37.3)	0.38
Employment	Self-employed	High cost	60.2 (51.8-68.6)	60.6 (50.0-71.3)	0.968
		Language	42.2 (33.7-50.7)	29.2 (19.7-38.7)	0.056
		No tim	34.7 (26.5-43.0)	40.2 (29.3-51.2)	0.39
	Employed	High cost	50.6 (42.7-58.5)	38.2 (30.2-46.3)	0.028
		Language	28.7 (21.8-35.7)	18.8 (12.8-24.9)	0.034
		No tim	31.5 (24.4-38.7)	36.6 (28.8-44.4)	0.33
	Student	High cost	68.4 (59.4-77.4)	57.5 (44.2-70.7)	0.174
		Language	12.6 (6.3-18.9)	16.9 (5.8-28.0)	0.536
		No tim	36.6 (27.3-45.8)	36.0 (23.5-48.6)	0.91
Unemployed	High cost	53.7 (45.7-61.6)	46.8 (38.9-54.7)	0.251	
	Language	35.8 (28.0-43.5)	43.5 (35.6-51.4)	0.177	
	No tim	12.5 (7.3-17.7)	14.7 (8.8-20.6)	0.57	

→ Continued on the next page

Classification		Barriers	1994a (N=647)	2002 ^a (N=618)	p ^b
Length of time in U.	Born in US & >20yrs	High cost	64.2 (55.4-73.0)	42.5 (35.5-49.6)	<0.001
		Language	9.7 (4.5-14.9)	11.9 (8.1-15.7)	0.527
		No tim	15.6 (8.9-22.2)	24.4 (18.2-30.5)	0.07
	11-20yrs	High cost	48.9 (42.4-55.4)	42.9 (34.3-51.6)	0.276
		Language	29.3 (23.7-34.9)	33.1 (25.4-40.8)	0.438
		No tim	29.3 (23.5-35.1)	33.1 (24.8-41.4)	0.41
	≤10yrs	High cost	65.2 (58.4-72.0)	61.9 (52.8-71.0)	0.641
		Language	40.5 (33.3-47.7)	46.4 (36.7-56.1)	0.339
		No tim	36.9 (29.7-44.2)	35.3 (26.2-44.5)	0.76

^aBarriers to health care are listed individually by each response.

^bAll data weighted to account for different selection probabilities and the age and sex distribution of the Korean population in Alameda and Santa Clara Counties according to the 1990 or 2000 U.S. Census.

^cp-value for chi-square test.

IV. Discussion

Among Korean American adults in Alameda County, California, health care access and utilization improved while barriers to health care decreased between 1994 and 2002. First, we examine two external sources of data to help us interpret these changes. We contrast the observed improvements in health care access and utilization in our survey with general population data from the Behavioral Risk Factor Surveillance System (BRFSS) and from the California Health Interview Survey (CHIS). The Centers for Disease Control and Prevention have conducted annually the BRFSS for most states in the U.S. since 1995, and the University of California at Los Angeles (UCLA) has conducted the CHIS

every other year beginning in 2001. Second, we examine the changing pattern of health care access and utilization among Korean Americans in Alameda County by socio-demographic factors and acculturation, and summarize the characteristics of vulnerable groups.

Health insurance coverage increased 8.7% between 1994 and 2002 among Korean American adults in Alameda County (74.0% vs. 82.7%). According to the BRFSS, nationwide coverage decreased slightly from 1995 to 2002 (88.0% vs. 85.9%). However, among Californians the BRFSS found an increase in coverage (80.5% vs. 84.6%) which parallels the trend we observed for Koreans in Alameda County. Comparing health insurance coverage between Korean Americans in Alameda County with the U.S. adult population, the gap diminished from

14% in 1994 to 3.2% in 2002. Also the gap between Korean Americans and Californians decreased over time from 6.5% to 1.9%. This suggests that the improvement in health insurance coverage among Korean Americans may be associated with geographic factors. According to the 2001 CHIS, adults in Alameda County were more likely to have health insurance coverage than in any other area of California. In Alameda County, 90.3% of adults 18-64 years of age had health insurance coverage in 2001 as compared to 87.6% in Santa Clara County (an adjacent county) and to 76.8% in Los Angeles County (Brown et al., 2002). Thus, it is possible that the increased health insurance coverage among Korean Americans in Alameda County is at least partly attributable to increased health insurance coverage among all adults in the County.

Private and public health insurance coverage increased between 1994 and 2002. Compared to 1994, Korean Americans in Alameda County were more likely to have private health insurance in 2002 (65.6% vs. 72.7%). Private health insurance coverage increased for females (59.2% vs. 67.5%), for adults 50 years of age and older (46.4% vs. 58.8%), for employed adults (75.0% vs. 86.3%), for unemployed adults (36.3% vs. 58.9%), and for immigrants with 10 or fewer years in the U.S. (56.7% vs. 70.1%). Public

health insurance, which includes Medicare for adults 65 years of age and older and Medicaid (i.e., MediCal in California), increased in 2002 for self-employed adults (2.7% vs. 11.0%) and for adults born in the U.S. and immigrants who lived in the U.S. more than 20 years (3.2% vs. 8.7%). Thus overall, health insurance coverage increased primarily due to improved coverage among older persons, those who were employed, and immigrants with 10 or fewer years in the U.S.

The prevalence of doctor visits for routine check-ups in the past two years increased 6.8% between 1994 and 2002 for Korean American adults in Alameda County (50.4% vs. 57.2%). These were percentages were lower than found among the general U.S. population and California., According to the BRFSS, the prevalence of recent routine checkups in the past two years decreased slightly (0.7%) in the U.S. between 1995 and 1999 (83.7% vs. 83.0%) whereas in California, there was a small increase, 2.7% (72.6% vs. 75.3%). Korean Americans were less likely to receive health checks up within the past year than American Indians (70%)(Gilliland et al., 1999). Our results regarding receipt of preventive services corresponded with previous results about Hispanics and APIAs (Liao et al., 2004). Thus, despite improvement over time in general health

screening among Korean Americans, there is room for further improvement because routine checkups are more common in the general population.

Overall, Korean Americans in Alameda County with a usual source of health care increased by 7% from 1994 to 2002 (66% vs. 73%). The estimate for 2002 is very similar to an estimate (70.5%) obtained by Lin and colleagues (2006) for all Korean Americans in the State in 2001 and 2003. In these years, Korean Americans were least likely to have a usual source of health care among the major APIA groups in the State, especially compared to Filipino Americans (92.2%) and South Asians (81.3%)(Lin et al., 2006). Mexican Americans were less likely to have a regular source of care and more likely to experience barriers to access and utilization of health care (Hunter et al., 2003).

Contrasting our results for 2002 with other ethnic groups in California in the 1999 and 2002 BRFSS, Korean Americans in Alameda County (82.7%) were less likely to have health insurance coverage than Whites (92.1%) or Blacks (91.5%), but more likely to have it than Hispanics (70.3%). Korean Americans in Alameda County were less likely to receive a routine check-up (57.2%) than Whites (75.9%), Blacks (83.1%), Hispanics (71.9%), or Other ethnic groups (79.1%) in 1999.

Even though health care access and utilization had improved from 1994 to 2002 in our study, it may be necessary to educate Korean Americans about the importance of health insurance coverage in the U.S. and the need for a usual source of health care and for routine health checkups. To promote health status, it is essential to possess the enabling factors associated with health care system utilization including participation in preventive screening. Hence, it is important to educate the population about health care system utilization. There may be a need to educate health care providers who serve Korean Americans and to provide better linguistic access for those who seek care.

Among Korean Americans in Alameda County, changes in health care access and utilization varied across socio-demographic subgroups and by acculturation. The increase in health insurance coverage was associated with sex, age, employment status, and length of time in the U.S. Increases in private or public health insurance coverage were found for females, adults 50 years or older, employed, self-employed and unemployed adults, and immigrants who lived for 10 or fewer years or for more than 20 years in the U.S. in addition to U.S. born. The increase in private health insurance coverage may be related to increased enrollment in union jobs, improved job benefits that provide insurance coverage for

family members, and better employment opportunities for new immigrants. In 2001, nearly two-thirds of those under age 65 (including children) in California (18.7 million) were covered by employment-based health insurance (Brown et al., 2002).

Lastly, visits to a doctor for routine check-ups improved in males, adults with more than 12 years of education, and employed adults. Among Mexican Americans, those born in the U.S. were more than twice as likely to receive routine check-ups as those born in Mexico (Jurkowski, 2006). However, among Korean Americans in Alameda County, routine checkups did not vary significantly by time in the U.S. or county of origin.

Lack of health insurance coverage has been identified as a barrier to receiving routine check-ups among the Korean American elderly (Kang et al., 2006). In our study, an increase in health insurance coverage was associated with a decline in high cost being cited as a barrier to health care. Overall, high cost as a barrier to health care was reduced by 10.2%. This decline was greatest among males, both age groups, both educational groups, employed adults, and adults born in the U.S. or immigrants who lived in the U.S. at least 20 years.

However, even though health insurance coverage increased over time, about half of respondents (47.8%) still thought high cost

was a barrier to health care in 2002. That is, even though health benefits may have improved, many immigrants still were concerned about the high costs of medical care which may include insurance premiums, deductibles, co-payments, and the need to pay "out of pocket" for procedures not covered by insurance. In females, high cost was the most frequently cited reason for lack of insurance among uninsured women in Alameda County in 2002 (53.9%).

Although access to health care improved, there were disparities in individual predisposing factors in 2002, such as sex, age, educational level, employment status and length of time in the U.S. For example, we found a disparity of 8.6% in health insurance coverage between males and females, and a disparity of 16.8% between employed and self-employed adults. With regard to doctor visits for routine check-ups, we found disparities of 22.5% between employed and self-employed adults, and between adults who lived in the U.S. for at least 10 years or not. Similar disparities were found with regard to a usual source of health care and high cost as a barrier to health care.

Among Korean Americans in Alameda County high cost was the most common barrier to health care access followed by language problems, lack of time, waiting for appointments, child-care, lack of knowledge

about sources of health care and transportation. However, the only significant change over time between 1994 and 2002 was the high cost of health care.

Finally, our results suggest that the groups most likely to lack health care access and utilization among Korean American adults in Alameda County are females, self-employed adults, students, and adults who have lived in the U.S. for 10 or fewer years. Identification of such disparities is useful to select target populations and to decide priorities for health education programs for the Korean American community. Our results are limited to Korean American adults in a single county in California. Therefore, in the future, health data on Korean Americans need to be collected from population-based surveys in other parts of the U.S.

Our study has several limitations which may affect the interpretation of results. First, the sampling frame consisted of telephone numbers associated with Korean surnames in telephone directory lists. Korean women who married non-Koreans and changed their surnames were excluded from the sample. In addition, households without land-line telephones and telephone households with unpublished telephone numbers were excluded from the study. Second, the socio-demographic characteristics of the Korean American population of Alameda

County changed from 1994 to 2002. Differences in health care access and utilization over this time period may be due to changes in the socio-demographic composition of the population or to increased acculturation.

V. Conclusion

To improve health care utilization and health conditions, it is necessary to investigate aspects of the health care system, such as health insurance coverage and access to health care. Although Korean Americans are the fifth largest Asian Pacific Islander American subgroup, little health-related research has been conducted on this population which numbers more than one million. Given the paucity of research on Korean Americans, even though our study is limited to a single county, it contributes to our understanding of Korean American community health.

Health care access and utilization among Korean American adults in Alameda County improved overall from 1994 to 2002, especially, health insurance coverage, routine check-ups, and having a usual source of health care. Also, the percentage of adults who cited high cost as a barrier to health care decreased over time.

However, in 2002 there was still a gap

between Korean Americans and the general population of the U.S. and of California. Fortunately, the gap in health care access and utilization between Korean Americans and other Americans appears to be shrinking over time. To improve health care access among Korean Americans, we need to improve the health care conditions for the more vulnerable subgroups by reducing barriers to health care and encouraging participation in preventive health screening, such as routine check-ups.

Therefore, it is important to investigate factors related to health care and to monitor trends over time. Given their unique language, cultural beliefs, and practices, ongoing surveillance of health factors within the Korean American community is necessary so that culturally-sensitive prevention strategies can be developed and evaluated. Behavioral risk factor surveillance can be used to identify barriers to health care access and important health education messages. Also, it can identify risk factors associated with health care utilization and help improve communication between the community and health care providers. Furthermore, it may be used to develop tailored educational programs to reduce morbidity and mortality due to chronic disease.

Using a community-based participatory research model, the Korean American

community in Alameda County, Asian Health Services and the Center for Family and Community Health, with funding from the CDC Prevention Research Center Program, collaborated on periodic community health assessments. More such collaborations are needed to monitor Korean American community health and to develop evidence-based health promotion and disease prevention programs that are culturally sensitive.

References

- Abraido-Lanza AF, Armbrister AN, Florez KR, Aguirre AN. Toward a theory-driven model of acculturation in public health research. *American Journal of Public Health* 2006;96(8):1342-1346.
- Berrigan D, Dodd K, Troiano RP, Krebs-Smith SM, Ballard-Barbash RB. Patterns of health behavior in U.S. adults. *Preventive Medicine* 2003;36:615-623.
- Brown ER, Ponce N, Rice T, Lavarreda SA. The state of health insurance in California: findings from the 2001 California Health Interview Survey. UCLA Center for Health Policy Research, 2002.
- Bureau of the Census. Economics and

- Statistics Administration. U.S. Dept of Commerce, 1993. pp.1-9.
- Campbell PS. Population projections for states, by age, sex, race, and Hispanic origin: 1993-2020. In: U.S. Bureau of the Census. Current population reports. Washington DC: U.S. Govt. Printing Office, 1994. pp.5-11.
- Carrasquillo O. Pati S. The role of health insurance on Pap smear and mammography utilization by immigrants living in the United States. *Preventive Medicine* 2004;39:943-950.
- Center for Family and Community Health, Asian Health Services, Korean Community Advisory Board. 1994 Korean American Community Health Survey: Alameda and Santa Clara Counties, California. Berkeley: Center for Family and Community Health, 1997. Available at URL: <http://cfch.berkeley.edu/reports/khs94.PDF>.
- Center for Family and Community Health, Asian Health Services, Korean Community Advisory Board. 2002 Korean American Community Health Survey: Alameda and Santa Clara Counties, California. Berkeley: Center for Family and Community Health, 2006. Available at URL: <http://cfch.berkeley.edu/reports/khs02.PDF>.
- Gilliland FD, Mahler R, Hunt WC, Davis SM. Preventive health care among rural American Indians in New Mexico. *Prev Med.* 1999;28(2):194-202.
- Hill L, Hofstetter CR, Hovell M, Lee J, Irvin V, Zakarian J. Koreans' use of medical services in Seoul, Korea and California. *J Immigr Minor Health* 2006;8(3):273-80.
- Hunter JB et al. Healthcare access and utilization among women 40 and older at the U.S.-Mexico border: predictors of a routine check-up. *J Community Health* 2003;28(5):317-33.
- Jurkowski JM. Nativity and cardiovascular disease screening practices. *J Immigr Minor Health* 2006;8(4):339-46.
- Kang JH, Han HR, Kim KB, Kim MT. Barriers to care and control of high blood pressure in Korean-American elderly. *Ethn Dis* 2006;16(1):145-51.
- Kish L. Survey Sampling. New York: John Wiley & Sons, Inc, 1965.
- Kominski GF, Reifman C, Cameron ME, Roby DH. Language barriers pose a risk for California HMO enrollees. UCLA Health Policy Research Brief 2006;May:1-4.
- Lew R et al. Correlates of cigarette smoking among Korean American adults in Alameda County, California. *Asian Am Pac Isl J Health* 2001;9(1):49-60.
- Liao Y, Tucker P, Okoro CA, Giles WH,

- Mokdad AH, Harris VB. REACH 2010 Surveillance for Health Status in Minority Communities-United States, 2001-2002. *MMWR Surveill Summ* 2004;53(6):1-36.
- Lin-Fu JS. Asian and Pacific Islander Americans: an overview of demographic characteristics and health care issues. *Asian Am Pac Islander J Health* 1993;1:20-36.
- Lin MK, Kazinets G, Ivey S, Moskowitz JM. The health of Asian Pacific Islander American adults in California: 2001 and 2003. Berkeley: Center for Family and Community Health, University of California at Berkeley, 2006. Available at URL: [http://cfch.berkeley.edu/reports/reports.html/APIA health 2001-03.pdf](http://cfch.berkeley.edu/reports/reports.html/APIA%20health%202001-03.pdf).
- National Center for Chronic Disease Prevention and Health Promotion. 1995-2002 Behavioral Risk Factor Surveillance System, 2006. <http://www.cdc.gov/brfss/index.htm>.
- Shin HS, Han HR, Kim MT. Predictors of psychological well-being among Korean immigrants to the United States: A structured interview survey. *Int J Nurs Stud*. 2006;Jun23:[Epub ahead of print].
- Sohn L, Harada ND. Knowledge and use of preventive health practices among Korean women in Los Angeles County. *Preventive Medicine* 2005;41:167-178.
- United States Census Bureau. 2006. 2004 State & County Quick facts. <http://quickfacts.census.gov/qfd/states/06000.html>.
- Vryheid RE. Survey of vaccinations of immigrants and refugees in San Diego County, California. *Asian Am Pac Isl J Health* 2001;9(2):221-30.
- Youdelman M, Perkins J. Providing language interpretation services in health care settings: examples from the field. Washington DC: National Health Law Program, prepared for the Commonwealth Fund, 2002.

ABSTRACT

Purpose: Since 1994, Asian Health Services, the Korean American Community Advisory Board, and the Center for Family and Community Health (University of California at Berkeley) have conducted periodic, population-based surveys on Korean American community health in Alameda County, California. The present study examines changes in health care access and utilization between 1994 and 2002 among Korean American adults in Alameda County, California.

Method: We reanalyzed data from the 1994 and 2002 Korean Health Surveys. The primary variables of interest, health care access and utilization, were operationalized in terms of health insurance coverage, routine check-ups, a usual source of health care and reported barriers to health care. The frequency distribution of each indicator was calculated and its standard error was estimated using SUDAAN. The differences between 1994 and 2002 were examined with chi-square test.

Results: Compared to 1994, Korean Americans in Alameda County were more likely to have health insurance coverage in 2002 (74.0% vs. 82.7%). Korean Americans in Alameda County were more likely to have received a recent (prior two years) routine health checkup in 2002 (50.4% vs. 57.2%). Health checkups increased over time for males, for adults with more than 12 years of education, and for employed adults. Also, compared to 1994, employed adults were more likely to have a usual source of health care in 2002 (66.5% vs. 78.4%). In both 1994 and 2002, high cost (58.0% vs. 47.8%) was the most commonly cited barrier to health care, and the next most frequently cited barriers were language (29.2% vs. 27.7%) and no time (29.2% vs. 30.3%).

Conclusion: To improve health care utilization and health conditions, it is important to investigate factors related to health care and to monitor changing trends. Ongoing surveillance of health-related factors can contribute to the development of health education programs to reduce morbidity and mortality due to chronic disease, and thereby lead to improvements in health status among Korean Americans.

Key Words: Access to Health Care, Health Care Utilization, Korean American Community