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## AAPI Nexus: Policy, Practice and Community

### Title

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### Permalink

<https://escholarship.org/uc/item/5gb9k1b2>

### Journal

AAPI Nexus: Policy, Practice and Community, 6(2)

### ISSN

1545-0317

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### Publication Date

2008

### DOI

10.36650/nexus6.2\_17-44\_WonEtAl

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Peer reviewed

Research Article

# Health of Older Asian Americans in California: Findings from the California Health Interview Survey

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## Abstract

Health studies about older Asian Americans based on national and statewide representative data are scarce. This study used data from the population-based 2001 California Health Interview Survey (CHIS) to examine subgroup differences in socioeconomic health indicators and the use of health services among five groups of Asian Americans aged sixty or older (Chinese, Filipino, Japanese, Korean, and Vietnamese). Significant differences were found in demographic and socioeconomic characteristics, health status, chronic conditions, insurance coverage, and use of health care services among the five groups, indicating the complexity, diversity, and heterogeneity of older Asian American populations. Practice and research implications are discussed.

## Introduction

The older Asian American population grew rapidly from 1990 to 2000 with a significant increase of 78 percent (Asian alone) or 92 percent (combination with other race), compared to a 12 percent increase in the overall US older population (Barnes and Bennett, 2002; U.S. Census, 2002; Min and Moon, 2006). Despite the continued growth of the population, many health researchers and practitioners point out a critical shortage of representative data on general health status for Asian Americans in all age groups in general and older Asian Americans in particular (Yu and Liu, 1992; Uba, 1994; Zane, Takeuchi, and Yo, 1994; Frisbie, Cho, and Hum,

2001; De la Cruz et al., 2002; LaVeist, 2005; Min and Moon, 2006). Health research on Asian Americans remains scarce. Widely diverse Asian American groups are often lumped together under the category “Others,” making precise subgroup analysis of the health status of Asians untenable. In addition, a stereotypical notion of Asian Americans as the “model minority” for economic and educational achievements also contributes in part to the lack of attention to health conditions and utilization of health care services in this population. Only a limited number of studies (Kuo and Porter, 1998; Frisbie et al., 2001; Barnes, Adams, and Powell-Griner, 2008) examined the health status of Asian American adults based on population-representative national data such as the ones pooled from multiple years of National Health Interview Survey (NHIS) data. Reliable comparisons among the Asian population were made possible when the NHIS began to collect additional racial codes that expanded the existing Asian or Pacific Islander (API) category into more detailed subgroup specifications (e.g., Chinese, Filipino, Japanese, Hawaiian, Korean, Vietnamese, Asian Indian, Samoan, and Guamanian) in 1992 (Kuo and Porter, 1998). In addition, with the introduction of the California Health Interview Survey (CHIS) in 2001, the largest population-representative state health survey, health behaviors such as physical activities and smoking have been systematically examined for the first time for Asian American adults (Kandula and Lauderdale, 2005; Maxwell, Bernards, and McCar, 2005). When it comes to the older Asian population, Tanjasiri, Wallace, and Shibata (1995) provided a comprehensive presentation of socioeconomic and health status of older APIs based on selected national data such as the 1990 Census and the pooled data from NHIS. Kagawa-Singer, Hikoyeda, and Tanjasiri (1997) also provided an exhaustive overview of the health status of API elders by systematically examining the prevalence of infectious and chronic diseases, health promotion and behaviors, culturally specific responses to the diseases, and access barriers as relevant to APIs. Finally, using the 2000 Census data, Min and Moon (2006) reported on the general demographic and socioeconomic status of older Asian Americans. Specifically, approximately 78 percent of the Asian American elderly in the United States were foreign born. Those with English-language barriers varied substantially among subgroups: 28.8 percent for Japanese, 52.8 percent for Filipinos, 77.1 percent for Koreans, 84.5 percent for Chinese, and more than

90 percent for Cambodian and Laotian American elderly (Min and Moon, 2006). With regard to socioeconomic status of older Asians aged sixty-five and over, 43.6 percent of Asian American elderly had less than a high school education, 22.4 percent finished high school, and 34 percent had some college or higher education. While 9.9 percent of the overall US older population lived in poverty, 12.3 percent of the Asian American elderly population lived in poverty in 1999 (Min and Moon, 2006).

However, the knowledge gap regarding the health of older Asian Americans continues to remain substantial. The lack of empirical information about the unique needs of diverse Asian American subgroups, particularly older Asian Americans, has hampered our knowledge about the health status of specific populations and limited the ability to develop ethnically sensitive health services for these subgroups.

Asians in the United States share a common political and historical background and have many fundamental values in common. At the same time, tremendous diversity between and within the multiple subgroups exists due to distinct culture, values, history, language, national origin, immigration status, socioeconomic background, acculturation, and generation (Browne, Fong, and Mok, 1994). In addition, negative life experiences, discriminatory immigration legislation, adjustment difficulties and cultural/language barriers historically have made this population much more vulnerable, disadvantaged, and marginalized. The older immigrant Asian population in the United States faces a variety of issues such as access barriers, lack of financial resources, and poor functional and psychological health across all subgroups (Tanjasisiri et al., 1995; Min and Moon, 2006).

In light of the projection that Asian Americans will comprise more than 10 percent of the U.S. population by 2050 and the need to better understand their health status based on population-based representative data, this study presents the profiles of demographic, socioeconomic, and health status of older Asian Americans in California where 4.2 million Asians reside, making it the highest concentration of Asians in the United States (Barnes and Bennett, 2002). Based on the 2001 CHIS, which offers a unique opportunity to conduct subgroup comparisons, the study examines ethnic differences in demographic and socioeconomic status, general health

status, chronic conditions, and access to health care services for five groups of Asian Americans aged sixty or older (Chinese, Filipinos, Japanese, Koreans, and Vietnamese).

### Previous Evidence on General Health Status and Chronic Condition

General health status or self-rated health status has been known to be a powerful and robust predictor of mortality, morbidity, disability, and health service use (Idler and Benyamini, 1997). A review of limited literature shows that Asian American groups generally rated their health worse than non-Hispanic white (NHW) counterparts (Kuo and Porter, 1998; Frisbie et al., 2001; Barnes et al., 2008). Particularly for older cohorts, Villa and colleagues (1997) found that elderly Korean immigrants in Los Angeles perceived their health to be poorer than NHWs. Within-group differences were also reported among some Asian American elderly groups, but the results are somewhat mixed. For example, the Asian American Federation of New York (AAFNY) (2003) showed that 40 percent of Filipino elders self-reported their health to be excellent or very good, and 92 percent of Vietnamese American elders reported their health as excellent (2.5%) or very good (89.5%). Seventy-two percent of Koreans in New York (AAFNY, 2003) rated their health as being excellent or very good. Yet Sohn (2004) reported that the majority of Korean-American elders (69%) in Los Angeles County reported fair or poor health status.

Heart diseases, cancer, and stroke are the three leading causes of death for Asians (LaVeist, 2005). Data on mortality show that Asian elders generally have a longer life expectancy and are healthier than most other ethnic groups including NHWs, blacks, and Hispanics (Choi, 2001). In a study of health status among immigrants and U.S.-born natives aged fifty-five and over, Heron, Schoeni and Morales (2003) found that the Japanese and Chinese were the healthiest immigrant groups on all health outcomes. They also found that Japanese immigrants were the least likely to be obese with odds that are 96 percent lower than those of white natives (Heron et al., 2003). Their study indicated very positive health outcomes of the Asian adult immigrants in comparison to Puerto Rican and Mexican immigrant counterparts.

Nevertheless, these favorable figures may obscure within-group heterogeneity in health conditions among Asian elders (Kuo

and Porter, 1998; Choi, 2001). Despite the lower mortality rates of older Asian Americans on an aggregate level as compared to their white counterparts, disaggregated information suggested significantly high levels of prevalence of some chronic conditions, for example, diabetes among Japanese American (Lum, 1995). Second-generation Japanese Americans reported twice the rate of diabetes than the white population and four times the rate seen in Japan (Myers et al., 1995; Inouye, 1999). Villa and colleagues (1997) found that the rates of hypertension, arthritis, kidney disease, and functional limitation among elderly Korean immigrants were higher than those of NHWs. In addition, Cross and colleagues (2002) showed that 24 percent of the older Korean immigrants in their study reported having hypertension, and that 12 percent had diabetes mellitus. Hypertension is more prevalent among elderly Chinese and Filipino immigrants than other Asian American counterparts (Kagawa-Singer et al., 1997; Gomez et al., 2004). Hoyert and Kung (1997) pointed out that heart disease and other cardiovascular problems were the second leading cause of death for Vietnamese Americans. Duong, Bohannon, and Ross (2001) reported that hypertension was prevalent (44%) in a group of 201 Vietnamese Americans on the Gulf Coast. A comprehensive study about cardiovascular risk in the Vietnamese community in Houston, Texas, reveals that although they were concerned about cardiovascular health, the Vietnamese in Texas had little knowledge about what to do and did not seek the care they needed (U.S. Department of Health and Human Services, 2003). Finally, AAFNY (2003) reported that older Asian Americans had comorbid chronic conditions of an average of 2.2 medical problems for Filipino elders, 3.2 for Vietnamese, and 3.4 conditions for Chinese.

### Use of Health Services and Access Barriers

Health-service use by older Asian Americans has been consistently low (Yee and Weaver, 1994; Moon, Lubben, and Villa, 1998; Choi, 2001). Specifically, Moon and colleagues (1998) reported that elderly Korean Americans used community-based long-term health and social services at significantly lower rates than NHW counterparts. Choi (2001) found that older Asian Americans were significantly less likely to participate in home-delivered nutritional meal programs than whites, African Americans, and Hispanics.

The underutilization of services by the Asian American elderly has been attributed to multiple barriers such as language

difference, lack of insurance, lack of awareness and knowledge of services, reluctance in pursuing help-seeking behaviors, and a general lack of culturally appropriate services and bilingual staff (Yee and Weaver, 1994; Moon et al., 1998; Choi, 2001). According to the results from the pooled NHIS data, substantially greater numbers of Korean adults reported not having a usual place for health care compared to other Asian subgroups (Frisbie et al., 2001; Barnes et al., 2008). Sohn (2004) also found that 21 percent of older Korean Americans lacked health insurance, and 31 percent had never visited a medical doctor within the last twelve months. Southeast Asians had the highest rates of being uninsured, and Vietnamese American elders in particular are extremely hesitant to seek outside help (Kagawa-Singer et al., 1997; Yeo et al., 2001). Acculturative stress as well as linguistic and cultural barriers prevents them from accessing much-needed services. Niedzwiecki, Yang, and Earm (2003) reported that 75 percent of Vietnamese elders did not speak English well or at all. Other often-cited reasons for underutilizing services are the fear of government, transportation issues (Igasaki and Niedzwiecki, 2004), and lack of help to navigate the U.S. health care system (Ngo-Metzger et al., 2003). Niedzwiecki and colleagues (2003) found that interpretation/translation, food distribution, advocacy, citizenship instruction, health education, health services, and mental health services were among the top priorities for mutual-aid organizations serving Southeast Asian elderly.

In summary, the existing literature regarding the health of older Asian Americans indicates that although the self-rated health of Asian elders is generally worse than NHWs on an aggregate level, studies show that there are apparent within-group differences among various Asian American elderly groups in self-rated health and morbidity. For example, a higher percentage of Filipinos tend to rate their health as excellent or very good, while Korean older adults report their health less favorably. The Japanese and Chinese were found to be the healthiest groups on all health conditions. However, results of within-group differences are rather inconsistent and mixed depending on when and where the data were collected and what generation of Asian elders was researched. Obviously, the existing studies reveal that there are clear differences among various Asian groups in terms of the rate of chronic conditions, such as heart disease, cancer, stroke, and diabetes.

As shown so far, however, the majority of the existing studies on Asian American groups examined the health of a single ethnic group or a couple of groups at the most. Although the results of those studies are informative in understanding the health of Asian American elders in general, no studies have ever attempted to compare the health of five major Asian American groups of older adults in a single study systematically using a statewide representative sample. Furthermore, most of the data used in the previous studies were limited to a specific metropolitan region, such as New York, Los Angeles, and Houston. The present study is one of the first research efforts aiming to examine the possible health disparities of the statewide Asian American population of older adults, including urban and rural residents.

## Methods

### **Design and Sample**

Data for this study came from the 2001 CHIS, the largest state health survey ever undertaken in the United States. It is a collaborative project between the University of California, Los Angeles (UCLA) Center for Health Policy Research, the California Department of Health Services, and the Public Health Institute. The CHIS was conducted using a random digit dialing (RDD) telephone survey of California households designed to produce reliable estimates for the entire state, large and mid-sized population counties in the state, and groups of the smallest population counties. Data were collected between November 2000 and October 2001. The CHIS featured larger sample sizes for urban counties where a significant portion of the state's African American and Asian ethnic populations reside. Furthermore, supplemental samples were used to increase the sample size and to improve precision of the estimates for specific ethnic groups such as South Asian, Cambodian, Japanese, Korean, and Vietnamese (CHIS, 2002a; CHIS, 2002b).

This study used a subset of 2001 CHIS data from two different sources: RDD samples and supplemental samples that were merged into one set of data. From the merged data were extracted Asian adult subsamples consisting of six groups of Chinese, Filipinos, Japanese, Koreans, Vietnamese, and Southeast Asians. Subsequently, out of the six Asian subsamples, survey respondents aged sixty were further selected for this study. However, the resulting sample size for Southeast Asians was too small, and the group was



excluded from further analysis. The unweighted sample size for the remaining five groups was 213 Chinese, 135 Filipinos, 239 Japanese, 157 Koreans, and 161 Vietnamese Americans, respectively. Jackknife replicative sampling weights available in CHIS Public Use File (PUF) were applied in subsequent data analysis.

## Data Collection

Interviews were conducted in six languages: English, Spanish, Chinese (Mandarin and Cantonese dialects), Vietnamese, Korean, and Khmer (Cambodian). The interviews conducted in English were administered using Westat's computer-assisted telephone interviewing (CATI) system. Spanish- and Vietnamese-language interviews were also conducted entirely in CATI, while interviews conducted in Cantonese, Mandarin, Korean, and Khmer used English CATI screens and paper translations. For the adult survey, the overall response rate was 37.7 percent (CHIS, 2002c).

The supplemental race/ethnic samples had sampling and data collection protocols that were different from those used in the RDD samples. One of the main differences in sampling was that the race and ethnic supplemental samples were selected from special lists rather than by RDD methods. In addition, these supplemental samples were sampled at the same rate across the state rather than by using different rates by county. Although no response rates were available for the five older Asian groups, response rates for eligible adults for the supplemental race/ethnicity sample ranged from 35.3 percent for Japanese and Vietnamese to 42.5 percent for Koreans (CHIS, 2002c)

## Measures

Measures used in this study were drawn from the CHIS 2001 Adult Survey Questionnaire. It covers a broad range of health-related topics such as self-rated health status, physical limitation, chronic medical conditions, and access to and use of health care services. Many survey questions in CHIS 2001 were adapted from the NHIS and other major national and state population health surveys.

First, demographic and socioeconomic characteristics of respondents included gender, ethnicity, marital status, educational attainment, annual household income, and poverty. Also available were immigration-related characteristics such as nativity (i.e.,

country of birth), years of residence in the United States, and perceived level of English proficiency. A variable of ethnicity had five categories: Chinese, Filipino, Japanese, Korean, and Vietnamese. Information on ethnicity was based on a variable of "asianhpr," available in CHIS PUF. Educational attainment was grouped into five categories; "Less than high school education," "High school graduate," "Some college, vocational school, AA, or AS degree," "BA or BS degree," and "MA, MS, or PhD or equivalent." Annual household income was assessed in terms of "\$0-10,000," "\$10,001-20,000," "\$20,001-30,000," "\$30,001-40,000," and "\$40,001 or more." The poverty level of the respondents was obtained by using the Federal Poverty Line (FPL): "0-99% FPL," "100-199% FPL," "200-299% FPL," and "300% FPL or above." In order to assess nativity of the respondents, they were asked whether they were born in or outside the United States. Four categories were used for the duration of residence in the United States; "Less than 5 years," "5-9 years," "10-14 years," and "15 or more years." Lastly, English proficiency was measured with the question, "How well do you speak English?" with three response categories of "very well," "well," and "not well."

Second, health status of the respondents was assessed by using several indicators: self-rated health status, health limitation with moderate activities, doing less than wanted due to physical limitation, and pain interfering with normal work. In addition, the presence of chronic medical conditions was examined by asking the respondents whether doctors told them that they ever had the medical conditions. Self-rated health status was measured by a single question, "In general, would you say your health is excellent, very good, good, fair or poor?" The level of health limitation with moderate activities was assessed using a three-point scale by the question, "Does your health limit you a lot, a little or not at all in doing moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?" The question, "During the past 4 weeks, how much did pain interfere with your normal work including both work outside the home and housework?" was asked to assess the level of pain on a five-point scale ("not at all" to "extremely"). Finally, limitation in physical work was measured by asking, "During the past 4 weeks, did you do less than you wanted to do because of your physical health?" with a yes/no response. Chronic conditions were assessed with the presence of

doctor-diagnosed conditions such as arthritis, asthma, diabetes, high blood pressure, and heart disease.

Finally, a total of five questions were used to examine health care access and utilization of health care services. Data on health care access and utilization of health care services were based on self-reported responses, rather than verification of any relevant documentation such as Medicare or Medicaid cards. Health insurance coverage for those aged sixty-five years old or older was constructed by UCLA Center for Health Policy Research (CHPR), based on multiple questions about health insurance coverage and age. Information regarding usual source of care was also prepared by UCLA CHPR, which combined two questions on the specific place respondents reported going to most often when they were sick or needed advice about their health. The five response categories included "Doctor Office/HMO/Kaiser," "Community/Government Clinic/Community Hospital," "Emergency Room/Urgent Care," "Other Place/No One Place," and "No Usual Source of Care." A follow-up question, "What is the one main reason you do not have a usual source of health care?" was asked of those who reported that they did not have a place that they usually went to in order to identify the reasons for not having a usual source of care. Next, to determine the frequency a medical doctor was visited, respondents were asked about the number of times they had seen a medical doctor during the past twelve months. Finally, information about emergency room (ER) visits was obtained by the question, "Did you visit a hospital emergency room for your own health during the past 12 months?" with a yes/no response.

### Data Analysis

The primary data analysis strategy employed in this study was to provide overall descriptions of demographic and socioeconomic characteristics, health status, and use of health care services for five groups of older Asian Americans. Subgroup differences in health status were examined by using descriptive and inferential statistics. All analyses were conducted by applying Jackknife replicative sampling weights available in the CHIS PUF, which accounts for the complex survey design. First, for estimates of weighted percent and means, survey commands in Stata 9.2 (Stata-Corp, 2005) such as *svy tabulate twoway* and *svy means* were used. The test of independence was made by using *p* values associated

with the corrected F statistics that were calculated from Pearson chi-square statistics (StataCorp, 2005). Second, while investigating between-group differences in health status, binary logistic regression analyses were performed on five major health indicators (i.e., self-rated health, health limitation with moderate activities, doing less than wanted due to physical limitation, pain, and the presence of chronic conditions), controlling for the effects of demographic and socioeconomic characteristics on subgroup differences in health status. As the first step, bivariate binary logistic regressions were run between ethnicity and each of health indicators, which generated estimates of unadjusted odds ratios. Then multivariate binary logistic regressions were run in order to obtain adjusted odds ratios by adding demographic and socioeconomic characteristics to the first step. Only adjusted odds ratios from the binary logistic regression analyses and F values are presented in Table 5. Stata 9.2 generates a modified Wald-test and F values, instead of -2 log likelihood (-2LL) and chi-square statistics due to the use of Jackknife replicative sampling weights (StataCorp, 2005). The purpose of running the binary logistic regression analyses was to investigate subgroup differences in health indicators by controlling for the demographic and socioeconomic characteristics, rather than to identify any determinants of health status. The demographic and socioeconomic characteristics used for control variables included gender, age, marital status, education, household income, and poverty status.

## Results

### **Demographic and Socioeconomic Status**

Table 1 shows that there were more females than males in all of the five groups, ranging from 50.4 percent for Chinese to 61.3 percent for Japanese elders. The average age of the five Asian elder groups ranged from 68.3 (Koreans) to 71.9 (Japanese) years old. Approximately 80 percent of Korean and Vietnamese elders were between sixty and seventy-four years of age. Filipino elders comprised the highest proportion of elders aged eighty-five or older (8.8 percent). The majority of Asian elders reported to be married, ranging from 65.2 percent for Vietnamese to 73.3 percent for Filipinos. Approximately one-quarter of the older Asians in California were “not married” (e.g., widowed, separated, divorced, living with other partner) and “never married.”

Table 1: Demographic and Socioeconomic Characteristics of Older Asians in California: Findings from CHIS 2001 (weighted proportion and mean)

Ethnicity (%)	Chinese	Filipino	Japanese	Korean	Vietnamese
<b>Gender</b>					
Male	49.6	41.2	38.7	42.7	47.1
Female	50.4	58.8	61.3	57.3	52.9
<b>Age** (mean/SE)</b>	(70.2/0.71)	(69.8/1.00)	(71.9/0.49)	(68.3/0.60)	(68.5/0.53)
60–64	25.7	34.6	18.1	39.6	33.8
65–74	47.7	42.0	43.3	39.7	47.6
75–84	22.3	14.7	37.3	16.8	16.4
85 or older	4.3	8.8	1.2	4.0	2.1
<b>Marital status</b>					
Married	73.3	68.2	71.4	72.7	65.2
Not married <sup>1</sup>	23.5	27.4	24.7	26.5	29.6
Never married	3.2	4.4	3.8	0.8	5.2
<b>Education***</b>					
Less than HS	30.3	14.9	3.0	27.1	39.5
HS graduate	26.0	20.0	38.7	16.4	33.7
Some college, AA, AS	16.5	26.1	33.0	13.6	9.4
BA or BS degree	19.5	34.7	18.4	36.0	10.8
Master/PhD	7.7	4.3	7.0	6.9	6.6
<b>Citizenship***</b>					
U.S.-born citizen	10.9	3.0	86.0	2.9	0.0
Naturalized citizen	70.4	79.5	13.4	70.2	75.9
Not citizen	18.7	17.5	0.6	26.9	24.1
<b>Country of birth***</b>					
United States	11.0	3.0	86.0	2.9	0.0
Asia	86.6	97.0	14.0	97.1	100.0
Other (Mexico/ Europe)	2.5	0.0	0.0	0.0	0.0
<b>Years in the U.S.***</b>					
Less than 5 years	7.0	7.3	0.0	2.1	7.5
5–9 years	12.6	5.0	0.0	4.0	25.7
10–14 years	16.7	8.1	0.0	14.5	24.0
15 or more years	63.8	79.6	100.0	79.5	42.8
<b>Level of English proficiency***</b>					
Very well	7.8	43.3	38.8	3.5	4.1
Well	20.2	31.6	43.1	28.8	18.2
Not well	72.0	25.1	18.1	67.6	77.7
<b>Household income**</b>					
\$0–10,000	24.8	11.6	2.3	26.4	59.2
\$10,001–20,000	30.0	29.9	21.5	34.0	21.9
\$20,001–30,000	11.1	15.0	17.1	11.4	8.2
\$30,001–40,000	3.6	12.1	12.3	5.9	3.6
\$40,001 or more	31.1	31.4	46.6	22.2	7.0
<b>Poverty (FPL)***</b>					
0–99% FPL	34.4	12.4	5.6	30.9	64.0
100–199% FPL	27.5	33.7	24.1	38.9	23.6
200–299% FPL	9.1	16.6	17.9	10.5	5.0
300% FPL and above	29.1	37.3	52.3	19.7	7.3

<sup>1</sup> Widowed/separated/divorced/living with partner

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

Regarding educational attainment, 40 percent of Vietnamese elders and 30.3 percent of Chinese elders had less than twelve years of education as compared with 3.0 percent of Japanese and 14.9 percent of Filipino elders. About 17.4 percent of Vietnamese and 27.2 percent of Chinese elders had a bachelor's degree or higher educational level, while 39.0 percent of Filipino and 42.9 percent of Korean elders reported the educational level of bachelor's degree or higher. The vast majority of Japanese elders (86%) were U.S.-born citizens, while close to three-quarters of the remaining four groups were naturalized citizens. In terms of nativity, 90 to 100 percent of Chinese, Filipino, Korean, and Vietnamese elders were foreign born. Among foreign-born elders, 80 percent of Filipino and Korean elders reported having lived in the United States for fifteen years or longer. Close to 50 percent of Vietnamese lived in the United States between five and fifteen years, and 43 percent lived in the United States for fifteen years or longer.

When asked about their level of English proficiency, substantial proportions of Chinese (72.0%), Korean (67.6%), and Vietnamese (77.7%) elders reported speaking English "not well." On the contrary, 75 percent of Filipino and 82 percent of Japanese elders reported an English proficiency level of "very well" or "well." About 64 percent of Vietnamese elders lived under the FPL, followed by Chinese (34.4%) and Korean (30.9%). For Japanese and Filipinos, however, the rates were much lower at 5.6 percent and 12.4 percent, respectively.

### General Health Status and Health Limitations

Table 2 presents general health status and health limitations of five older Asian groups. Substantial differences in self-rated health status across the five groups were found. Approximately one-third of three Asian groups, Chinese (29.9%), Filipino (32.9%), and Korean (25.7%), rated their health status as either being "excellent" or "very good," while only 6.4 percent of Vietnamese elders did so. Japanese elders (42.0%) reported the highest level of "excellent" or "very good" self-rated health status. With regard to functional limitation caused by health conditions, Vietnamese elders reported the most health limitation in terms of "moderate activities" (33.6%) and "did less than wanted in the past 4 weeks" (44.5%). Also shown in Table 2 is the level of health limitation caused by pain with interference with normal work in the past four weeks.

More Vietnamese elders (26.8%) reported that pain interfered with their normal work in the past four weeks either “quite a lot” or “extremely,” followed by Korean (12.4%), Chinese (10.2%), Filipino (7.2%), and Japanese (5.9%).

Table 2: General Health Status and Health Limitations of Older Asians in California: Findings from CHIS 2001 (weighted proportion)

Ethnicity (%)	Chinese	Filipino	Japanese	Korean	Vietnamese
<b>Self-rated health status***</b>					
Excellent	6.7	8.2	14.8	7.8	2.1
Very good	23.2	24.7	27.2	17.9	4.3
Good	30.3	40.3	38.7	38.2	18.8
Fair	31.5	18.3	14.5	25.3	46.0
Poor	8.3	8.6	4.9	10.9	28.8
<b>Health limitation with moderate activities***</b>					
Limited a lot	15.4	17.9	10.5	25.8	33.6
Limited a little	34.5	36.0	27.9	22.7	29.3
Not limited at all	50.1	46.1	61.6	51.5	37.1
<b>Due to physical limitation, I did less than wanted in the past 4 weeks (yes)***</b>	31.0	26.9	23.6	28.0	44.5
<b>Pain interferes normal work in the past 4 weeks***</b>					
Not at all	48.1	30.6	49.7	51.2	35.0
A little bit	24.8	38.3	31.3	22.2	22.1
Moderately	16.9	24.0	13.1	14.2	16.2
Quite a lot/extremely	10.2	7.2	5.9	12.4	26.8

\* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001

### Prevalence of Selected Chronic Conditions

Prevalence rates were estimated for five chronic health conditions: arthritis, asthma, diabetes (or sugar diabetes), high blood pressure, and heart disease. The results are presented in Table 3. Overall, the prevalence rate of arthritis ranged from 20.0 percent to 42.0 percent. Filipino elders had the highest prevalence rate of arthritis (42.7%), followed by Vietnamese (34.3%), Japanese (28.9%), and Chinese (24.7%). Korean elders reported the lowest rate of arthritis at 20.0 percent. More Filipino (14.2%), Japanese

(14.1%), and Vietnamese elders (14.3%) suffered from asthma than Chinese (7.9%) and Korean elders (8.0%). Diabetes was the most prevalent among Filipino elders (21.6%), followed by Japanese elders (15.8%). The other three groups still had prevalence rates of diabetes of 12.7 percent for Chinese, 13.6 percent for Korean, and 13.0 percent for Vietnamese elders. Except for Chinese elders (42.8%), more than half of the other four older Asian groups reported having high blood pressure. High blood pressure was the most prevalent among Filipino elders (62.1%), followed by Vietnamese (60.9%), Korean (52.2%), and Japanese elders (51.2%). In addition, approximately a quarter of Vietnamese elders were found to have the highest proportion of those suffering from heart disease (23.1%). About two in ten Chinese or Korean elders reported having heart disease, 18.5 percent and 19.0 percent respectively. Only one in ten Japanese elders (10.9%) reported heart disease. Older Asian Americans in the study had an average of 1.2 out of 5 chronic conditions. Almost half of Filipino elders (48.1%) reported suffering from comorbid conditions (2 or more chronic conditions), followed by Vietnamese (38.5%) and Japanese (36.3%). Chinese elders were the least likely to report comorbid conditions.

Table 3: Chronic Conditions of Older Asians in California:  
Findings from CHIS 2001 (weighted proportion)

Ethnicity (%)	Chinese	Filipino	Japanese	Korean	Vietnamese
<b>Chronic conditions</b>					
Arthritis***	24.7	42.7	28.9	20.0	34.3
Asthma**	7.9	14.2	14.1	8.0	14.3
Diabetes or sugar diabetes*	12.7	21.6	15.8	13.6	13.0
High blood pressure**	42.8	62.1	51.2	52.2	60.9
Heart disease**	18.5	14.4	10.9	19.0	23.1
<b>The number of chronic conditions***</b>					
None	29.9	19.8	27.9	30.3	20.1
1	43.3	32.1	35.8	39.5	41.4
2-5	26.8	48.1	36.3	30.3	38.5

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$



## Health Insurance Coverage and Use of Health Care Services

More than 76 percent of Vietnamese elders had dual coverage of Medicare and Medicaid, followed by 56.7 percent of Koreans, 41.8 percent of Chinese, and 37.3 percent of Filipino elders. Only 10 percent of Japanese elders were dual eligible, but about 80 percent did have Medicare, combined with other forms of health insurance. The majority of five older Asian American groups (more than 75%) reported doctors' office, HMO, or Kaiser Permanente as their usual sources of care. Close to 20 percent of older Filipinos reported "community or government clinic" as a usual source of care. However, the largest number of older Koreans (16%) did not have a usual source of care, followed by Vietnamese (6.0%), Chinese (4.7%), and Filipinos (4.1%). When asked about reasons for not having a usual source of care, the predominant responses included "seldom/never sick" for Japanese (83.5%) and Chinese elders (53.2%), and "no/lost insurance" for Filipino (40.8%), Korean (27.2%), and Vietnamese (25.6%) elders. About 16 percent of Chinese and 14 percent of Vietnamese elders also cited "don't use doctors or treat self" as the reason for not having a usual source of care. Finally, the cost of care also prevented some Korean (9.2%) and Vietnamese (12.0%) elders from having usual sources of care.

On average, older Vietnamese saw a medical doctor most frequently at 6.6 times a year, Chinese 5.1 times, followed by Koreans 4.5 times, and Filipinos 3.9 times a year. Japanese elders saw a medical doctor the least frequently at 3.4 times a year. One-fifth of Vietnamese elders (19.6%) and one-sixth of Chinese elders (11.9%) did not visit a medical doctor at all. Similarly, 37.2 percent of Korean elders and 22.1 percent of Filipino elders reported that their most recent visits to a medical doctor were five years ago. About 15 percent to 32 percent saw or talked to other health professionals in addition to their own medical doctors. When asked to identify the other health professionals, almost half of them mentioned "other one type" or "more than one type." About 13 percent of Filipino elders reported "nurses" as other health professionals, and 45 percent of Korean elders reported seeing or talking to acupuncturists. Finally, more Filipino elders (21.7%) visited an ER during the past twelve months than any other Asian American groups. Only 7.4 percent of Korean elders visited an ER during the same period.

Table 4: Access to and Use of Health Care of Older Asians in California:  
Findings from CHIS 2001 (weighted proportion and mean)

Ethnicity (%)	Chinese	Filipino	Japanese	Korean	Vietnamese
<b>Type of current health coverage source for 65+**</b>					
Medicare & Medicaid	41.8	37.3	10.0	56.7	76.1
Medicare—other	38.7	43.4	79.4	22.9	17.7
Medicare only	4.0	9.9	3.9	16.8	1.4
Other only	11.1	5.1	6.6	3.1	4.8
Uninsured	4.3	4.3	0.0	0.4	0.0
<b>Usual source of care**</b>					
Doctor/HMO	80.1	76.3	96.4	79.2	88.7
Community clinic/hospital	14.7	19.6	1.3	4.4	5.2
ER/urgent care	0.5	0.0	0.5	0.0	0.0
Other place/no one place	0.0	0.0	0.6	0.3	0.0
No usual source of care	4.7	4.1	1.2	16.1	6.0
<b>Reason for not having usual source of care**</b>					
Seldom/never sick	53.2	16.7	83.5	37.3	35.6
Just moved into area	0.0	0.0	0.0	0.0	4.7
Place no longer available	0.0	0.0	0.0	3.6	0.0
Like different places	0.0	0.0	0.0	13.8	8.4
No/lost insurance	0.0	40.8	0.0	27.2	25.6
Don't use doctor/treat self	16.4	0.0	0.0	0.0	13.7
Cost of care	0.0	0.0	0.0	9.2	12.0
Other reason	30.4	42.4	16.5	8.9	0.0
<b>Number of times seen a medical doctor in the past 12 months*** (mean/SE)</b>	5.1 (0.4)	3.9 (0.4)	3.4 (0.2)	4.5 (0.4)	6.6 (0.4)
<b>Most recent visit to a medical doctor***</b>					
1 year ago or less	5.1	37.3	24.6	17.2	59.1
1 up to 2 years ago	47.0	21.7	32.4	22.5	5.4
2 up to 5 years ago	32.0	18.9	36.0	20.4	0.0
5 years ago	4.1	22.1	7.0	37.2	15.9
Never	11.9	0.0	0.0	2.6	19.6
<b>Saw or talked to other health professionals in the past 12 months (yes)***</b>	15.2	22.8	22.2	32.3	19.2
Who were other health professionals?					
Nurse	5.2	12.7	4.8	3.6	0.0
Chiropractor	18.3	2.9	17.9	1.8	0.7
Another medical doctor	10.6	22.8	29.9	0.0	20.6
Acupuncturist	5.9	4.8	1.6	45.2	13.1
Physician assistant	0.0	1.6	0.0	2.3	0.0
Other one type	35.3	27.9	38.2	13.0	41.4
More than one type	24.8	27.3	7.6	34.2	24.2
<b>ER visit during the past 12 months (yes)***</b>	17.7	21.7	17.1	7.4	14.1

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

### Adjusted Group Differences in Health Status

To further investigate the unadjusted ethnic differences in health status reported above, binary logistic regressions were performed on five indicators of health status. Table 5 presents the results in adjusted odds ratios from the multivariate binary logistic regressions. The odds ratios were adjusted by demographic and socioeconomic characteristics in order to isolate the effects of ethnicity on the observed ethnic differences in health status. According to Table 5, ethnic group differences in health status were significant on four of five health indicators, even after controlling for demographic and socioeconomic characteristics. Specifically, on self-rated health status, compared to Chinese elders as a reference category, Japanese elders were 0.5 times less likely to report poor or fair health ratings, while Vietnamese elders were 3.63 times more likely to rate their health as being “fair or poor.” Ethnic differences in health limitation with moderate activities, however, were not

Table 5: Multivariate Binary Logistic Models on Ethnicity and Health Indicators: Odd Ratios Adjusted by Demographic and Socioeconomic Characteristics<sup>1</sup>

Adjusted Odd Ratios	Self-Rated Health (1=fair/poor)	Health Limitation with Moderate Activities (1=a lot to a little)	Did Less than Wanted in the Past 4 Weeks (1=yes)	Pain Interfered Normal Work in the Past 4 Weeks (1=a little bit to extremely)	Presence of Chronic Conditions (1=one or more)
Ethnicity					
Chinese (reference)	1.00	1.00	1.00	1.00	1.00
Filipino	0.70	1.47	0.86	2.42**	2.27*
Japanese	0.50*	0.63	0.70	1.07	1.27
Korean	0.90	1.11	0.84	0.84	1.15
Vietnamese	3.63***	1.71	1.77*	1.38	1.49
F <sup>2</sup> (df1, df2)	11.01 (12, 68)	5.73 (12, 68)	2.76 (12, 68)	4.46 (12, 68)	3.30 (12, 68)
Probability > F	0.000	0.000	0.004	0.000	0.001

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

<sup>1</sup>Demographic characteristics used for adjustment included gender, age, and marital status. Socioeconomic characteristics included educational attainment, annual household income, and poverty status. For brevity of presentation, the estimates for demographic and socioeconomic variables are not reported (available upon request).

<sup>2</sup>F values are reported instead of -2 log likelihood (-2LL) and chi-square statistics for binary logistic regression models because Stata 9.2 generates a modified Wald-test and F values, due to the use of Jackknife replicative sampling weights (StataCorp, 2005).

significant across the five groups, when holding all other variables constant. For another health indicator of physical limitation, Vietnamese elders were 1.77 times more likely than Chinese elders to report that they did less than they wanted in the past four weeks due to physical limitation. Regarding two other health indicators, the odds of having pain interfering with normal work and having any chronic conditions among Filipino elders were 2.42 and 2.27 times greater than Chinese elders, respectively.

## Discussion

This study aimed to provide important baseline data on health-related issues facing older Asian Americans, using data from the 2001 CHIS. Although a great deal of health data exist on Asian American adults on the national level, few population-representative health datasets were available that focused on older Asian Americans. In addition, unlike the NHIS data collected only in English and Spanish (Kuo and Porter, 1998; Barnes et al., 2008), CHIS data offered a unique opportunity to capture a wide range of within-group diversity in socioeconomic and health status of older Asian Americans in California, including those elderly immigrants who have no or limited English proficiency because the CHIS survey was conducted not only in English but also in many other Asian native languages.

The present study found substantial variations in demographic, socioeconomic, and health characteristics among the five studied older Asian American subgroups. As for demographic and socioeconomic characteristics, a direct comparison could not be made between the present study and the 2000 Census data by Min and Moon (2006) due to the differences in terms of 1) age groups used by each study (60 years vs. 65 years old or older), 2) the number of Asian subgroups included in the analysis (5 vs. 16 groups), and 3) the location of investigation (California vs. the United States). Nevertheless, older Asians in California (22%) appeared to report a higher level of education attainment than older Asians in the United States (43.6%) in terms of "less than high school education." However, compared with the older Asian population in the United States, a higher percentage of older Asians in California reported to live in poverty, 12.3 percent and 26.7 percent, respectively. In addition, the results about health status from this study of older Asian Americans are somewhat consistent with previous

studies of Asian American adults (Kuo and Porter, 1998; Frisbie et al., 2001; Barnes et al., 2008). This study found that the overall health conditions of Vietnamese and Filipino elders were significantly worse compared to the other three groups. The older Vietnamese constituted one of the most disadvantaged groups with respect to self-reported health status such as health limitation with moderate activities and the level of physical limitation caused by pain. Similarly, older Filipinos reported the highest prevalence rates for three of the five chronic conditions such as arthritis, diabetes, and high blood pressure. Vietnamese elders also showed the highest prevalence rates of heart disease and asthma. Although controlling for demographic and socioeconomic characteristics accounted for ethnic differences in health limitation with moderate activities among the five groups, ethnic differences remained significant regarding the other four of five health indicators, even after adjusting for the effects of demographic and socioeconomic characteristics. This indicates that demographic and socioeconomic characteristics alone may not appear to explain all of the ethnic differences in health status, suggesting that additional factors such as health beliefs, health behaviors, health access, or immigration-related factors such as English proficiency are to be considered.

Some results from the study appear to be at odds with those of other small-scale studies. The present study indicated that when compared with the results from other studies, older Asians in California appeared to report worse health status in terms of several health indicators. For example, in the present study, 25.7 percent of Korean and 6.4 percent of Vietnamese elders in California rated their health as either "excellent" or "very good." Comparable results for Korean and Vietnamese elders from AAFNY (2003) were 72 percent and 92 percent, respectively. In addition, based on the present study, the rates of arthritis for those in California were substantially higher at 24.7 percent for Chinese and 20.0 percent for Korean, while AAFNY (2003) reported those rates for the two groups to be 11.5 percent and 12.5 percent, respectively. Considering that the AAFNY results were obtained from older Asians in New York aged sixty-five years or older, we expected that they would report a higher rate of arthritis than those sixty years old or older in California. Contrary to our expectation, older Asians in California reported higher rates of arthritis than those in New York. The same was true of hypertension in that we found a much

higher estimate of 60.9 percent for older Vietnamese than that of 44 percent reported by Duong and colleagues (2001).

In addition, we found in this study that older Koreans were the least likely to have a usual place for care, which is consistent with the previous study findings on Korean American adults (Frisbie et al., 2001; Barnes et al., 2008). As it points to barriers to health care access experienced by the group, a close examination may be warranted to better understand the cause and effect of "not having a usual place for care." The main reasons cited by older Koreans for being without a usual place for care were "no or lost insurance" and "cost of care," which were also reported by Filipino and Vietnamese elders. It is quite possible that older Asians may still prefer traditional practitioners of alternative therapy (Kagawa-Singer et al., 1997) or "ethnomedicine" (Frisbie et al., 2001). Although not reported in the study, when asked about other health professionals they saw aside from a physician, substantial proportions of older Korean Americans mentioned "acupuncturists." This appears to be consistent with a finding from another study by Pourat and colleagues (1999) that 42 percent of Korean American elders in Los Angeles reported using a traditional healer, including herbal and acupuncture treatment during the past year. Similarly, it should be noted that about 16 percent of Chinese and 14 percent of Vietnamese elders mentioned "don't use doctors or treat self" as the primary reason for not having a usual source of care. Even if Western medicine was identified as one of the major sources of care for older Asians in California, some of them seemed to still prefer traditional self-care or indigenous health care services, predominantly herbal and acupuncture treatment in their ethnic communities. Another study of almost three thousand Southeast Asian refugee adults (Cambodians, Hmongs, Laotians, Vietnamese, and Chinese Vietnamese) in California also found traditional health care methods to be an important part of overall health care services (Chung and Lin, 1994). This indicates that in order to develop culturally appropriate and sensitive health care policies and programs, ongoing identification of such traditional medicine and self-care practice used by older Asian Americans is critically needed (McPhee, 2002).

Furthermore, the study findings appear to suggest more complex patterns of socioeconomic and health status among older Asians than bimodal distribution as seen in previous studies

(Tanjajiri et al., 1995; Kagawa-Singer et al., 1997; Min and Moon, 2006). The bimodal distribution indicates that the socioeconomic and health status of Asian populations is typically concentrated toward the high end and the low end, leaving few in-between the two ends. A close examination of the results from this study, however, suggests a departure from the bimodal pattern. Specifically, when it comes to socioeconomic status as measured by poverty rates, older Japanese Americans reported the lowest level at 5.6 percent, and Vietnamese elders represented the most disadvantaged group with 64.0 percent, showing two extreme ends. However, Filipinos (12.4%), Koreans (30.9%), and Chinese (34.4%) were distributed evenly between the two extreme ends, although Chinese and Koreans were similar to each other. The pattern is true of household annual income. As for health status, it does not appear to be any discernible bimodal pattern, either. For example, in the case of self-rated health status, it is consistent with the distribution seen in socioeconomic status above in that only 20 percent of older Japanese Americans reported self-rated health as being "fair" or "poor," while 75 percent of Vietnamese elders rated their own health as fair or poor. The other three groups are found to be in-between the two groups: Filipino (26.9%), Koreans (36.2%), and Chinese (39.8%). In summary, the study results appear to demonstrate a departure from the bimodal pattern in socioeconomic and health status among older Asians. Instead, the pattern of socioeconomic and health status across older Asians may differ by an indicator utilized and reflects increasing diversity and complexity in understanding multifaced health needs of older Asians.

The limitations of this study need to be noted. First, the scope of this study is limited to presenting population-based estimates of demographic, socioeconomic, and health status of older Asian Americans and to conducting preliminary comparisons of health status across the five subgroups by controlling for demographic and socioeconomic status. Various models explaining health outcomes as well as information about determinants contributing to health differences observed in the subgroups were not presented in this study. A separate study is needed to explain how and why such ethnic differences in health indicators exist across subgroups of older Asian Americans. Second, the reported response rate for CHIS 2001 adult survey from which a subset data was drawn from was 37.7 percent. This appears to be much lower than the final

response rate of 73.8 percent in the National Health Interview Survey (NHIS) Adult Sample Person component from 2001 NHIS (National Center for Health Statistics, 2003). Obviously, in survey research, low response rates may introduce bias into survey results and influence the representativeness of the sample and the generalizability of the survey findings. Yet widely different calculation methods are used for response rates by each survey, which makes it difficult to make a direct comparison solely on the response rates. However, the response rate of CHIS 2001 appears to be consistent with the one obtained for the 2002 Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System survey conducted in California. Both surveys use a similar calculation method for response rates. Nevertheless, caution should be exercised in generalizing the results from our study to other older Asian American groups in the U.S.. Third, because CHIS data were collected from the community-dwelling population, institutionalized individuals were not included in the analysis. It is quite likely that health concerns of the institutionalized Asian American older adults would be far greater, and that their health status would be worse than those included in the study. More information is needed to better understand that segment of the population. Finally, there is a general consensus that availability of social relationships and networks (Berkman and Syme, 1979; Seeman et al., 1993) is closely associated with health status and mortality. Given that older Asian Americans put greater emphasis on harmony within the family, collectivistic values, and family-based decision-making preferences (Blackhall et al., 1995; Min, 2005), the unavailability of such information based on reliable and valid scales in the survey data prevented us from examining social relationships and their overall impact on the health of older Asian Americans.

Despite the limitations of this study, our findings have several implications for practice and research regarding older Asian Americans. With regard to practice implications, health disadvantages and challenges faced by Vietnamese and Filipino elders call for careful group-specific attention and responses from health care practitioners. For example, Vietnamese Americans have been consistently reported to have lower socioeconomic status and poorer health conditions due to multiple factors such as refugee experiences, language barriers, and traditional health beliefs (McPhee, 2002). Filipino elders who may be less likely to experience lan-



guage barriers reported poor health conditions. This is only one of the many examples demonstrating subgroup differences and complexities that should be addressed in diagnosis, assessment, and service provision for older Asian Americans. Health care practitioners should stay informed of such complexities and be responsive to the different needs of the population in their practice. Approximately two-thirds of all Asian American older adults in the study reported at least one chronic condition. Somewhere between 27 percent (Chinese) and 48 percent (Filipinos) of the older Asian Americans suffer from comorbid conditions. In light of the pervasive nature of chronic conditions in this population, more culturally adopted chronic-care management interventions (Wagner, 1998; Lorig et al., 1999; Lorig et al., 2001) should be developed, implemented, and tested in order to help older Asian Americans suffering from chronic conditions with associated burdens and challenges. Furthermore, continued efforts should be made to identify sources of access barriers and to eliminate such barriers by developing proactive health education, outreach programs, and health-related resources. Similar to other immigrant groups in the United States, Asians tend to live in the concentrated residential and business communities of “ethnic enclaves” such as Chinatown, Koreatown, and Little Saigon (Portes and Rumbaut, 2006). In order to make these efforts more relevant to the populations of interest, particular attention should be paid to community-based approaches to health care services, so that future interventions should build upon and take advantage of the existing community structure and resources. Lastly, the findings from this study raise many additional questions that can only be answered by future research. Previous studies on health disparities between NHWs and black populations established that socioeconomic status is the most influential and significant factor in accounting for the disparities. Due to salient characteristics of Asian American populations based on their immigration experiences, substantial variations exist between and within subgroups in terms of nativity, length of residence in the United States, English proficiency, acculturation, and cultural norms, which are expected to impact the perception of one’s health and management and prevention of chronic conditions. As such, future studies need to focus on multifaceted dimensions in the investigation of health status and health care utilization for these two groups of older Americans. In conclusion, it is

hoped that the study results generated from the statewide population representative survey will provide an important knowledge base for understanding the overall health of older Asian American groups. It is also hoped that the study will contribute to the development of culturally responsive health policies, prevention/intervention programs, and services for the population.

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