10-2015

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An Occasional Paper

INSTITUTE FOR ASIAN AMERICAN STUDIES

October 2015

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Abstract

Purpose: This study examined the health and mental health status among U.S. Chinese, Filipino, Asian Indian, other Asian/Pacific Islander (API), and non-Hispanic White older adults, using nationally representative data. **Method:** An aggregated data file from the National Health Interview Survey from 2000 to 2009 was analyzed. The sample included 848 Chinese, 823 Filipino, 337 Asian Indian, 1,488 "other API," and 74,042 non-Hispanic White older adults aged 65 and older. Bivariate and multivariate analyses were used to compare the health and mental health status among different ethnic groups of older adults and to identify related factors. **Findings:** The descriptive statistics reveal statistically significant differences in sociodemographic characteristics, health needs, and health insurance coverage among different groups of Asian American older adults. Compared with non-Hispanic White older adults, Chinese, Filipino and other API older adults reported worse health (Chinese: OR = 0.67, 95% CI = 0.52–0.83; Filipino: OR = 0.66, 95% CI = 0.50–0.88; other API: OR = 0.61, 95% CI = 0.49–0.75). Asian Indians were not significantly different from non-Hispanic Whites in their self-reported health. In terms of mental health, Asian Indian older adults ($\beta = -0.014$, $p < 0.001$) had statistically significant lower levels of psychological distress compared with non-Hispanic Whites, while those of Chinese and Filipino older adults were not significantly different from non-Hispanic Whites. **Discussion:** Understanding similarities and differences in health and mental health needs among different groups can help social work professionals provide the best services to these populations. The limitations of using the NHIS data set are discussed as well as suggestions for data collection on Asian American older adult populations.

Key Words: older adults, Asian ethnic groups, health, mental health

Introduction

The United States is becoming more ethnically diverse, with a rapidly growing Asian American population. At the same time, the graying of America brings with it the need for special consideration for America's ethnic minorities. According to 2010 Census data, the Asian American population numbered 14.7 million, and 9.4% of them were aged 65 and over (U.S. Census Bureau, 2010). Between 2000 and 2010, the Asian American population in the United States increased by 43.3%, just surpassing the Hispanic growth rate of 43.0% for the same period (U.S. Census Bureau, 2000 & 2010). Overall, Asian American older adults represented 3.8% of the total American population over aged 65 and over. They are the fastest-growing ethnic minority group over age 65, mainly from immigration (Leclere, Jensen, & Biddlecom, 1994).

The recent increase in research on racial/ethnic health disparities in the United States has led to growing attention to diversity and heterogeneity within large racial/ethnic populations. Asian Americans in the United States are not a homogeneous group. Under the Asian American label, there are more than 30 ethnic groups. Each group has a unique language, culture, and tradition, and a different history in the United States. Among 14.7 million Asian Americans in the United States, or 4.8% of the total population, five groups numbered one million or more and together accounted for about 80% of the Asian American population: Chinese, Asian Indian, Filipino, Vietnamese, and Korean. The Chinese was the largest group, representing about 22% of the Asian American population, followed by Asian Indian (20%), and Filipino (18%). Together, these top three groups made up 60% of the Asian American population (U.S. Census Bureau, 2010). Nationally based data for Asian American older adults are sparse, due primarily to the slow process of change in ongoing national surveys and methodological problems in the gathering of such data (Yu & Liu, 1994). When data on Asian American are collected, despite the vast diversity, it is often not broken down for subgroups.

The growing heterogeneity of the Asian and Pacific Islander (API) population calls into question the logic of grouping these population subgroups under one category. The limited existing aggregate data on Asian American older adults tend to paint a deceptively positive picture of "model minority" health and well-being. Some researchers concluded that the health of Asian American older adults appears equivalent to, if not better than, that of other older adult groups (Gelfand, 2003; Markides, 1987). Many researchers pay attention only to the success of some segments of the population and not to the severe problems of others. This is the myth of the model minority, which holds that Asian populations have succeeded in countries outside their homelands because of special cultural values and behaviors (Lin-Fu, 1988). In opposition to the model minority stereotype, some researchers have pointed out the continued and glaring disparities in health and welfare of particular groups of Asian American immigrants (Zane, Takeuchi, & Young, 1994). Tanjasiri,

Wallace, and Shibata (1995) argue that aggregate data on Asian American older adults cloud the bimodal distribution in socioeconomic and health status.

The use of over-generalized ethnic aggregate categories masks the high degree of heterogeneity known (or suspected) to exist across national origin groups with respect to socioeconomic status, health status, and cultural characteristics. In addition, this approach misses the opportunity to observe the unique health needs of specific Asian American ethnic groups living in the United States. It is clear that a timely response to the growing demand for a social work knowledge base on Asian American elders is needed. Furthermore, a better understanding of the similarity and difference of health and mental health needs among subethnic groups of Asian American older adults is important because of the dramatic increase in their population and great internal heterogeneity.

In recent years, a few studies have examined the health and disability disparities within in the elderly Asian American population using nationally representative data. Using datasets from the National Health Interview Survey 2001–2003, Coustasse, Bae, Arvidson, and Singh (2008) examined disparities in self-reported activities of daily living (ADL) and instrumental activities of daily living (IADL) disability among elderly Asian American subgroups. The results showed the intergroup variability among the elder Asian American subpopulations, indicating that the elder Chinese subgroup accounted for the highest ADL and IADL disability, while the Asian Indian subgroup reported the lowest ADL and IADL disability rates. Using the 2006 American Community Survey, Fuller-Thomson, Brennenstuhl, and Hurd (2011) compared disability rates among older adults in aggregated and separated Asian American/Pacific Islander subpopulations. The results found disability rates in older adults varied more among AAPI subpopulations than between non-Hispanic Whites and the aggregated Asian group, therefore providing evidence that the aggregation of Asians into one group obscures substantial subgroup variability and fails to identify the most vulnerable groups.

An improved understanding of various ethnic Asian American older adults' health needs is very important to health care providers and health service researchers. Differences among Asian Americans in socioeconomic status, health insurance coverage, immigrant status, and cultural characteristics may affect health status, health-seeking behavior, and access to health services. Health care needs, therefore, vary by ethnicity and economic status. Identification of ethnic differences is important for health service providers and researchers (Diwan, Jonnalagadda, & Balaswamy, 2004; Wolinsky & Johnson, 1991). Health care providers know their services are most effective when tailored or customized for the specific health needs of the target population being served.

Using 10 years of aggregated data from the National Health Interview Survey 2000–2009, this study described and compared

the health and mental health status among U.S. Chinese, Filipino, Asian Indian, and other API older adults, and identified factors related to health and mental health status for Chinese, Filipino, and Asian Indian older adults by using this nationally representative dataset.

Method

Data

This study used data derived from the National Health Interview Survey (NHIS), a national household survey on health status and service utilization of the civilian non-institutionalized population of the United States that is conducted annually by the National Center for Health Statistics. The main objective of the NHIS is to monitor the health of the American population through the collection and analysis of data on a broad range of health topics. The NHIS uses a multistage area probability design and collects data by computer-assisted personal interviewing with household adult respondents. From each family in the NHIS, one sample adult is randomly selected and information on the sample adults is collected with the Sample Adult Core questionnaire, which collects detailed information on health status, health care services, and health behaviors. The NHIS has been designed to produce estimates for the nation (Botman, Moore, Moriarity, & Parsons, 2000; Parsons, Moriarity, Jonas, et.al. 2014).

Beginning in 1992, the NHIS added Asian American ethnic group detail to the "race" item for Japanese, Chinese, Filipino, Asian Indian, Korean, and Vietnamese. These six groups together compose about 90% of the Asian American population. Then, in 1996, the categories for the four smaller groups—Japanese, Asian Indian, Korean, and Vietnamese—were combined into the "other Asian and Pacific Islander" group for data release. Beginning in 1997, the categories for the three bigger groups, Chinese, Filipino, and Asian Indian were reported and the other three smaller groups were combined into the "Other Asian and Pacific Islander" group. Starting in 1998, the NHIS collected information on citizenship status.

Finally, 10 years of data (2000–2009) were pooled to yield sufficient statistical power to explore the health status and mental health status among specific Asian American subgroups. The comparison group was non-Hispanic White older adults of the same time period. The sample included 848 Chinese, 823 Filipino, 337 Asian Indian, 1,488 other API, and 74,042 non-Hispanic White older adults aged 65 and older. Estimates were weighted with a person-centered weight to represent all U.S. non-Hispanic White and Asian American older adults aged 65 and over and to avoid inappropriately small standard errors. Unweighted subpopulation size is shown in Table 1 and weighted subpopulation size is shown in Table 2.

Variables

Dependent variables of this study included health status and mental health status. Health status was measured by a standard NHIS question that asks the respondent to rate his or her health as excellent, very good,

good, fair, or poor. For the sample adults, respondents were asked to rate their current state of health compared to 1 year ago on a 3-point scale: *better*, *worse*, or *about the same*. Mental health status was measured by the Kessler 6 scale (K6), developed by Ronald C. Kessler. The K6 asks about six manifestations of nonspecific psychological distress. Respondents were asked how often, during the past 30 days, they *felt so sad that nothing could cheer them up*; *nervous*; *restless or fidgety*; *hopeless*; *that everything was an effort*; and *worthless*. Acceptable responses fell into five categories, ranging from "*none of the time* (0 points)" to "*all the time* (5 points)." The range for summed responses on the K6 Scale is thus 0 to 24, with 0 suggesting the lowest level of nonspecific psychological distress, and 24 suggesting the highest level of nonspecific psychological distress. According to the scoring criteria proposed by Kessler, people with a score of 13 or greater are likely to be experiencing severe mental illness.

Independent variables of this study included sociodemographic characteristics, health insurance, and health needs. The selection of the independent variables was based on the Andersen's Behavioral Model of Health Service Utilization. The Behavioral Model of Health Service Utilization was initially developed in the late 1960s to understand why families use health services and to define and measure equitable access to health care. This model posits the actual use of health care service as a function of three factors: predisposing, enabling, and need factors (Andersen, 1968). The predisposing factors include demographic characteristics (e.g., age, gender, and marital status), social structural characteristics (e.g,. education, social class, race, ethnicity, and employment status) and health beliefs (attitudes, values, and knowledge of health and health service). The enabling factors refer to resources or means that enable individuals to obtain service, as well as resources or means that may impede service use. These include individual resources and community resources, such as health insurance, income, regular sources of care, availability, accessibility and affordability of services, and residence. Finally, the need factors have been conceptualized either as need perceived by the individual or need evaluated by professionals. Guided by this conceptual framework, available variables representing these three factors from the datasets were selected as independent variables.

The sociodemographic measures included in this study were age (65–74, 75–84, or 85 years and older), gender, marital status (married or not married), education (less than high school, high school graduate, or more than high school), citizenship (U.S.-born citizen, naturalized citizen, or non-U.S. citizen), living arrangement (live alone, or live with others), and poverty status. Poverty status is a variable created from the ratio of the family's income to the corresponding poverty threshold. Family income less than 100% of the poverty threshold was coded as "poor"; between 100% and 199% of the poverty threshold was coded as "low income"; between 200% and 399% of the poverty threshold was coded as "middle income";

and 400% and more of the poverty threshold was coded as "high income."

The NHIS has a full range of data items addressing health insurance. First, a dichotomous variable was created to code respondents as insured or uninsured. Furthermore, three dichotomous variables were created to indicate whether respondents had three main types of health insurance: private, Medicare, and Medicaid. Access to medical care was measured by having a usual place for medical care. The sample adults were asked if they had a place (or more than one place) where they usually went when they were sick or needed advice about their health.

Five variables were used to measure respondent's health needs: activities of daily living (ADL) limitation, instrumental activities of daily living (IADL) limitation, activity limitation, functional limitation, and health conditions. ADL indicates whether the individual needed the help of someone else with personal care needs (eating, bathing or showering, dressing, using the toilet, getting around inside the home, and getting in or out of bed or chairs) because of a physical, mental, or emotional problem. An affirmative response to any of six questions is recoded in ADL as the person having an ADL limitation. IADL indicates whether the person currently needed the help of someone else in handling routine needs (such as everyday household chores, doing necessary business, shopping, or getting around for other purposes) because of a physical, mental, or emotional problem. The affirmative response was coded as limited. The measures of activity limitation and functional limitation were overall measures of activity limitation and functional limitation defined by the NHIS. Activity limitation is a summary measure that indicates whether a person is limited in any way. Functional limitation is a summary measure that indicates whether a person is limited in any way in various functional activities. Health conditions is a summary measure that is created from the sum of identified health conditions from 22 medical conditions such as arthritis, heart trouble, cancer, and hypertension.

Statistical Analysis

All statistical analyses in this study were conducted using the STATA software Version 11. Chi-square (χ^2) statistics were used to test for differences in sociodemographic characteristics, health status, limitation status, and mental health status among ethnic groups. Ordered logistic regression analysis was used to examine the factors that predict health status. Lineal regression analysis was used to examine the factors that predict mental health status.

Findings

Descriptive and Bivariate Results

Table 3 describes the sociodemographic characteristics of the Asian American older adults by ethnic groups. There were differences of age (χ^2 (8) =420000, $p < 0.000$) and gender (χ^2 (4) =150000, $p < 0.000$) among Asian American older adults by ethnic groups. Among three groups of Asian American older adults, Chinese had the highest

mean age (73.81 years), whereas Asian Indians were the youngest (71.00 years). Asian Indian older adults were younger than Chinese (t = -2.82, p < 0.000) and Filipino (t = -2.00, p < 0.000) older adults, and Filipino older adults were significantly younger than Chinese older adults (t = 0.82, p < 0.000). Both Chinese and Filipino older adults had more women than men, while Asian Indian older adults had more men (58.32%) than women (41.68%).

There were differences of marital status (χ^2 (4) =110000, p < 0.000) and living arrangement (χ^2 (4) =900000, p < 0.000) among Asian American older adults by ethnic groups. The majority of Asian American older adults were married and not living alone. The Filipino group had the highest percentage of older adults who were not married (39.41%), and Asian Indians had lowest percentage of older adults were not married (30.13%). With regards to living arrangement, the Filipinos had the highest percentage of older adults who lived alone (18.35%), while Asian Indians had the lowest percentage of older adults who lived alone (8.71%).

There was a difference of education (χ^2 (8) =720000, p < 0.000) among Asian American older adults by ethnic groups. The Filipinos had the lowest percentage of older adults who reported less than a high school education (18.08%), whereas the Chinese had the highest percentage of older adults who reported less than a high school education (30.49%). More than half of the Filipino (58.98%) and Asian Indian (53.13%) older adults reported more than a high school education.

There was a difference of poverty status (χ^2 (12) =690000, p < 0.000) among Asian American older adults by ethnic groups. The Chinese had the highest percentage of older adults who were poor (16.66%) or low income (24.85%), the Filipinos had the highest percentage of older adults who were middle income (27.93%), and the Asian Indians had the highest percentage of older adults who were high income (49.78%).

In terms of citizenship status, there was a difference (χ^2 (8) =720000, p < 0.000) among Asian American older adults by ethnic groups. Asian Indians had the highest percentage of noncitizen older adults (28.80%), followed by the Chinese (23.13%) and Filipino (13.38%). Filipinos had a significantly higher percentage (21.55%) of U.S.-born citizens compared with both Chinese (14.38%) and Asian Indian (0.81%). Asian Indians had the highest percentage of naturalized citizens compared with the Chinese and Filipinos.

Table 4 summarizes the health insurance status of Asian American older adults by ethnic groups. Compared with non-Hispanic White older adults, all Asian American older adults were statistically significantly more likely to be covered by Medicaid but less likely to be covered by health insurance in general, Medicare, and private health insurance. Among Asian American older adults, Asian Indians had the lowest coverage of health insurance in general (91.32%) and Medicare (68.59%) but the highest coverage of Medicaid (21.49%). Chinese older adults had the highest coverage (41.58%) of private insurance and Filipinos had the

lowest coverage (35.65%) of private insurance. In terms of access to medical care, all Asian American older adults had statistically significant lower rates than non-Hispanic White older adults. Asian Indian older adults had the lowest rate among all Asian American ethnic groups.

Table 5 summarizes the health and mental health status of Asian American older adults by ethnic group. Filipino older adults reported the lowest percentage of poor self-rated health and Chinese older adults reported the lowest percentage of excellent self-reported health. When asked about health compared with 1 year ago, Chinese older adults reported the highest percentage of worse health, while Filipino older adults reported the lowest percentage of worse health. Compared with non-Hispanic White older adults, all Asian American older adults had statistically significantly less activity limitation, functional limitation, and number of health conditions. Chinese older adults reported the highest percentage of ADL and IADL limitation, while Asian Indian older adults reported the lowest percentage of ADL limitation. In terms of mental health, Asian Indian older adults were statistically significantly less psychologically distressed compared with all other groups.

Multivariate Results

Table 6 shows the odds ratios (ORs) from ordered logistic regressions for self-reported health status indicators after controlling for sociodemographic variables, including race/ethnicity, age, gender, marital status, education, living arrangement, poverty status, citizenship, insurance, and limitations. The ordered logistic regression model for all older adults was significant (χ^2 (21) = 8763.17, $p < 0.000$). Compared with non-Hispanic White older adults, Chinese, Filipino, and other API older adults had statistically significantly worse self-reported health (Chinese: OR = 0.67, 95% CI = 0.52–0.83; Filipino: OR = 0.66, 95% CI = 0.50–0.88; other API: OR = 0.61, 95% CI = 0.49–0.75). The Asian Indians were not significantly different from the non-Hispanic Whites after controlling for sociodemographic characteristics and health insurance. In other words, all Asian groups except Asian Indian had lower odds to be healthier than non-Hispanic Whites (Chinese: 33%, Filipino: 34%, other API: 39%). For all older adults, significant predictors included age, gender, marital status, education, poverty status, citizenship, health insurance, access to medical care, limitations, and health conditions. Older adults who were 85 years old and above, female, not married, living alone, more educated, higher income, with no access to medical care, no limitations, and fewer medical conditions, are more likely to have higher self-reported health. In addition, naturalized citizens reported worse health.

The ordered logistic regression model for Asian American older adults was significant (χ^2 (20) =329.97, $p < 0.000$). For self-reported health, there was no significant difference between Chinese and any of the other Asian groups—Filipino, Asian Indian and other APIs—holding all other variables constant. For Asian American older adults, significant

predictors included education, living arrangement, poverty status, citizenship, limitations, and health conditions. Older Asian Americans who had more than a high school education, lived alone, were middle income and above, had no limitations and fewer medical conditions had better self-reported health status. Naturalized citizens had worse self-reported health.

Table 7 shows the findings from linear regressions for mental health indicators after controlling for sociodemographic variables, including race/ethnicity, age, gender, marital status, education, living arrangement, poverty status, citizenship, insurance, and limitations. The linear regression model for all older adults was significant (F (17, 25402) =186.24, p < 0.000). Compared with non-Hispanic White older adults, Chinese and Filipino older adults were not significantly different after controlling for sociodemographic characteristics and health insurance. Asian Indian older adults (β = -0.014, p < 0.001) had statistically significant lower levels of psychological distress compared with non-Hispanic Whites. For all older adults, significant predictors included age, gender, marital status, education, marital status, poverty status, citizenship, access to medical care, limitations, and health conditions. Older adults who are older, male, not married, live alone, have access to medical care, have no limitations, and fewer medical conditions have lower levels of psychological distress. In addition, naturalized citizens have higher levels of psychological distress.

The linear regression model for Asian American older adults was significant (F(16, 791) = 8.87, p < 0.000). Compared with Chinese older adults, Filipino and other API older adults were not significantly different after controlling for sociodemographic characteristics and health insurance. Compared with Chinese older adults, Asian Indians (β = -0.088, p < 0.001) had significantly lower levels of psychological distress. For Asian American older adults, significant predictors included access to medical care, limitations, and health conditions. Older Asian Americans who had access to medical care, no limitations, and fewer medical conditions, reported lower levels of psychological distress.

Discussion

The descriptive and bivariate results indicate that sociodemographic characteristics, health and mental health status, and health insurance status vary among Chinese, Filipino, and Asian Indian older adults. Specifically, Asian Indian older adults were different from Chinese and Filipino older adults in many aspects of sociodemographic characteristics and health insurance status. They are younger, more often male, less likely to live alone, have higher levels of education, are less likely to be poor, more likely to be noncitizens and foreign born, and statistically significantly less likely to have health insurance coverage in general and Medicare coverage.

These findings are not surprising. Under the Asian American label, there are more than 30 ethnic groups. Each group has a unique language and culture tradition and a different history in the United States.

Chinese have the longest history in the United States, although Asian Indians compose the largest Asian immigrant group in the 21st century. Therefore, generalizations about Asian older adults are problematic. In fact, the findings support the heterogeneity of Asian older adults in the United States with respect to ethnic composition, immigration history, language, religion, and other sociodemographic variables.

Furthermore, the findings indicate that the majority of these three ethnic groups of Asian American older adults were foreign born. Literature on older immigrants classifies the older foreign-born population into two categories based on their migration pathways. The "invited elderly" refers to late-life immigrants invited to reunite with their adult children and/or family members, whereas "the immigrated elderly" refers to those who immigrated in their 30s and 40s and have grown older in the United States (Min, 1998). Since "the immigrated elderly" have grown older in the country, they are likely to have better English skills, a higher degree of acculturation, and more access to health insurance. Different pathways to immigration among Asian American older adults contribute to the heterogeneity of this population. For example, due to having the longest immigration history in the United States, Chinese Americans have a higher proportion of "the immigrated elderly" than other Asian American older adult groups. On the contrary, Asian Indians have a much higher percentage of "the invited elderly."

The multivariate analyses results show that Chinese and Filipino older Americans self-reported as less healthy than non-Hispanic White older adults after controlling for sociodemographic characteristics and health insurance coverage. However, Asian Indian older adults were not significantly different from non-Hispanic White older adults statistically. For self-reported health, there was no significant difference between Chinese and any of the other Asian groups. Regarding mental health status, the results indicate that Asian Indian older adults had significantly lower levels of psychological distress than other groups. It is not known the explanations for these findings, and future research is needed to further explore this area.

For factors that predict health and mental health status among older adults, this study confirmed some common suspects. Older adults with higher education, higher income, no limitations, and fewer medical conditions reported better health. Older adults with no limitations and fewer medical conditions reported better mental health. On the other hand, this study also reveals some surprising findings. Older adults, who were older, not married, and lived alone, reported better health and mental health. Women reported better health, although men reported better mental health. Older adults with no access to medical care reported better health, whereas those having access to medical care reported better mental health. Finally, naturalized citizens reported worse health and mental health compared with native and noncitizen older adults. One possible explanation for some of these surprising findings

is the measurements of health and mental health. Both health and mental health status in this study are self-reported subjective measures. When older adults were asked to assess their own health and mental health status, they most likely compared themselves with people around them. Therefore, older adults who are older, not married, and live alone might think they were doing pretty well as an older adult who survived into later adulthood. Another important note is that this study does not examine causality. Thus some of these significant variables may not be a causal factor of health well-being, but merely correlational. More studies that focus on causal relationships are needed to better understand health and mental health disparities among older Asian Americans.

Some strengths of this study include the use of data from a nationally representative sample and disaggregated data on subgroups of Asian Americans. However, there are several limitations with using the NHIS data set. When data on Asian Americans are collected, it is often not broken down for many subethnic groups. In cases when information on subgroups was gathered, most previous research analyzed the Asian American population as a whole because of a lack of a subsample big enough to enable intra-ethnic distinctions to be made in multivariate analyses, especially for older populations. In order to investigate population-specific information on health and mental health among major subgroups of Asian American older adults, NHIS was the first choice because of its large sample size, consistency, rich information on service utilization, and detailed information on subgroups of Asian Americans. However, the NHIS public use data sets only contain information regarding three population groups: Chinese, Filipino, Asian Indian, and an aggregated category "other Asian and Pacific Islander" beginning in 1997. Although NHIS has a large annual sample size, the Asian American older adult subpopulation is still very small. Therefore, 10 years of data (2000–2009) were pooled to yield sufficient statistical power. Even though there were no major social or health policies implemented or changed during the time period, results based on 10 years of combined data provided a source to confound the findings of health and mental health status across different ethnic groups of Asian American older adults.

Additionally, other important constructs that could explain the health and mental health status among Asian American older adults are not available in the NHIS. It has been documented that cultural background, health beliefs, pre-immigration experience, age at immigration, degree of acculturation, and language ability are very important factors influencing older adults' health status and service utilization, especially among older immigrants. However, there are no constructs in the NHIS that capture these important aspects of respondents. Although length of stay in the United States is an available immigration-related variable besides citizenship status in the NHIS, it was omitted here due to a high percentage of missing data.

The NHIS has very rich measures on specific disease-related variables, but measures on objective general health and mental health are very limited. Lastly, the NHIS survey is not conducted in Asian languages, which can significantly prevent older immigrants with limited English proficiency from participant in the data collection.

Despite limitations related to data and measurement, to my knowledge this study is the first to examine the health and mental health status of Chinese, Filipino, and Asian Indian older adults using the NHIS. The findings of this study document the heterogeneity in sociodemographic characteristics, health insurance, and health needs of Chinese, Filipino, and Asian Indian older adults, which highlights the importance of collecting specific ethnic identification information in larger data sets. Furthermore, because of the high proportion of immigrants among Asian American older adults, systematically tracking immigrant-related information will enable researchers to better understand the influence of immigrant-related factors on health and mental health status among older immigrants.

Since information about the basic characteristics and service needs of Asian American older adults is scarce, the current national public data sets should contain more detailed race categories for Asian Americans and provide surveys in Asian languages to accurately reflect the composition of this population. Particularly, in order to study specific subgroups of Asian American older adults, each group should be oversampled to reach an adequate sample size for future analysis.

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Table 1. Subpopulation Size of Non-Hispanic White and Four Asian Ethnic Groups of Older Adults (age 65 and above) by Year (Unweighted)

Year	Non-Hispanic White	Chinese	Filipino	Asian Indian	Other API	Total
2000	8,505	65	49	24	111	8,754
2001	8,318	68	49	19	118	8,572
2002	8,010	58	44	25	112	8,249
2003	7,796	67	55	26	90	8,034
2004	8,077	53	52	21	105	8,308
2005	8,418	74	71	29	146	8,738
2006	5,908	118	116	35	195	6,372
2007	6,027	97	110	39	173	6,446
2008	5,946	108	110	53	210	6,427
2009	7,037	140	167	66	228	7,638
TOTAL	74,042	848	823	337	1,488	77,538

Table 2. Subpopulation Size of Non-Hispanic White and Four Asian Ethnic Groups of Older Adults (age 65 and above) by Year (Weighted)

Year	Non-Hispanic White	Chinese	Filipino	Asian Indian	Other API	Total
2000	27,254,614	206,108	137,939	67,125	306,736	27,972,522
2001	27,161,711	206,734	174,782	64,150	351,306	27,958,683
2002	27,334,134	189,034	145,970	77,701	344,264	28,091,103
2003	28,479,888	222,216	162,519	89,594	291,289	29,245,506
2004	28,724,629	178,959	166,781	69,756	319,755	29,459,880
2005	28,723,412	227,741	234,060	96,795	457,423	29,739,431
2006	28,884,398	268,955	304,057	99,425	460,588	30,017,423
2007	29,233,928	251,510	329,111	101,994	514,829	30,431,372
2008	29,882,769	270,490	288,402	148,298	555,771	31,145,730
2009	30,420,979	297,276	389,990	177,104	472,219	31,757,565
TOTAL	286,100,459	2,319,023	2,333,611	991,942	4,074,180	295,819,215

Table 3. Sociodemographic Characteristics of Asian American and Pacific Islander Older Adults (United States, 2000–2009)

	Non-Hispanic White	Chinese	Filipino	Asian Indian	Other API	*p* value*
Age, y (mean)	74.55[a]	73.81[b]	73.00[c]	71.00[d]	73.85[e]	0.000 **
65–74	52.05%	57.98%	62.40%	73.88%	57.01%	0.000
75–84	36.52%	30.05%	31.69%	22.33%	34.80%	
85+	11.43%	11.97%	5.91%	3.79%	8.19%	
Gender						
Male	43.10%	46.43%	40.57%	58.32%	38.35%	0.000
Female	56.59%	53.57%	59.43%	41.68%	61.65%	
Marital status						
Not married	41.12%	33.60%	39.41%	30.13%	39.24%	0.000
Married	58.88%	66.40%	60.59%	69.87%	60.76%	
Education						
< High school	20.11%	30.49%	18.08%	27.63%	24.89%	0.000
High school graduate	38.66%	24.49%	22.94%	19.24%	36.39%	
> High school	41.22%	45.02%	58.98%	53.13%	38.72%	
Citizenship						
U.S.-born citizen	94.52%	14.38%	21.55%	0.81%	35.42%	0.000
Naturalized citizen	4.61%	62.50%	65.07%	70.39%	47.47%	
Non-U.S. citizen	0.88%	23.13%	13.38%	28.80%	17.11%	
Living arrangement						
Not alone	68.01%	82.45%	81.65%	91.29%	79.72%	0.000
Alone	31.99%	17.55%	18.35%	8.71%	20.28%	
Poverty status						
Poverty	7.56%	16.66%	9.76%	11.24%	14.58%	0.000
Low income	24.19%	24.85%	19.66%	12.51%	24.19%	
Middle income	34.46%	17.88%	27.93%	26.47%	28.89%	
High income	33.79%	40.61%	42.65%	49.78%	32.34%	
						Total
N (un-weighted)	74,042	848	823	337	1,488	77,538
(Weighted)	286,100,459	2,319,023	2,333,611	991,942	4,074,180	295,819,215

* χ^2 test for testing the overall association between race/ethnicity and sociodemographic characteristics.
** One-way ANOVA test for testing the difference of mean age among race/ethnicity groups.

Table 4. Health Insurance Status of Asian American and Pacific Islander Older Adults (United States, 2000–2009)

	Non-Hispanic White	Chinese	Filipino	Asian Indian	Other API	*p* value*
Health Insurance						
Not covered	0.47%	3.88%	2.80%	8.68%	3.68%	0.000
Covered	99.53%	96.12%	97.20%	91.32%	96.32%	
Medicare status						
Not covered	5.40%	20.71%	17.45%	31.41%	15.20%	0.000
Covered	94.60%	79.29%	82.55%	68.59%	84.80%	
Medicaid status						
Not covered	95.83%	79.81%	80.61%	78.51%	80.65%	0.000
Covered	4.17%	20.19%	19.39%	21.49%	19.35%	
Private insurance status						
Not covered	35.00%	58.42%	64.35%	60.76%	58.85%	0.000
Covered	65.00%	41.58%	35.65%	39.24%	41.15%	
†Access to medical care						
No	3.38%	3.49%	3.50%	9.78%	4.25%	0.000
Yes	96.62%	96.51%	96.50%	90.22%	95.75%	

* χ^2 test for testing the overall association between race/ethnicity and health insurance status.
† Sample adults only

Table 5. Health Status and Mental Health Status of Asian American and Pacific Islander Older Adults (United States, 2000–2009)

	Non-Hispanic White	Chinese	Filipino	Asian Indian	Other API	*p* value*
Self-rated health						
Poor	6.59%	7.84%	5.54%	7.87%	8.19%	0.000
Fair	16.94%	17.57%	18.79%	15.70%	20.96%	
Good	35.49%	42.68%	39.41%	35.54%	35.60%	
Very good	26.59%	21.88%	21.72%	26.00%	22.90%	
Excellent	14.02%	10.04%	14.54%	14.89%	12.36%	
†Health compared to 1 year ago	13.40%	20.91%	9.78%	11.59%	15.41%	0.000
Worse	73.84%	69.88%	74.04%	73.76%	73.90%	
The same	12.76%	9.21%	16.18%	16.18%	10.69%	
Better						
ADL limitation	94.18%	92.23%	93.95%	96.24%	93.28%	0.000
No	5.82%	7.77%	6.05%	3.76%	6.72%	
Yes						
IADL limitation	88.23%	86.72%	90.98%	90.15%	89.66%	0.000
No	11.77%	13.28%	9.02%	9.85%	10.34%	
Yes						
Activity limitation	65.52%	71.68%	75.24%	79.19%	74.01%	0.000
No	34.48%	28.32%	24.76%	20.81%	25.99%	
Yes						
†Functional limitation	35.49%	42.32%	46.96%	54.93%	48.10%	0.000
No	64.51%	57.68%	53.04%	45.07%	51.90%	
Yes	1.56[a]	0.88[b]	1.05[c]	0.75[d]	0.95[e]	0.000**
Health conditions (Mean)	2.06[a]	2.10[b]	1.68[c]	1.32[d]	1.69[c]	0.000***
†K6 distress scale (Mean)	97.72%	97.42%	97.52%	99.14%	98.33%	0.000
No	2.28%	2.58%	2.48%	0.86%	1.67%	
Yes						

* χ^2 test for testing the overall association between race/ethnicity and health status, limitation status, and mental health status.
**One-way ANOVA test for testing the difference of mean health conditions among race/ethnicity groups.
*** One-way ANOVA test for testing the difference of mean nonspecific psychological distress score among race/ethnicity groups.
† Sample adults only

Table 6. Ordered Logistic Regression: Predicting Self-Reported Health Status of Asian American and Pacific Islander Older Adults (United States, 2000–2009)
Dependent Variable: self-reported health status (1-poor, 5- excellent)

	All older adults OR (95% CI)	Asian American older adults only OR (95% CI)
Race/ethnicity		
Non-Hispanic White	Referent	N/A
Chinese	0.67 (0.52–0.83)***	Referent
Filipino	0.66 (0.50–0.88)**	0.86 (0.59–1.25)
Asian Indian	0.76 (0.47–1.22)	1.09 (0.64–1.87)
Other API	0.61 (0.49-0.75)***	0.81 (0.59–1.11)
Age, y		
65–74	Referent	Referent
75–84	0.98 (0.93–1.03)	0.89 (0.67–1.20)
85+	1.11 (1.02–1.21)*	0.76 (0.41–1.41)
Gender		
Female	Referent	Referent
Male	0.85 (0.81–0.89)***	0.86 (0.65–1.15)
Marital status		
Married	Referent	Referent
Not married	1.13 (1.03–1.24)*	1.08 (0.74–1.59)
Education		
< High school	Referent	Referent
High school graduate	1.43 (1.34–1.53)***	1.38 (0.94–2.04)
> High school	2.05 (1.91–2.20)***	1.81 (1.27–2.59)**
Living arrangement		
Not alone	Referent	Referent
Alone	1.63 (1.48–1.79)***	1.76 (1.16–2.65)**
Poverty status		
Poverty	Referent	Referent
Low income	1.37 (1.25–1.50)***	1.30 (0.91–2.12)
Middle income	1.74 (1.59–1.91)***	2.51 (1.61–3.92)***
High income	2.36 (2.14–2.61)***	2.55 (1.63–4.00)***
Citizenship		
U.S.-born citizen	Referent	Referent
Naturalized citizen	0.74 (0.66–0.83)***	0.58 (0.41–0.82)**
Non-U.S. citizen	0.93 (0.74–1.19)	0.70 (0.44–1.11)
Health Insurance		
Not covered	Referent	Referent
Covered	1.75 (1.17–2.60)**	1.34 (0.40–4.47)
Access to medical care		
No	Referent	Referent
Yes	0.82 (0.71–0.94)**	0.88 (0.41–1.87)
Activity limitation		
No	Referent	Referent
Yes	0.29 (0.28–0.31)***	0.21 (0.15–0.30)***
Functional limitation		
No	Referent	Referent
Yes	0.45 (0.42–0.47)***	0.36 (0.27–0.48)***
Health conditions	0.72 (0.71–0.73)***	0.81 (0.74–0.88)***
Wald χ^2	8763.17***	329.97***
Pseudo R^2	0.13	0.15

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 7. Linear Regression: Predicting Mental Health Status (K6 Distress Scale) of Asian American and Pacific Islander Older Adults (United States, 2000–2009)
Dependent variable: psychological distress (0-lowest level of psychological distress, 24-highest level of psychological distress)

	All older adults		Asian American older adults only	
	B(SE)	β	B(SE)	β
Race/ethnicity				
Non-Hispanic White	Referent		N/A	
Chinese	-0.03(0.27)	-0.001	Referent	
Filipino	-0.29(0.28)	-0.006	-0.30(0.38)	-0.035
Asian Indian	-1.05(0.21)	-0.014***	-1.09(0.34)	-0.088***
Other API	-0.31(0.18)	-0.009	-0.27(0.33)	-0.039
Age, y	-0.05(0.00)	-0.086***	-0.03(0.03)	-0.056
Gender				
Female	Referent		Referent	
Male	-0.34(0.05)	-0.047***	-0.27(0.24)	-0.037
Marital status				
Married	Referent		Referent	
Not married	-0.28(0.10)	-0.039***	-0.32(0.31)	-0.046
Education level	-0.14(0.01)	-0.089***	-0.03(0.05)	-0.036
Living arrangement				
Not alone	Referent		Referent	
Alone	-0.26(0.10)	-0.036***	0.18(0.33)	0.025
Poverty ratio	-0.19(0.02)	-0.065***	-0.07(0.10)	-0.030
Citizenship				
U.S.-born citizen	Referent		Referent	
Naturalized citizen	0.39(0.11)	0.025***	0.32(0.29)	0.045
Non-U.S. citizen	0.39(0.24)	0.012	0.86(0.54)	0.089
Health insurance				
Not covered	Referent		Referent	
Covered	-0.48(0.43)	-0.008	0.62(0.74)	0.028
Access to medical care				
No	Referent		Referent	
Yes	-0.53(0.14)	-0.027***	-2.55(0.87)	-0.123***
Activity limitation				
No	Referent		Referent	
Yes	1.32(0.06)	0.177***	1.45(0.40)	0.180***
Functional limitation				
No	Referent		Referent	
Yes	1.05(0.04)	0.140***	1.50(0.23)	0.213***
Health conditions	0.29(0.02)	0.135***	0.28(0.09)	0.131***
Constant	7.55(0.54)***	-	5.11 (2.51)*	-
F	186.24***		8.87***	
R^2	0.15		0.21	

*p < 0.05, **p < 0.01, ***p < 0.001