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Author manuscript

*Health Soc Care Community*. Author manuscript; available in PMC 2019 January 01.

Published in final edited form as:

*Health Soc Care Community*. 2018 January ; 26(1): 72–79. doi:10.1111/hsc.12463.

## The Risk Typology of Healthcare Access and Its Association with Unmet Healthcare Needs in Asian Americans

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### Abstract

Using data from the 2015 Asian American Quality of Life Survey (N = 2,609), latent profile analysis was conducted on general (health insurance, usual place for care, and income) and immigrant-specific (nativity, length of stay in the U.S., English proficiency, and acculturation) risk factors of healthcare access. Latent profile analysis identified a three-cluster model (low-risk, moderate-risk, and high-risk groups). Compared with the low-risk group, the odds of having an unmet healthcare need was 1.52 times greater in the moderate-risk group and 2.24 times greater in the high-risk group. Challenging the myth of model minority, the present sample of Asian Americans demonstrates its vulnerability in access to healthcare. Findings also show the heterogeneity in healthcare access risk profiles.

### Keywords

Unmet healthcare needs; Access to healthcare; Latent profiling; Asian Americans

### Introduction

Acting on the national priority of eliminating disparities in healthcare, the United States has been making progress in reducing access gaps (Smedley, Stith and Nelson 2002, U.S. Department of Health and Human Services [DHHS] 2016). However, members of racial/ethnic minority groups continue to experience disproportionate health burdens and inequities (U.S. DHHS, 2016). The present investigation focuses on Asian Americans, a population that has been understudied and underserved in health disparities research and practice (Trinh-Shevrin, Islam and Rey 2009, Yoo, Le and Oda, 2013). As a broad racial/ethnic category, Asian Americans are the fastest growing minority group in the United States (Cohn 2015, Pew Research Center 2013). The 45.6% growth rate for Asian Americans from

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Conflict of interest: No conflicts of interest have been declared.

2000 to 2010 is phenomenal, given that the corresponding figure for the U.S. total population is only 9.7% (Hoeffel, Rastogi, Kim and Shahid 2010). Yet despite their rapid population growth, relatively little attention has been paid to Asian Americans, and their healthcare needs remain poorly understood (Ghosh 2009, Islam, Khan, Kwon, Jang, Ro and Trinh-Shevrin 2010).

A substantial proportion of Asian Americans comprises foreign-born immigrants who face linguistic barriers (Pew Research Center 2013), but national surveys are often unable to address their cultural and linguistic challenges (Barnes, Adams and Powell-Griner 2008, Ngo-Metzger, Kaplan, Sorkin, Clarridge and Phillips 2004). Many population-based surveys use English as their primary survey language, which limits the participation of persons with limited English proficiency. Given the close association between English proficiency and socioeconomic advantages, findings based on English-proficient samples of Asian Americans are likely to be biased upward. Indeed, studies using national surveys often portray Asian Americans favorably with respect to their access to healthcare (Chevarley 2010, Shi, Lebrun and Tsai 2010, Shi and Stevens 2005). According to the Medical Expenditure Panel Survey (MEPS), which used English as a primary survey language, Asian Americans have the lowest rate (2.8%) of unmet healthcare needs (i.e., the proportion of individuals who are unable to get medical care or were delayed in getting medical care in the past 12 months) of all racial/ethnic groups (Chevarley 2010). This rate is considerably lower than the 5.1% reported by non-Hispanic Whites. Such line of findings reinforces the stereotype that Asian Americans are generally healthy, self-sufficient, problem-free model minorities (Shi and Stevens 2005, Shi *et al* 2010, Yi, Kwon, Sacks and Trinh-Shevrin 2016). However, these findings could simply be attributable to the aforementioned sampling artifact (Jang, Yoon, Park and Chiriboga 2016, Ngo-Metzger *et al* 2004). The present study is an attempt to revisit unmet healthcare needs among Asian Americans, using a sample that reflects cultural and linguistic diversity.

The present study developed a risk group typology for healthcare access and examined how the typology was associated with unmet healthcare needs. Using Andersen's behavioral health model (1995), a sizable body of literature has identified major barriers and facilitators of health service use. Yet most studies tend to focus on the independent effects of those factors by using a variable-centered method. An alternative approach is to use a person-centered method—to directly identify groups/clusters of individuals who share a profile based on multiple risk factors. For example, Shi and Stevens (2005) grouped individuals by the total count of risks encountered within a set of general risk factors (low income, no insurance coverage, and having no regular source of care) and found a gradient risk of having an unmet healthcare need where the vulnerability was highest in the group with all 3 risk factors. Given the interrelated but distinct natures of risk factors and the different weight that each risk factor carries, we used latent profile/class analysis as a way of systematically identifying group typologies. Latent profile/class analysis uncovers hidden subgroups from the sample data that share the key characteristics (e.g., risk factors) (Muthén 2001, Thorpe, Thorpe, Kennelty and Pandhi 2011). The identification of subgroups also provides practical implications by prioritizing the groups at particular risk and suggesting ways to approach them.

In the present study, latent profiling was performed not only on general risk factors (health insurance, usual place for care, and income) but also on immigrant-specific risk factors (nativity, length of stay in the U.S., English proficiency, and acculturation). Selection of the immigrant-specific factors was based on literature showing that foreign-born individuals who have stayed for shorter periods of time in the U.S. and/or have lower levels of familiarity with mainstream culture and language are more likely to encounter problems in obtaining healthcare (Derose, Escarce and Lurie 2007, Jacobs, Chen, Karliner, Agger-Gupta and Mutha 2006, Lillie-Blanton and Hoffman 2005). The odds of having an unmet need determined by the identified risk group typology was estimated, controlling for the effect of socio-demographic and health characteristics (age, gender, marital status, education, ethnic origin, chronic disease, and self-rated health).

## Methods

### Data Set

Data were drawn from the 2015 Asian American Quality of Life (AAQoL) survey. The survey is part of the City of Austin's AAQoL initiative to improve response to the rapid growth of the Asian American population. Self-identified Asian Americans aged 18 and older living in the Austin area were eligible to participate.

The 10-page questionnaire was originally developed in English and then translated into 6 Asian languages (Chinese, Vietnamese, Korean, Hindi, Gujarati, and Tagalog). In case of Chinese, both traditional and simplified versions were prepared. The initial translations were conducted by 8 professional translators and graduate level bilingual researchers. For each language, the translated version was reviewed by two or more bilingual volunteers. Upon refinement of the questionnaire, each language version was pilot tested with 3–5 community members who spoke the target language, and their feedback was incorporated into the final version.

Surveys were conducted using a paper and pencil questionnaire in the participants' preferred language. Although the survey was designed to be self-administered, trained bilingual research assistants were available at each survey site for recruitment and assistance with survey administration. A total of 76 survey sessions took place at various sites across the City of Austin (e.g., churches, temples, grocery markets, small group meetings, and cultural events) from August to December, 2015. The project was publicized through media and ethnic community sources, and referrals for individuals, groups, and organizations were actively sought. It took about 20 minutes to complete the 10-page questionnaire, and respondents were each paid US \$10 for their participation. The project was approved by the university's Institutional Review Board (IRB), and the consenting procedure was conducted as instructed by IRB. A total of 2,614 individuals participated. After deleting five questionnaires which had missing information on more than 20% of the variables used in the present analyses, the final sample size was 2,609.

## Measures

**Risk variables**—The variables selected for risk profiling included general risk factors (health insurance [0 = yes, 1 = no], usual place for care [0 = yes, 1 = no], and annual household income [0 =  $\geq$ \$30,000, 1 =  $<$ \$30,000]) and immigrant-specific risk factors (nativity [0 = U.S.-born, 1 = foreign-born], length of stay in the U.S. [years], English proficiency, and acculturation). English proficiency was assessed with a question about how well the respondent spoke English, using a 4-point response scale ranging from “not at all” to “very well.” Using the U.S. Census criteria (Pandya, McHugh and Batalova 2011), those who reported that they spoke English less than “very well” were categorized as a group with limited English proficiency (0 = English proficient, 1 = limited English proficiency). Acculturation was assessed by asking respondents to rate their level of familiarity with the culture and custom of mainstream America (1 = *very low*, 4 = *very high*).

**Unmet healthcare needs**—Adapted from national surveys (Chevarley 2010, Shi and Stevens 2005), unmet healthcare needs were assessed with a single item asking respondents whether there was a time in the past 12 months when they needed medical care but could not get it. Responses were coded as “no” (0) or “yes” (1).

**Background characteristics**—Demographic information included age group (0 = 18–39; 1 = 40–59; 2 = 60 and older), gender (0 = male, 1 = female), marital status (0 = married, 1 = not married), education (0 = high school graduation, 1 =  $<$  high school graduation), and ethnic origin (0 = Chinese, 1 = Asian Indian, 2 = Korean, 3 = Vietnamese, 4 = Filipino, 5 = Other Asian). Chronic disease and self-rated health were used as indicators of health. Total count from the checklist of 10 chronic diseases and conditions (diabetes, cancer, arthritis, heart disease, high blood pressure, stroke, liver disease, kidney problem, asthma, and chronic obstructive pulmonary disease) was recoded into 3 categories (0 = none, 1 = one, 2 = two or more). Respondents rated their current health on a 5-point scale. Responses were then dichotomized into “excellent/very good/good” (0) and “fair/poor” (1).

## Analytic Strategy

After review of the descriptive characteristics of the sample, latent profile analysis of risk group typology was conducted on both general (health insurance, usual place for care, and annual household income) and immigrant-specific (nativity, length of stay in the U.S., English proficiency, and levels of acculturation) risk factors. The latent profile analysis was based on the assumption that an unobserved heterogeneity of risks in the sample could be captured through the generation of different risk groups (Nylund, Asparouhov and Muthén 2007, Muthén and Muthén 2004, Vermunt, 2004).

An optimal cluster model was selected on the basis of a number of model fit criteria. The identified groups were then compared in terms of their risk variables, background characteristics, and unmet healthcare needs. Chi-square tests and ANOVAs were used for group comparisons. In the final step of analyses, the logistic model of unmet healthcare needs was estimated by including risk cluster types only (unadjusted model) and adding background characteristics as covariates (adjusted model). Analyses were performed using Mplus (Muthén and Muthén, Los Angeles, CA) and SPSS (IBM Corp., Armonk, NY).

## Results

### Descriptive Characteristics of the Sample

Characteristics of the overall sample are summarized in Table 1. The sample included 640 Chinese (24.5%), 574 Asian Indians (22%), 471 Koreans (18.1%), 513 Vietnamese (19.7%), 265 Filipinos (10.2%), and 146 individuals from other Asian groups (5.6%). Examples of the ethnicities specified by participants in the ‘other’ group included Nepalese, Pakistani, Cambodian, Japanese, and mixed race/ethnicity. It is noteworthy that almost half of the participants (48.5%) requested surveys employing languages other than English. Selected by 17% of the overall sample, Chinese (in both the traditional and simplified versions) was the language used most frequently, followed by Korean (14.2%) and Vietnamese (14%). Preference for a non-English version was notably high for Chinese (68.6%), Korean (78.8%), and Vietnamese (71.3%). Overall, the availability of the survey questionnaire in Asian languages enabled many non-English speaking individuals to participate.

The participants’ ages ranged from 18 to 98, with an average of 42.8 ( $SD = 17.1$ ). About 21% of the participants were 60 and older. More than half (55.2%) were female, and 33.4% were unmarried. About 19% had received less than a high school education. More than a quarter of the sample (28.4%) had at least one chronic disease on the list, and about 11% of the participants rated their health as either “fair” or “poor.”

With regard to risk variables, about 15% of the sample had no health insurance coverage, and the proportion of the sample without a usual place for care was approximately 38%. More than a quarter had an annual household income below \$30,000. A large majority (90.8%) were foreign born, and the length of stay in the U.S. ranged from 0.25 to 78 years, with an average of 15.6 ( $SD = 12.7$ ). The rate of limited English proficiency was quite high; about 62% reported that they spoke English less than “very well.” The level of acculturation averaged 2.82 ( $SD = 0.79$ ) out of the range of 1 to 4. About 12% of the sample reported that there had been a time during the last 12 months when they needed medical care but could not get it.

### Type of Risk Groups

A series of latent profile analyses was conducted to establish a typology of risk groups. Starting with a two-cluster model, the number of clusters was subsequently increased. This process was stopped at the four-cluster model because the models with more than four clusters did not converge properly. In order to determine the optimal number of clusters, the results of all converged models were compared. Several model-fit criteria were employed, including the Bayesian information criterion (BIC), entropy, the Lo-Mendell-Rubin likelihood ratio test (LMR-LRT), a bootstrap likelihood ratio test (BLRT), and posterior probabilities. Lower BIC values and higher entropy values (i.e., an index of classification quality) suggest higher model fit and classification quality (Vermunt 2004). The two likelihood ratio tests (LMR-LRT and BLRT) were used to compare adjacent models: the  $(c-1)$ -cluster model and the  $c$ -cluster model, with significant  $p$  values suggesting that the current model performed better than the prior model. The number of clusters was also determined by evaluating posterior probabilities, using the matrix of conditional

probabilities for cases to be placed in their respective clusters; diagonal values closer to one indicated high classification quality.

Table 2 presents the results of latent profile analyses for the two-, three-, and four-cluster models. The BIC values decreased from the two-cluster model to the three-cluster model and then increased in the four-cluster model. The three-cluster model contained the highest entropy value (.99), and its diagonal posterior probabilities (not shown in the table), at over .95, proved superior to the values from other cluster models. Although neither likelihood ratio test favored a particular number of clusters, we selected the three-risk cluster model as the most optimal on the basis of the other fit indices and model parsimony.

Table 3 illustrates the profiles of each of the three risk cluster types. Based on the distribution of the risk variables, the clusters were labeled the “low-risk group,” “moderate-risk group,” and “high-risk group,” respectively. Including 19% of the overall sample ( $n = 504$ ), the low-risk group was characterized by low scores on both general and immigrant-specific risk factors. This group’s members had the most favorable characteristics in terms of access to healthcare and cultural and linguistic familiarity with mainstream U.S. society. The moderate-risk group ( $n = 1,252$ ) included the largest segment (48%) of the overall sample and was positioned in the middle in terms of the risk variables. The high-risk group ( $n = 853$ ), which included one third of the overall sample, fared worse in all risk variables. More than 21% of this group had no health insurance coverage, over half did not have a usual place for care, and about 39% had an annual household income of less than \$30,000. In addition, a majority (97.8%) of the high-risk group’s members were foreign born, and the group’s average length of time in the U.S. was shortest ( $M = 10.5$ ,  $SD = 10.6$ ). More than 87% of the high-risk group had limited English proficiency, and the group’s level of acculturation was the lowest ( $M = 1.86$ ,  $SD = 0.36$ ) among the three groups.

The profiles of the risk clusters were also compared on their background characteristics and unmet healthcare needs (Table 4). A statistically significant group difference was observed for all variables except gender. The high-risk group was more likely to include individuals aged 60 and over than were the other two groups. The low-risk group included a particularly high proportion of unmarried individuals, probably due to its inclusion of younger cohorts. The high-risk group was significantly more likely to have received less than a high school education. In terms of ethnic origin, Chinese participants represented more than one third of the high-risk group. The high-risk group had the highest proportion of individuals reporting two or more chronic diseases and was more likely to report fair/poor health. At 15.2%, the rate of unmet healthcare needs was particularly high in the high-risk group.

### Logistic Regression Model of Unmet Healthcare Needs

Table 5 summarizes the results of both the unadjusted and adjusted logistic regression models testing the effect of risk cluster type on unmet healthcare needs. The unadjusted model showed that, in comparison with the low-risk group, the odds of having an unmet need were 1.52 times greater in the moderate-risk group and 2.39 times greater in the high-risk group. Risk group membership remained significant in the adjusted model.

As for background characteristics, lower education increased the odds of having an unmet need. Koreans and Vietnamese participants showed greater odds of having an unmet need than Chinese participants, whereas Asian Indians had lower odds. The presence of disease and fair/poor ratings of health also increased the odds of having an unmet need.

## Discussion

The premise of our investigation was that the current knowledge on Asian Americans as the “model minority” might be misleading due to upward bias stemming from the systematic exclusion of persons with limited English proficiency in population-based surveys (Islam *et al* 2010, Jang *et al* 2016, Trinh-Shevrin *et al* 2009, Yi *et al* 2016). To reach out to diverse groups of Asian Americans and increase the representativeness of the sample for this study, we used culturally and linguistically sensitive approaches (Islam *et al* 2010, Jang *et al*, 2016). The strategies included providing not only Asian language versions of the survey questionnaire but also research personnel (e.g., recruiters and survey assistants) who shared the languages and cultures of the target populations. Furthermore, a strong partnership between the research team and key individuals and organizations within ethnic communities facilitated the participation of community members (Israel *et al* 1998, Wallerstein and Duran 2006). The fact that among a total of 2,609 participants in the present study, almost half (48.5%) used non-English versions of the survey questionnaire indicates that our culturally and linguistically sensitive approaches enabled many individuals who are conventionally unrepresented in national surveys to be included.

The rate of unmet healthcare needs in the present sample was particularly high. More than 11% of the sample reported that they had been unable to receive medical care in the past 12 months despite their needs. This rate is 2.3 times higher than that found in non-Hispanic Whites (5.1%) and 4.1 times higher than that in Asian Americans (2.8%) in the MEPS, which used English as a primary survey language (Chevarley 2010). Direct comparison of rates across different studies requires caution due to heterogeneity of methodology. Nevertheless, with the inclusion of a considerable number of non-English-speaking individuals, our sample provided a contrary picture of healthcare access, challenging the existing myth of a model minority (Yi *et al* 2016).

Findings from latent profile analysis provided a better understanding of the underlying issues. The three-cluster model comprising a low-risk group, a moderate-risk group, and a high-risk group was found to be optimal, and the high-risk group demonstrated heightened vulnerabilities. At 15.2%, the rate of unmet healthcare needs in the high-risk group was notably high. Logistic regression further demonstrated the pronounced risk of unmet healthcare needs in the high-risk group. Chinese participants constituted a substantial proportion of the high-risk group, but they were less likely to have an unmet healthcare need than were the Vietnamese and Koreans. This might be attributable to a local health service environment unique to Chinese patients, who might be able to access needed medical care through Chinese-speaking medical professionals and alternative medicine. In line with previous studies of risk groups in healthcare access (Shi and Stevens 2005, Thorpe *et al* 2011), our findings present heterogeneous risk profiles within the sample and identify subgroups at particular risk. Findings highlight the importance of not only general access

variables (health insurance, usual place for care, and income) but also immigrant-specific variables (nativity, length of stay in the U.S., English proficiency, and acculturation) in identifying risk groups of healthcare access. Further attention in policies and services should be paid to individuals who are in an early stage of immigration and/or with linguistic and cultural barriers.

The present study was limited by its cross-sectional design and a non-representative, regionally defined sample. Caution should be exercised in drawing causal inferences and generalizing the findings to the larger population of Asian Americans. It should also be noted that the assessment was based on self-reported measures, and certain variables (e.g., English proficiency and acculturation) might be susceptible to reporter's bias. Future studies should also attend to the environmental contexts of health services. For example, the availability of healthcare providers who offer culturally and linguistically appropriate services (CLAS) in the area plays a critical role in determining individuals' use and perceptions of health services.

Despite these limitations, the present study sheds light on the importance of using culturally and linguistically sensitive approaches to reach out to the Asian American population, and it provides an opportunity to reflect on the myth of Asian Americans as a model minority. Furthermore, our findings on risk group typology suggest implications for interventions with respect to subgroups to be prioritized and areas to be targeted.

## Acknowledgments

**Source of funding:** This work was supported in part by a grant from the National Institute on Aging (R01AG047106– PI: Yuri Jang, Ph.D.). The support for data collection was provided by the City of Austin's Asian American Quality of Life initiative (Contract No. 26-8275-39, PI–Yuri Jang, Ph.D.).

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**What is known about the topic**

- Asian Americans are the fast-growing but understudied population in health disparities research.
- Studies using national surveys often portray Asian Americans favorably with respect to their health and healthcare access.

**What this paper adds**

- With the inclusion of a considerable number of non-English-speaking individuals, the present sample presented a high rate of unmet healthcare needs.
- Latent profile analysis identified three risk groups of healthcare access (low-risk, moderate-risk, and high-risk groups), and the groups presented an incremental odds of having unmet healthcare needs.

**Table 1**

Characteristics of the Overall Sample (N = 2,609)

	<b>M±SD or %</b>
<b>Background variable</b>	
Age	
18–39	48.3
40–59	31.2
60 and older	20.5
Gender	
Female	55.2
Marital status	
Not married	33.4
Education	
<high school graduation	18.6
Ethnic origin	
Chinese	24.5
Asian Indian	22.0
Korean	18.1
Vietnamese	19.7
Filipino	10.2
Other	5.6
Chronic disease	
None	71.6
One	18.8
Two or more	9.6
Self-rated health	
Fair/poor	10.6
<b>General risk factor</b>	
Health insurance	
No coverage	14.8
Usual place for care	
No	38.1
Annual household income	
< \$30,000	27.4
<b>Immigrant-risk factor</b>	
Nativity	
Foreign-born	90.8
Years in the U.S.	15.6±12.7
English proficiency	
Limited English Proficiency	62.4
Acculturation	2.82±0.79
<b>Healthcare needs</b>	

	<b>M±SD or %</b>
Unmet needs	11.5

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**Table 2**

## Model Selection Criteria

Model	BIC	Entropy	LMR-LRT ( $H_0 = k - 1$ classes)	BLRT ( $H_0 = k - 1$ classes)
2 clusters	24,853.88	.79	$p = .00$	$p = .00$
3 clusters	23,243.99	.99	$p = .00$	$p = .00$
4 clusters	23,721.24	.79	$p = .00$	$p = .00$

*Note.* BIC = Bayesian information criterion; LMR-LRT = Lo-Mendell-Rubin likelihood ratio test; BLRT = bootstrap likelihood ratio test.

**Table 3**

Profiles of the Three Risk Groups of Healthcare Access

Type of Risk	M±SD or %			F( $\chi^2$ )
	Cluster 1 Low-Risk Group (n = 504)	Cluster 2 Moderate-Risk Group (n = 1252)	Cluster 3 High-Risk Group (n = 853)	
<b>General risk factor</b>				
No health insurance	12.2	11.3	21.4	(44.3 <sup>***</sup> )
No usual place for care	27.7	33.8	50.8	(89.5 <sup>***</sup> )
Household income <\$30,000	17.4	24.4	38.5	(89.5 <sup>***</sup> )
<b>Immigrant-specific risk factor</b>				
Foreign-born	70.6	94.2	97.8	(312.7 <sup>***</sup> )
Years in the U.S.	23.4±12.1	15.9±12.5	10.5±10.6	182.8 <sup>***</sup>
Limited English Proficiency	15.7	64.4	87.1	689.2 <sup>***</sup>
Acculturation	4.00±0.80	3.00±0.01	1.86±0.36	17,114.5 <sup>***</sup>

\*\*\*  
p < .001.

**Table 4**

Other Characteristics of the Three Risk Groups of Healthcare Access

Type of Risk	M±SD or %			F( $\chi^2$ )
	Cluster 1 Low-Risk Group (n = 504)	Cluster 2 Moderate-Risk Group (n = 1252)	Cluster 3 High-Risk Group (n = 853)	
<b>Background characteristics</b>				
Age				54.9***
18–39	56.8	47.3	44.8	
40–59	30.7	33.9	27.5	
60 and older	12.5	18.8	27.6	
Female	52.0	54.8	57.5	3.97
Not married	44.2	31.5	29.9	33.2***
< High school graduation	10.6	16.0	27.3	68.1***
Ethnic origin				163.4***
Chinese	19.8	19.8	34.2	
Asian Indian	17.5	22.5	23.9	
Korean	12.5	19.8	18.8	
Vietnamese	23.4	21.5	14.8	
Filipino	19.0	11.0	3.6	
Other	7.7	5.4	4.7	
Chronic disease				21.9***
None	72.4	74.8	66.4	
One	20.4	16.6	21.3	
Two or more	7.3	8.6	12.3	
Fair/poor rating of health	5.0	7.7	18.4	81.9***
<b>Unmet healthcare needs</b>	7.4	10.5	15.2	21.0***

\*\*\*  
p < .001.



**Table 5**

## Logistic Regression Model of Unmet Healthcare Needs

Variable	Odds Ratio (95% Confidence Interval)	
	Unadjusted Model	Adjusted Model
<b>Risk cluster type</b>		
Low-risk group	1.0 [reference]	1.0 [reference]
Moderate-risk group	1.52* (1.02–2.27)	1.52* (1.01–2.30)
High-risk group	2.39*** (1.59–3.57)	2.24*** (1.45–3.46)
<b>Background characteristics</b>		
Age		
18–39		1.0 [reference]
40–59		.83 (.58–1.17)
60 and older		.85 (.57–1.28)
Gender		
Male		1.0 [reference]
Female		1.07 (.82–1.40)
Marital status		
Married		1.0 [reference]
Not married		1.33 (.99–1.79)
Education		
High school		1.0 [reference]
< High school		1.52** (1.11–2.08)
Ethnic origin		
Chinese		1.0 [reference]
Asian Indian		.54* (.34–.87)
Korean		1.68** (1.15–2.45)
Vietnamese		1.91** (1.29–2.81)
Filipino		1.05 (.61–1.80)
Other Asian		.79 (.39–1.60)
Chronic disease		
None		1.0 [reference]
One		1.70** (1.21–2.37)
Two or more		1.75** (1.12–2.73)
Self-rated health		
Excellent/very good/good		1.0 [reference]
Fair/poor		1.90** (1.31–2.75)

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