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Across the Lifecourse

Determinants of Depression Risk among Three Asian American Subgroups in New York City

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Objective: Although the fastest growing minority group, Asian Americans receive little attention in mental health research. Moreover, aggregated data mask further diversity within Asian Americans. This study aimed to examine depression risk by detailed Asian American subgroup, and further assess determinants within and between three Asian ethnic subgroups.

Methods: Needs assessment surveys were collected in 16 Asian American subgroups (six Southeast Asian, six South Asian, and four East Asian) in New York City from 2013-2016 using community-based sampling strategies. A final sample of N=1,532 completed the PHQ-2. Bivariate comparisons and multivariable logistic models explored differences in depression risk by subgroup.

Results: Southeast Asians had the greatest depression risk (19%), followed by South Asians (11%) and East Asians (9%). Among Southeast Asians, depression risk was associated with lacking health insurance (OR=.2, 95% CI: 0-.6), not having a provider who speaks the same language (OR=3.2, 95% CI: 1.3-8.0), and lower neighborhood social cohesion (OR= .94, 95% CI: .71-.99). Among South Asians, depression risk was associated with greater English proficiency (OR=3.9, 95% CI: 1.6-9.2); and among East Asians, depression risk was associated with ≤ high school education (OR=4.2, 95% CI: 1.2-14.3). Additionally, among Southeast Asians and South Asians, the highest depression risk was associated with high levels of discrimination (Southeast Asian: OR=9.9, 95% CI: 1.8-56.2; South Asian: OR=7.3, 95% CI: 3.3-16.2).

Conclusions: Depression risk and determinants differed by Asian American ethnic subgroup. Identifying factors associated with depression risk among these groups is key to targeting limited public health resources for these underserved communities. *Ethn Dis*. 2020;30(4):553-562; doi:10.18865/ed.30.4.553

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Introduction

Asian Americans are the fastest growing minority group in the United States; by 2055, they will become the largest immigrant group, making up 38% of the foreign-born population.[1] Asian Americans represent different countries, ethnicities, cultures, religions, languages, generational statuses, sociopolitical experiences, and socioeconomic indicators. However, in research, Asian Americans are often grouped into a single category, combined with smaller minority groups into an "other" category, or excluded altogether.[2] Consequently, data on Asian American health remains scarce and often masks potential disparities between subgroups. Further, the 'model minority' stereotype has perpetuated the misconception that Asian Americans do not experience health disparities, despite evidence demonstrating otherwise.[3]

Depression, the leading cause of disability worldwide, is on the rise globally.[4] A systematic review and meta-analysis found high heterogeneity in national and regional estimates of depression among Asian Americans, ranging from 2.6% to 71.0%.[5] While it is widely believed that Asian Americans have lower depression rates than other US minority groups,[5,6] this could be due in part to measurement issues. Asian Americans are more likely to report somatic symptoms (eg, changes in appetite, fatigue) than sadness or depressed mood, potentially leading to under-detection of depression.[5] In nationally representative data, lifetime depression prevalence for Asian Americans was 9.1%, and 12-month prevalence was 4.7%.[6] Similarly, New York City (NYC) reported 5% of

Asian Americans with current depression in 2018.[7] Meanwhile, pooled estimates of depressive symptoms among Asian Americans range from 26.9% to 35.6%.[5] Thus, although Asian Americans are not diagnosed with depression at high rates, depressive symptoms appear to be prevalent; available evidence further suggests differences by Asian American subgroup.[5]

Asian American identity may place individuals at greater depression risk; the minority stress model posits that being a member of a minoritized or stigmatized group increases exposure to stressors, and that the accumulation of multiple stressors may increase depression risk. However, stronger community affiliations may also protect against some of the harmful consequences of stress, resulting in lower depression risk.[8] While previous research has investigated stressors and depression among Asian Americans, few studies have studied distinct Asian American subgroups. Although certain aspects are likely to be similar across select subgroups, it is not yet established how the type and prevalence of stressors and their associated impact on depression risk differ between subgroups.

Some stressors are directly related to migration, including in the country of origin, during the migration process, and in the country of arrival. Experiences vary, as immigration patterns have occurred in waves; for example, Chinese, Koreans, Japanese, and Filipinos began immigrating to the United States in the 19th century, primarily as laborers, while South Asian and Southeast Asian immigrants have arrived in the past 50 years following revised immigration laws prioritizing immigrants with professional degrees and accepting refugees. Differences in depression risk could be due in part to the unique stressors experienced in countries of origin (eg, deprivation, civil war) and the composition of who is allowed to enter the United States (eg, laborers, professionals, refugees). Once in the United States, simple proxies for acculturation include years spent in the United States and English language fluency. US-born Asians appear to have higher depression risk than foreign-born Asians[9]; younger age at immigration, longer residence in the United States, and limited English language proficiency have also been associated with depression risk.[9,10]

Other stressors relate to how members of a minoritized or stigmatized group are treated by others in the United States. For example, perceived discrimination has been linked to worse mental health among Asian Americans,[11] including Filipinos,[12] Asian Indians,[13] Chinese,[14] and Koreans.[15] Since the World Trade Center attacks, South Asian, Muslim, Sikh, Middle Eastern and Arab Americans have experienced increased surveillance, policing, and violence.[16] Following the 2016 election, there was a record high rate of hate crimes against South Asians,[16] and both South Asians and Southeast Asians have reported being harassed and threatened, as well as experiencing discrimination (eg, in employment, housing, police, services), more often than East Asians.[17]

Finally, buffers may reduce the impact of stressors on depression for Asian Americans. One potential buffer is perceived neighborhood social cohesion or trusting relationships with others in one's community. Few studies to date have studied this association among minority groups in the United States. Limited data are mixed for whether neighborhood social cohesion is correlated with depression risk for Asian Americans.[18,19]

The aims of this study were to: 1) examine depression risk across 16 detailed Asian American subgroups; 2) identify differences in depression risk by Asian American ethnic subgroup (Southeast Asian, South Asian, East Asian); and 3) explore how depression risk differs when stratifying by Asian American ethnic subgroup, thus offering insights on how to target public health resources for these subgroups in the future.

Methods

Study Population

The Community Health Resources and Needs Assessment (CHRNA) was a community-based, cross-sectional survey administered among 16 Asian American subgroups in NYC from 2013-2016 by the NYU Grossman School of Medicine Center for the Study of Asian American Health (CSAAH) using convenience sampling. Participants were recruited during community events (eg, cultural and religious festivals, health fairs, informational events). The survey was administered in-person in the person's preferred language among adults aged 18-85 years, self-identifying as Asian American, and living in the NYC metropolitan region. Survey methods have been described elsewhere.[20] Data collection was approved by the NYU Grossman School of Medicine Institutional Review Board. All procedures were in accordance with the ethical standards of the responsible

committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent with waiver of documentation was obtained from all participants.

Measures

The survey comprised validated measures, including depression risk and potential determinants. Study data were collected and managed using REDCap electronic data capture tools hosted at NYU Langone Health.

Depression Risk

The primary outcome of depression risk was ascertained using the validated Patient Health Questionnaire-2 (PHQ-2). Questions included: "Over the last month, how often have you (a) had little interest or pleasure in doing things; and (b) felt down, depressed, or hopeless." Response options included: (0=not at all, 1=several days, 2=more than half of days, 3=nearly every day). The combined score (range 0-6) was dichotomized, and a score ≥3 classified as at-risk for depression.[21] Participants missing these items were excluded from analysis.

Asian American Subgroup

The 16 Asian American subgroups were categorized into three Asian ethnic subgroups based on country of origin using standard classifications:[22] Southeast Asian (Burmese, Cambodian, Filipino, Indonesian, Thai, Vietnamese); South Asian (Bangladeshi, Asian Indian, Indo-Caribbean, Nepali, Pakistani, Sri Lankan); and East Asian (Chinese, Japanese, Korean, Tibetan). Indo-Caribbean was classified with South Asian based on ancestor country of origin and Asian Indian ethnicity.

Determinants

Socio-demographic variables included sex (female/male), age in years (18-24, 25-44, 45-64, ≥65; continuous for regression), education (≤high school/>high school), current employment (yes/no), and household income (<$25,000, $25,000-$55,000, >$55,000, missing/don't know/decline to state). Self-reported health status was grouped into excellent/very good/good and fair/poor.

Migration-related factors included: percent of years lived in the United States, with US-born as 100% (continuous; total years lived in US divided by age) and English language proficiency (very well/well and not well/not at all).

Health care access included health insurance (public, private/other, and none) and "Do you have a health care provider who speaks in a language in which you can comfortably communicate" (yes/no, with "I have no regular health care provider" categorized as no).

Psychosocial factors included perceived discrimination and neighborhood social cohesion. Perceived discrimination was measured by the validated Everyday Discrimination Scale[23] (continuous range 0-45, categorized into: none=0, low=1-9, and high=10-45). Neighborhood social cohesion was modified from an earlier scale developed by Sampson, Raudenbush, and Earls.[24] Questions included: 1) People in this neighborhood can be trusted; 2) People in this neighborhood generally get along with each other; 3) I have neighbors who would help me if I had an emergency; and 4) People in my neighborhood look out for each other (continuous range 4-16, high=16). For both perceived discrimination and neighborhood social cohesion, mean scores were used to fill in missing data when ≥75% of items were answered.[25]

Statistical Analysis

Depression risk was calculated individually for the 16 subgroups. Next, descriptive statistics were computed for all variables, stratifying by Asian American ethnic subgroup and depression risk. Bivariate tests determined the association between each determinant and depression risk within each subgroup; Pearson's chi-square tests or Fisher's exact test were used for categorical variables, and Student's t-tests were used for continuous variables. Unadjusted, age- and sex-adjusted, and fully-adjusted multivariable logistic models with the entire sample estimated odds ratios (ORs) and 95%CIs for the relative odds of depression risk between the three Asian American ethnic subgroups. Finally, stratified, fully-adjusted multivariable logistic regression models estimated ORs and 95% CIs for the associations between each determinant and depression risk within each ethnic subgroup. Income levels were excluded from multivariable models, given the high missingness (22.7%). For perceived discrimination (missing 10.0%) and neighborhood social cohesion (missing 15.0%), sensitivity analyses were conducted for those with complete data on both measures. A threshold of $P<.05$ was used for all analyses. Analyses were completed using SPSS 25 (2017, IBM Corp, Armonk NY).

Results

After excluding 152 participants with missing PHQ-2 data, the final sample included 1,532 partici-

pants (Southeast Asian=409, South Asian=669, East Asian=454). Approximately 57% were female and almost half were aged 18-44 years (48.5%). Although education was high (40.6% college graduates), 39.4% were not currently working and the majority had a household income <$55,000 (71.0% of those providing income data). Nearly all (91.1%) were foreign-born and 34.0% reported speaking English not well or not at all. The three subgroups differed on all measured variables, including depression risk. In raw numbers, Southeast Asians had the highest depression risk (18.6%) followed by South Asians (11.1%) and East Asians (9.3%). When further stratified, the highest depression risk was seen among Cambodians (39.1%) and Indo-Caribbeans (23.2%), and the lowest among Asian Indians (1.9%) and Burmese (2.6%) (Figure 1).

Table 1 presents differences in depression risk stratified by ethnic subgroup. Three factors were significant among all three subgroups: not having a health care provider who speaks the same language; self-reported health status; and perceived discrimination. Two factors were significant for at least two subgroups (health insurance and neighborhood social cohesion) and all factors except age were significant for at least one subgroup (sex, education, current employment, percent of years in the United States, and English language proficiency). Overall, Southeast Asians had more than twice as many significant factors as South Asians and East Asians. All factors were included in the final, fully-adjusted multivariable models.

Table 2 presents multivariable regression models for depression risk among the overall sample, adjusting for Asian American ethnic subgroup. In the unadjusted and the sex- and age-adjusted models, Southeast Asians had 2.2 the odds of depression risk compared with East Asians. In the fully-adjusted model, ethnic subgroup was no longer significant.

Table 3 presents multivariable, fully-adjusted models for depression risk stratified by ethnic subgroup. Across groups, fair/poor self-reported health was associated with depression risk

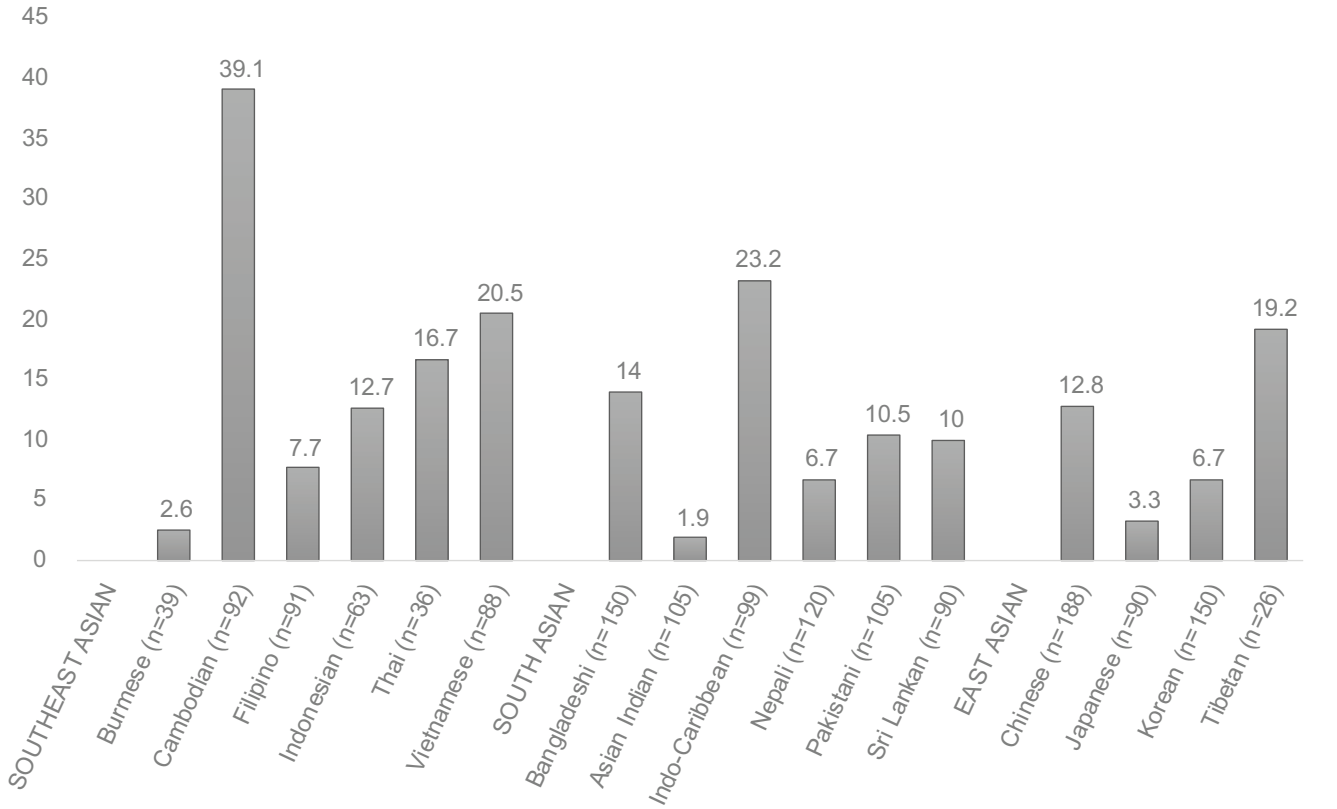

Figure 1. Depression risk (%) by Asian American subgroup, N=1,532

Table 1. Sociodemographic and psychosocial factors stratified by three Asian American subgroups and depression risk, n (%)

	Southeast Asian, n=409			South Asian, n=669			East Asian, n=454		
	At risk n=76	No risk n=333	P	At risk n=74	No risk n=595	P	At risk n=42	No risk n=412	P
Depression risk	19%	81%		11%	89%		9%	91%	
Sex			.051			.007			.361
Female	50 (66)	178 (53)		51 (69)	311 (52)		29 (69)	255 (62)	
Male	26 (34)	155 (47)		23 (31)	284 (48)		13 (31)	157 (38)	
Age group			.369			.513			.121
18-24	11 (15)	47 (14)		10 (14)	71 (12)		5 (12)	28 (7)	
25-44	24 (32)	129 (39)		30 (42)	250 (42)		12 (29)	113 (28)	
45-64	35 (47)	122 (37)		22 (31)	215 (36)		17 (42)	126 (32)	
65+	5 (7)	34 (10)		10 (14)	54 (9)		7 (17)	129 (33)	
% years in US[a]	.6±.3	.5±.3	.005	.3±.3	.4±.3	.397	.4±.2	.4±.3	.845
English spoken proficiency			.003			.262			.958
Very well/well	41 (54)	237 (72)		61 (82)	456 (77)		20 (48)	193 (47)	
Not well/at all	35 (46)	94 (28)		13 (18)	139 (23)		22 (52)	216 (53)	
Education			.002			.072			.136
≤High school	39 (56)	116 (35)		42 (57)	271 (46)		22 (56)	179 (44)	
>High school	31 (44)	212 (65)		32 (43)	322 (54)		17 (44)	228 (56)	
Employment			<.001			.056			.748
Yes	36 (48)	237 (71)		38 (51)	375 (63)		21 (50)	218 (53)	
No	39 (52)	95 (29)		36 (49)	216 (37)		21 (50)	194 (47)	
Income			.320			.172			.238
<$25,000	31 (41)	87 (26)		32 (43)	187 (31)		8 (19)	112 (27)	
$25-$55,000	24 (32)	101 (30)		15 (20)	157 (26)		7 (17)	80 (19)	
>$55,000	12 (16)	72 (22)		11 (15)	125 (21)		10 (24)	113 (27)	
Missing/declined	9 (12)	73 (22)		16 (22)	126 (21)		17 (40)	107 (26)	
Insurance			.031			.012			.354
Private/other	41 (56)	129 (40)		44 (60)	331 (57)		17 (45)	199 (51)	
Public	21 (29)	120 (37)		9 (12)	151 (26)		11 (29)	124 (32)	
None	11 (15)	77 (24)		20 (27)	99 (17)		10 (26)	66 (17)	
Provider speaks same language			.023			.049			.024
Yes	34 (52)	219 (67)		50 (68)	457 (78)		28 (67)	328 (82)	
No/no provider	31 (48)	106 (33)		24 (32)	130 (22)		14 (33)	72 (18)	
Self-reported health			<.001			<.001			<.001
Excellent/very good/good	39 (51)	265 (80)		41 (56)	449 (76)		15 (36)	269 (66)	
Fair/poor	37 (49)	67 (20)		32 (44)	143 (24)		27 (64)	140 (24)	
Discrimination			.001			<.001			.039
None	5 (7)	89 (30)		20 (29)	301 (55)		14 (40)	159 (44)	
Low (1-9)	38 (57)	118 (40)		26 (37)	167 (30)		7 (20)	123 (34)	
High (10-45)	24 (36)	87 (30)		24 (34)	84 (15)		14 (40)	79 (22)	
Neighborhood social cohesion[a]	10.4±2.6	12.1±2.8	<.001	13.4±3.1	13.5±2.8	.888	12.0±3.2	13.1±2.8	.040

a. mean±SD; P calculated using the Student's t-test for continuous variables and Pearson's chi-square test for categorical variables or Fisher's exact test when expected cell counts <5; due to missing data, n may not add to sample totals.

(Southeast Asian: OR=6.8, 95% CI: 2.4-19.4; South Asian: OR=2.7, 95% CI: 1.4-5.3; East Asian: OR=3.0, 95% CI: 1.0-8.5). Among Southeast Asians, younger age (OR=.95, 95% CI: .91-.98), female sex (OR=4.0, 95% CI: 1.7-9.6) and not having a provider who speaks the same language (OR=3.2, 95% CI: 1.3-8.0) were associated with higher depression risk, and not having health insurance with lower depression risk (OR=.2, 95% CI: 0-.6); among South Asians, speaking English very well or well (OR=3.9, 95% CI: 1.6-9.2) was associated with depression risk; and among East Asians, younger age (OR=.96, 95% CI: .2-0.99) and ≤ high school education (OR=4.2,

Table 2. Multivariable logistic regression of Asian American subgroups associated with depression risk

	Unadjusted			Age- and sex-adjusted			Fully-adjusted		
	OR	95% CI	P	OR	95% CI	P	OR	95% CI	P
Ethnic group									
Southeast Asian	2.2	1.5, 3.4	<.001	2.2	1.4, 3.3	<.001	1.6	.9, 3.0	.117
South Asian	1.2	.8, 1.8	.329	1.2	.8, 1.8	.481	1.5	.9, 2.7	.161
East Asian		Reference			Reference			Reference	
Sex									
Female				1.7	1.2, 2.3	.002	1.9	1.2, 2.9	.004
Male					Reference			Reference	
Age[a]				.99	.98, 1.00	.248	.98	.96, .99	.003
% years in US[a]							1.17	.55, 2.50	.681
English spoken proficiency									
Very well/well							1.9	1.1, 3.2	.021
Not well/at all								Reference	
Education									
≤ High school							2.4	1.5, 3.8	<.001
> High school								Reference	
Employment									
Yes								Reference	
No							1.4	.9, 2.2	.161
Health insurance									
Private/other								Reference	
Public							1.3	.8, 2.2	.403
None							.8	.4, 1.5	.488
Provider speaks same language									
Yes								Reference	
No/no provider							2.2	1.4, 3.4	.001
Self-reported health									
Excellent/very good/good								Reference	
Fair/poor							3.5	2.2, 5.6	<.001
Discrimination									
None								Reference	
Low (1-9)							3.0	1.8, 5.2	<.001
High (10-45)							5.1	2.8, 9.1	<.001
Neighborhood Social cohesion[a]							.98	.91, 1.05	.545

a. Continuous variables.

95% CI: 1.2-14.3) were associated with depression risk. High and low discrimination were associated with depression risk among Southeast Asians and South Asians (Southeast Asian: OR=9.9, 95% CI: 1.8-56.2, OR: 6.4, 95% CI: 1.3-32.7, respectively; South Asian: OR=7.3, 95% CI: 3.3-16.2, OR: 3.4, 95% CI: 1.6-6.9, respectively). Among Southeast Asians, lower neighborhood social cohesion was significantly associated with depression risk (OR=.84; 95% CI: .71-.99). Sensitivity analyses restricted to complete responses for both the perceived discrimination and the neighborhood social cohesion scales found similar patterns across the three ethnic subgroups.

Discussion

In NYC, where Asian Americans comprise more than 13% of the population, we found high variability in depression risk among subgroups, ranging from 1.9% among Asian Indian Americans to 39.1% among Cambodian Americans. In general, depression risk was much higher than overall estimates of 5% for current depression among Asian Americans in NYC.[7] These findings support prior evidence suggesting a higher prevalence of depressive symptoms among Asian Americans,[5] and reiterate the importance of disag-

Table 3. Multivariable logistic regression of determinants associated with depression risk stratified by three Asian American subgroups

	Southeast Asian			South Asian			East Asian		
	OR	95% CI	P	OR	95% CI	P	OR	95% CI	P
Sex									
Female	4.0	1.7, 9.6	.002	1.6	.9, 3.0	.128	1.7	.6, 4.8	.337
Male		Reference			Reference			Reference	
Age[a]	.95	.91, .98	.006	.99	.97, 1.01	.455	.96	.92, .99	.013
% years in US[a]	.72	.16, 3.28	.670	.94	.28, 3.18	.922	1.09	.16, 7.57	.933
English spoken proficiency									
Very well/well	.6	.2, 1.8	.346	3.9	1.6, 9.2	.002	1.8	.6, 5.9	.322
Not well/not at all		Reference			Reference			Reference	
Education									
≤High school	2.4	.9, 6.6	.090	1.9	1.0, 3.8	.060	4.2	1.2, 14.3	.021
>High school		Reference			Reference			Reference	
Employment									
Yes		Reference			Reference			Reference	
No	1.0	.4, 2.4	.929	1.7	.9, 3.2	.111	1.0	.3, 3.2	.977
Health insurance									
Private/other		Reference			Reference			Reference	
Public	.5	.2, 1.5	.214	2.2	1.0, 5.1	.058	1.5	.4, 5.1	.558
None	.2	0, .6	.008	2.0	.7, 5.7	.196	.8	.2, 3.7	.776
Provider speaks same language									
Yes		Reference			Reference			Reference	
No/no provider	3.2	1.3, 8.0	.014	1.8	.9, 3.9	.114	2.5	.8, 7.6	.115
Self-reported health									
Excellent/very good/good		Reference			Reference			Reference	
Fair/poor	6.8	2.4, 19.4	<.001	2.7	1.4, 5.3	.003	3.0	1.0, 8.5	.041
Discrimination									
None		Reference			Reference			Reference	
Low (1-9)	6.4	1.3, 32.7	.025	3.4	1.6, 6.9	.001	1.0	.3, 3.7	.962
High (10-45)	9.9	1.8, 56.2	.009	7.3	3.3, 16.2	<.001	2.8	.9, 8.6	.081
Neighborhood Social cohesion[a]	.84	.71, .99	.032	1.03	.93, 1.14	.575	1.02	.84, 1.22	.877

a. Continuous variables.

gregated data given the high variability across Asian American subgroups.[5]

Although not significant in the fully-adjusted models, the gradient of depression risk from Southeast Asians to South Asians to East Asians suggests alignment with the minority stress model by reflecting the greater marginalization of Southeast Asians and South Asians within the pan-Asian American identity.[26] In other words, the Asian American identity is most commonly associated with East Asians, such that Southeast Asians and South Asians are even further marginalized as outsiders.[27] It is possible that East Asian immigrants may also benefit more from the stress buffering effects of social support and increased access to educational and occupational resources that may stem from more prevalent co-ethnic communities.

Southeast Asians include subgroups with higher rates of refugees, including Cambodians and Vietnamese, who may arrive with existing mental health problems such as post-traumatic stress and may experience additional stressors, such as arriving without pre-existing knowledge of the English language, lower educational attainment, and fewer financial resources. Prior studies suggest that psychological distress differs for Cambodian and Vietnamese refugees vs immigrants, such as having lower health-related quality of life and being more susceptible to secondary traumatization.[28,29]

Among South Asians, the lower depression risk among Asian Indians warrants further investigation, including intersections with religious identi-

ties. Indo-Caribbeans are typically not included in Asian American health research, but were found to have 2-10 times the depression risk as other South Asian subgroups. Indo-Caribbeans have a different pattern of migration and do not always identify as South Asian, as many were brought over to the Caribbean during the 1800s as indentured servants before migrating later to the United States. Similarly, while East Asians had the lowest depression risk, the highest risk was for Tibetan Americans, who represent one of the newest emerging Asian populations in NYC and likely have less access to resources and social networks than more-established Asian American subgroups.

Unsurprisingly, we identified different determinants for depression risk across the ethnic subgroups. Although common belief is of higher depression risk among females, our results corroborate mixed findings for Asian Americans.[5] For Southeast Asian women, higher depression risk warrants further investigation, especially given high rates of trauma.[30] Similarly, measures of socioeconomic status and health care access were mostly not significant, aligning with prior literature suggesting diminishing benefits for these factors among Asian Americans.[31] Having less than a high school education was a significant determinant for East Asians, corroborating a study in which lower education was associated with poorer self-rated mental health for Chinese, but not for Vietnamese or Filipinos.[32] Socioeconomic status for Asian American immigrants is complex, given that education obtained from a foreign country does not confer the same benefits in the United States.[10] While not having health insurance was protective for Southeast Asians, not having a health care provider who speaks the same language increased depression risk. These conflicting findings indicate the need to better understand the role of health care access for Southeast Asians. Importantly, in other multivariable models with migration and discrimination measures, socio-demographic factors also became nonsignificant.[10,15]

Although findings for migration-related stressors have been mixed, our findings are atypical compared with prior studies for time in the United States and English language proficiency.[9,10,15] For time in the United States, we may be missing differences by timing, as those who immigrate at younger ages are often at greater risk for mental health problems.[10] For English language proficiency, English is commonly spoken in countries of origin such as India or the Philippines. In nationally representative data, English proficiency was associated with psychological distress after adjusting for migration-related factors and discrimination for Asian Americans, but not for Latinx Americans. The authors suggested that limited English proficiency among Asian Americans may be associated with a 'perpetual foreigner' stereotype that perpetuates discrimination.[10] While this contrasts with our findings, it supports the relative role of discrimination on depression.

After adjusting for all other determinants, discrimination was associated with increased depression risk among Southeast Asians and South Asians. These findings align with a growing body of work that discrimination impacts mental health for Asian Americans.[11] We only found associations for "Brown Asians" (eg, South Asian, Southeast Asian, Filipino),[26] suggesting discrimination might be more salient for the subgroups experiencing relatively more marginalization and discrimination.[27] For Southeast Asians, particularly Filipinos, this could stem from long-standing cultural mistrust due to racism experienced by earlier generations of migrants and during the American occupation of the Philippines.[26,33] For South Asians, this could connect back to the rise in hate crimes and higher rates of surveillance, policing, and violence in the United States.[18] While discrimination was not significant for East Asians, the recent resurgence in anti-Asian sentiment and hate crimes primarily targeting Chinese Americans due to the COVID-19 pandemic will likely have repercussions on mental health.[34]

Lower neighborhood social cohesion was only associated with depression risk for Southeast Asians, who also had the lowest neighborhood social cohesion across the three subgroups. This could be due to the greater social isolation of Cambodian and Vietnamese refugee communities, and limited co-ethnic communities for Thai and Indonesian Americans. Although prior studies among US minority groups are limited, a study among Latinx Americans found positive associations for neighborhood social cohesion and mental health only in those with good Spanish abilities who could also think some or all of the time in English, suggesting the role of socioeconomic status and language ability in social connections.[19] Prior work has also considered the role of neighborhood composition such as ethnic density (ie, living in more homogenous neighborhoods), although findings are mixed for whether

this leads to lower or higher depression risk for different minority groups.[35] More research is needed to understand the role of neighborhood social cohesion for Asian American subgroups.

Study Limitations

This study is limited by the use of convenience sampling that is not representative of the underlying populations, and comprised largely of low-income, first-generation immigrants. Nonetheless, it represents one of the most robust and diverse samples of Asian American subgroups available and includes subgroups not captured in other datasets. Although we know there is meaningful variation within the 16 groups, three larger groups based on country of origin were created for power. Because these are cross-sectional analyses, no inferences about causality are made; rather, variation in determinants support the need for additional subgroup-specific studies. All measures relied on self-report, which may vary in their validity for each subgroup. Those missing perceived discrimination and neighborhood social cohesion scales differed on percent of years lived in the United States, provider who speaks the same language, and English fluency, suggesting acculturation differences in understanding these types of questions. While the PHQ-2 focuses on symptoms, it likely underestimates depression risk since it does not include somatic symptoms that are commonly reported among Asian Americans.[5] We are missing important variables such as acculturative stress and family dynamics, and due to high missing data, we were not able to include income. Experiences of minority stress intersect with other identities such as sexual orientation and religious identity, particularly for Muslims given the rise in Islamophobia, and together could lead to higher depression risk.

Conclusion

Identifying factors associated with depression risk among Asian American subgroups is key to advocate for change to reduce discrimination experiences and to target limited public health resources. It is important to understand discrimination within the context of structural racism. Policy protections are needed to condemn and reduce the systemic, harmful treatment of different Asian American subgroups, including rectifying the legacy of harm against Southeast Asians in their countries of origin and the United States; the ongoing state surveillance, policing, and violence against South Asians; and the recent resurgence of hate crimes toward East Asians. As an intermediate step, educating health care providers and community leaders of the linkages between these determinants for both depression risk and mental health service utilization will be vital.

There is substantial evidence that Asian Americans with mild to moderate mental health needs are less likely to use mental health services, due to both not knowing where to seek treatment and receiving less adequate care.[5,36] These can be further exacerbated by stigma and differing cultural beliefs about mental illness and its treatment.[37] Further, perceived discrimination is associated not only with depression risk, but also with more use of informal services for mental health.[37] Given that depressive symptoms appear to be highly prevalent among many Asian American subgroups, collecting and disaggregating data by subgroups will be crucial for understanding subgroup-specific needs and developing appropriate and meaningful community-based approaches to ameliorate depression risk.

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Conflict of Interest

No conflicts of interest to report.

Author Contributions

Research concept and design: Misra, Wyatt, Trinh-Shevrin, Yi, Kwon; Acquisition of data: Wyatt; Data analysis and interpretation: Misra, Wyatt, Wong, Huang, Ali, Trinh-Shevrin, Islam, Yi, Kwon; Manuscript draft: Misra, Wyatt, Wong, Ali, Trinh-Shevrin, Islam, Yi, Kwon; Statistical expertise: Misra, Wyatt; Acquisition of funding: Trinh-Shevrin, Kwon; Administrative: Wong, Huang, Ali, Kwon; Supervision: Trinh-Shevrin, Islam, Yi, Kwon

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