ORIGINAL RESEARCH

Diabetes-Related Cardiovascular and All-Cause Mortality in Asian American Subgroups

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ABSTRACT

BACKGROUND Asian Americans experience heterogeneity in cardiovascular risk factors and cardiovascular disease, with a particularly high burden of diabetes in several Asian subgroups.

OBJECTIVES The objectives of this study were to quantify diabetes-related mortality in Asian American subgroups and compare this with Hispanic, non-Hispanic Black, and non-Hispanic White individuals.

METHODS Using national-level vital statistics data and concurrent population estimates, age-standardized mortality rates and proportional mortality from diabetes-related mortality were calculated for non-Hispanic Asian (and subgroups: Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese), Hispanic, non-Hispanic Black, and non-Hispanic White populations in the United States, 2018-2021.

RESULTS Diabetes-related deaths numbered 45,249 in non-Hispanic Asian, 159,279 in Hispanic, 209,281 in non-Hispanic Black, and 904,067 in non-Hispanic White individuals. Among Asian Americans, age-standardized mortality rates of diabetes-related mortality with cardiovascular disease as underlying cause ranged from 10.8 (95% CI: 9.9-11.6) per 100,000 in Japanese females to 19.9 (95% CI: 18.9-20.9) per 100,000 in Filipina females, and from 15.3 (95% CI: 13.9-16.8) per 100,000 in Korean males to 37.8 (95% CI: 36.1-39.5) per 100,000 in Filipino males. The proportion of all deaths related to diabetes was higher in all Asian subgroups (9.7%-16.4% for females; 11.8%-19.2% for males) compared with non-Hispanic Whites (8.5% for females; 10.7% for males). The highest proportion of diabetes-related deaths occurred in Filipino adults.

CONCLUSIONS There was an approximately 2-fold variation in diabetes-related mortality among Asian American subgroups, with Filipino adults experiencing the greatest burden. All Asian subgroups experienced higher proportional mortality for diabetes-related mortality compared with non-Hispanic White individuals. (JACC: Asia 2023;3:365–372)
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Cardiovascular disease (CVD) mortality is heterogeneous among Asian American subgroups.[1] Aggregating Asian American subgroups masks important heterogeneity in cardiovascular health and CVD outcomes. For example, in 2017 among Asian subgroups, age-standardized mortality rates (ASMRs) from ischemic heart disease were highest among Asian Indian and

Filipino adults, with substantial variation across Asian subgroups.[2] Between 2018 and 2020, proportional mortality from ischemic heart disease was higher in Asian Indian (13.2%) and Chinese (11.9%) women compared with non-Hispanic White women (10.4%), and higher in Asian Indian (18.7%) and Filipino (15.2%) men compared with non-Hispanic White men.[3]

Despite having a lower average body mass index and lower obesity prevalence than other race and ethnic groups,[4] diabetes is highly prevalent among Asian Americans, with substantial variability among several Asian American subgroups. The prevalence of total diagnosed and undiagnosed diabetes was highest among South Asian adults (23%) and Southeast Asian adults (22%) in clinical data from the U.S. National Health and Nutrition Examination Surveys.[5] Self-reported diagnosed diabetes prevalence (representing known, or diagnosed, diabetes) ranged from 5% in Korean American adults to 14% in Filipino American adults, suggesting that a substantial amount of diabetes among Asian American populations may be undiagnosed.[6] The burden of gestational diabetes is also particularly high among Asian subgroups in the United States, with Asian Indian individuals experiencing the highest rates in the last decade.[7]

Estimating diabetes-related mortality, which is a leading contributor of death, is an important population surveillance strategy to guide tailored prevention for the Asian American population. No prior analysis of diabetes-related mortality has evaluated differences across individual disaggregated Asian American subgroups. Quantifying the burden of mortality related to diabetes may inform and direct programs to enhance diagnosis, treatment, and control among populations that are disproportionately affected. Therefore, we characterized contemporary patterns of diabetes-related mortality in Asian American subgroups between 2018 and 2021, and hypothesized that certain Asian American subgroups (eg, Filipino and Asian Indian) experienced disproportionately high burden.

METHODS

Mortality was assessed using death certificate records from the U.S. Centers for Disease Control and Prevention's Wide-Ranging Online Data for Epidemiologic Research (WONDER) database between 2018 to 2021.[8] Analysis was restricted to this period because these are the years in which Asian subgroup identification is available in the public access vital statistics. We examined 2 outcomes of diabetes-related morality. We looked at the frequency of any diabetes-related deaths. This was done by identifying International Classification of Disease (ICD)-10 codes E10-E14 (diabetes mellitus) as a multiple cause of death with any ICD-10 code as the underlying cause (in other words, diabetes listed as an underlying or contributing cause of death on the death certificate). We also investigated the frequency of diabetes-related CVD mortality because CVD is the leading underlying cause of death among people with diabetes. This was determined by using ICD-10 codes I00-I99 (diseases of the circulatory system) as the underlying cause of death, with ICD-10 codes E10-E14 (diabetes mellitus) as a contributing cause of death. In a secondary analysis, we evaluated the proportion of diabetes-related deaths from all causes in 2020-2021 that also listed COVID-19 (ICD-10 code U07.1) as a contributing cause, among Asian American subgroups.

Race and ethnicity groups included non-Hispanic Asian overall, and the 6 largest Asian American subgroups (Asian Indian, Chinese, Filipino, Japanese, Korean, and Vietnamese). No other Asian American subgroups are specifically identified on death certificates. These groups were also compared with non-Hispanic Black and Hispanic adults. Contemporaneous race and ethnicity- and sex-specific population estimates were obtained from the Integrated Public Use Microdata Series Current Population Survey with annual data between 2018 and 2021.[9] Race and ethnicity identification on death certificates were identified by the decedent's next of kin or the medical examiner, or self-identified for population size estimates.

Sex-stratified ASMR per 100,000 population with 95% CIs were calculated standardized to the age distribution of the 2000 U.S. Standard Population consistent with prior analyses.[2] Age standardization was conducted using the direct method, in which the weighted average of age-specific death rates is calculated based on the age group weights reflecting the age distribution of the 2000 U.S. Standard Population, as recommended by the WONDER analytic guidelines.[8] Proportional mortality with 95% CI for diabetes-related mortality was calculated as the number of deaths due to diabetes as either contributing or underlying cause divided by the total number of decedents from all causes. Proportional mortality ratios for each cause were calculated as the proportional mortality in each race and ethnicity subgroup divided by the proportional mortality in non-Hispanic White decedents. In secondary analysis, age-stratified proportional mortality for diabetes-related

TABLE 1 Diabetes-Related Mortality From All Underlying Causes in Racial and Ethnic Subgroups in the United States

	Female			Male		
	N	ASMR/100,000	PM (%)	N	ASMR/100,000	PM (%)
Non-Hispanic Asian	20,549	49.5 (48.8-50.2)	13.2 (13.0-13.4)	24,700	73.7 (72.8-74.6)	14.8 (14.6-15.0)
Asian Indian	2,660	51.3 (49.3-53.2)	14.8 (14.3-15.3)	4,374	77.5 (75.2-79.8)	16.3 (15.9-16.7)
Chinese	3,671	36.8 (35.6-37.9)	10.5 (10.2-10.9)	4,435	52.3 (50.8-53.9)	11.8 (10.9-11.5)
Filipino	5,282	64.8 (63.0-66.5)	16.4 (16.0-16.8)	5,946	118.8 (115.8-121.8)	19.2 (18.8-19.7)
Japanese	2,134	37.2 (35.6-38.8)	9.7 (9.3-10.1)	1,872	62.1 (59.2-64.9)	13.4 (12.9-14.0)
Korean	1,851	46.4 (44.3-48.5)	12.0 (11.4-12.5)	1,754	59.4 (56.6-62.2)	13.2 (12.6-13.7)
Vietnamese	1,904	46.0 (44.0-48.1)	13.9 (13.3-14.4)	2,511	64.5 (62.0-67.0)	13.1 (12.6-13.6)
Hispanic	70,418	80.9 (80.3-81.5)	15.6 (15.5-15.7)	88,861	124.3 (123.4-125.1)	15.1 (15.0-15.2)
Non-Hispanic Black	102,934	110.7 (110.0-111.3)	12.7 (13.6-13.8)	106,347	160.2 (159.2-161.3)	12.7 (12.7-12.8)
Non-Hispanic White	385,594	56.5 (56.3-56.7)	8.5 (8.4-8.5)	518,473	96.0 (95.7-96.2)	10.7 (10.7-10.7)

N = number of deaths in each race and ethnicity subgroup attributed to diabetes as an underlying or contributing cause, 2018-2021.

ASMR = age-standardized mortality rates/100,000 (95% CI); PM = proportional mortality, indicating the percent of deaths from all causes between 2018-2021 attributed to diabetes-related all-cause mortality (95% CI).

deaths was calculated in each race and ethnicity subgroup in 2 age strata: 0-64 years or ≥65 years. For these population-level data, nonoverlapping 95% CIs indicate statistically significant differences. Analyses were conducted in Microsoft Excel version 16.63.1 (Microsoft Corporation). This study was exempt from Institutional Review Board review due to the use of publicly available, deidentified data.
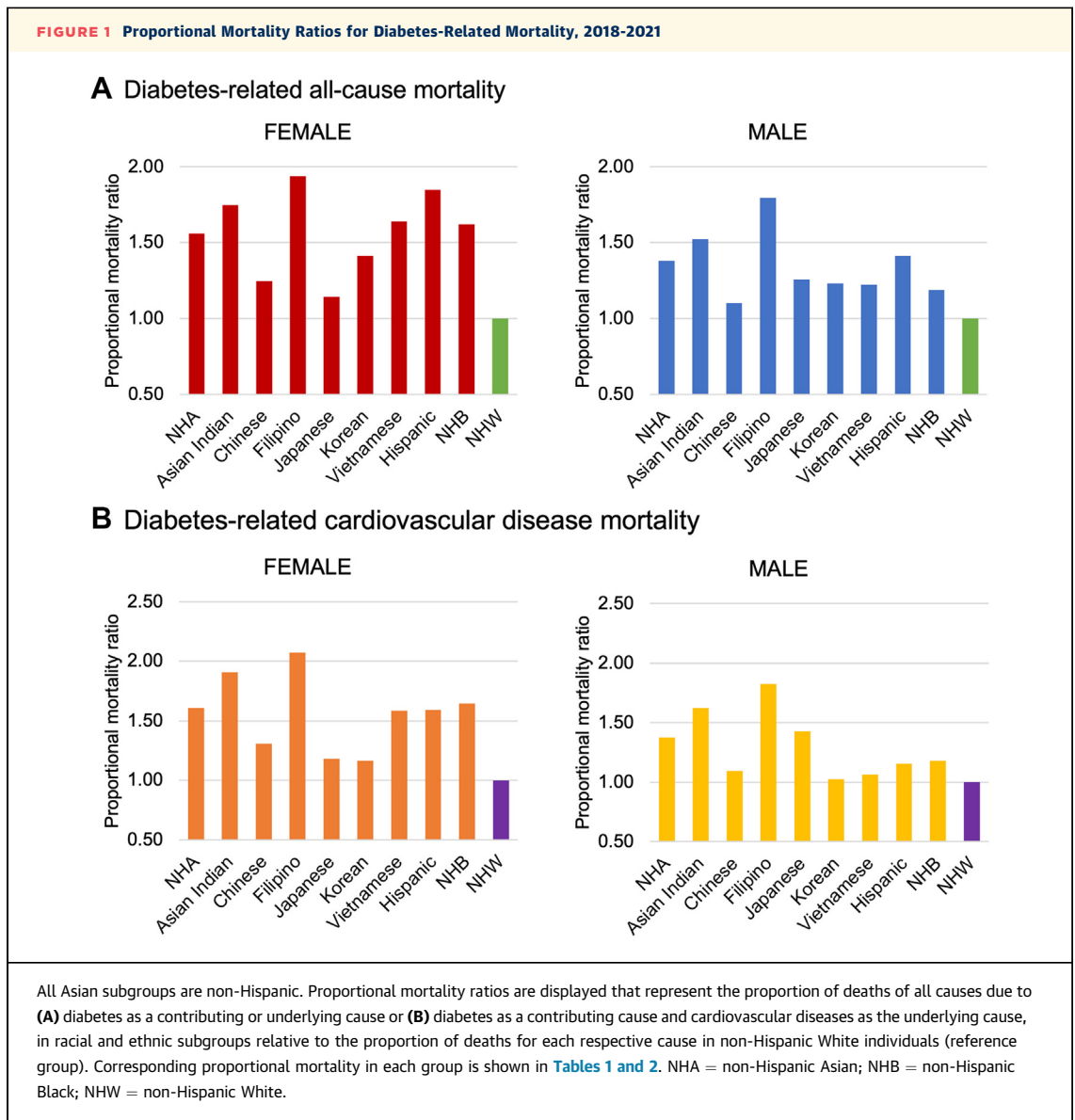
RESULTS

Between 2018 and 2021, the number of deaths from all causes in the United States were 322,906 in non-Hispanic Asian (including 44,831 Asian Indian, 72,444 Chinese, 63,168 Filipino, 35,976 Japanese, 28,812 Korean, and 32,913 Vietnamese), 1,038,490 in Hispanic, 1,587,062 in non-Hispanic Black, and 9,399,279 in non-Hispanic White individuals. **Table 1** shows the frequency, ASMR, and proportional mortality of diabetes-related mortality from all causes in racial and ethnic subgroups. Among Asian American females, ASMR of diabetes-related mortality from all causes ranged from 36.8 (95% CI: 35.6-37.9) per 100,000 in Chinese females to 64.8 (95% CI: 63.0-66.5) per 100,000 in Filipina females, compared with 56.5 (95% CI: 56.3-56.7) per 100,000 in non-Hispanic White females. Among females, proportional mortality related to diabetes from all underlying causes and from CVD as underlying cause was significantly higher in all Asian American subgroups compared with non-Hispanic White individuals (proportional mortality ratios shown in **Figure 1**). Several Asian subgroups had higher proportional mortality from diabetes-related deaths compared with Hispanic females (higher in Filipina females) and non-Hispanic Black females (higher in Asian Indian and Filipina

females). Filipina females had the highest proportional mortality (16.4% of all deaths were related to diabetes).

Among Asian American males, ASMR of diabetes-related mortality from all causes ranged from 52.3 (95% CI: 50.8-53.9) per 100,000 in Chinese males to 118.8 (95% CI: 115.8-121.8) per 100,000 in Filipino males, compared with 96.0 (95% CI: 95.7-96.2) per 100,000 in non-Hispanic White males. Proportional mortality related to diabetes from all underlying causes and from CVD as underlying cause was significantly higher in most Asian American subgroups compared with non-Hispanic White individuals. Several Asian subgroups had higher proportional mortality from diabetes-related deaths compared with Hispanic males (higher in Asian Indian and Filipino males) and non-Hispanic Black males (higher in Asian Indian, Filipino, and Japanese males). Filipino males had the highest proportional mortality (19.2% of all deaths were related to diabetes).

Age-stratified proportional mortality from diabetes-related death from all underlying causes are shown in **Table 2**. The highest proportional mortality for diabetes-related deaths among all race and ethnic groups was in Filipino males age ≥65 years, in whom 20.3% of all deaths were related to diabetes. Among younger adults, there was still a substantial burden of diabetes-related mortality; in males, proportional mortality was highest in the Filipino, Japanese, and Asian Indian groups. In females, proportional mortality was highest among Filipina and Asian Indian young adults.

Table 3 shows patterns in diabetes-related mortality from CVD as an underlying cause among racial and ethnic groups. Among females, ASMR from diabetes-

FIGURE 1 Proportional Mortality Ratios for Diabetes-Related Mortality, 2018-2021

All Asian subgroups are non-Hispanic. Proportional mortality ratios are displayed that represent the proportion of deaths of all causes due to **(A)** diabetes as a contributing or underlying cause or **(B)** diabetes as a contributing cause and cardiovascular diseases as the underlying cause, in racial and ethnic subgroups relative to the proportion of deaths for each respective cause in non-Hispanic White individuals (reference group). Corresponding proportional mortality in each group is shown in **Tables 1 and 2**. NHA = non-Hispanic Asian; NHB = non-Hispanic Black; NHW = non-Hispanic White.

related CVD mortality ranged from 10.8 (95% CI: 9.9-11.6) per 100,000 in Japanese females to 19.9 (95% CI: 18.9-20.9) per 100,000 in Filipina females, compared with 10.6 (95% CI: 9.9-11.4) per 100,000 in non-Hispanic White females. Among males, ASMR from diabetes-related CVD mortality ranged from 15.3 (95% CI: 13.9-16.8) per 100,000 in Korean males to 37.8 (95% CI: 36.1-39.5) per 100,000 in Filipino males, compared with 29.9 (95% CI: 29.8-30.0) per 100,000 in non-Hispanic White males. For both sexes, proportional mortality ratios (**Figure 1**) demonstrated that Filipino adults experienced the highest burden of

diabetes-related CVD mortality compared with non-Hispanic White adults in the United States. The **Central Illustration** summarizes all findings.

Finally, in secondary analysis we evaluated the proportion of diabetes-related deaths from all causes that also listed COVID-19 as a contributing cause. Among females in 2020-2021, the proportion of diabetes mellitus-related deaths from all causes that included COVID-19 as a contributing cause was 13.7% in Asian Indian, 13.8% in Chinese, 20.7% in Filipino, 8.3% in Japanese, 14.5% in Korean, and 19.4% in Vietnamese individuals. Among males in 2020-2021,

the proportion of diabetes mellitus-related deaths from all causes that included COVID-19 as a contributing cause was 17.5% in Asian Indian, 15.6% in Chinese, 23.9% in Filipino, 10.9% in Japanese, 16.8% in Korean, and 21.5% in Vietnamese individuals.

DISCUSSION

There was substantial heterogeneity in diabetes-related mortality rates (ASMR and proportional mortality) among Asian American subgroups, for deaths from all underlying causes and for deaths from CVD as the underlying cause. Specifically, Filipino adults consistently had the highest ASMR compared with other Asian subgroups, compared with Hispanic, non-Hispanic Black, and non-Hispanic White adults. Filipino adults also had the highest proportional mortality from diabetes-related deaths from all causes and CVD as underlying cause compared with all other race and ethnic groups. A substantial burden of diabetes-related mortality also occurred among Asian Indian adults, and among Asian American adults younger than 65 years of age.

The wide range in mortality patterns observed among Asian American subgroups aligns with prior epidemiologic analyses demonstrating differences in prevalence of diabetes and CVD mortality rates within the Asian American population.[2] These data extend prior mortality analyses in focusing specifically on CVD-related deaths in Asian subgroups.

The disproportionate experience of diabetes-related mortality (due to any underlying cause, including CVD as the underlying cause) among Filipino adults is consistent with disproportionately higher rates of cardiometabolic risk factors in this population, including obesity, hypertension, and dyslipidemia.[4]

The heterogeneity in diabetes-related mortality patterns is likely multifactorial and may be related to differences in health behaviors (such as dietary quality and pattern, and physical activity) as well as social determinants unique to Asian American subgroups that influence health behaviors as well as diabetes detection and management (Central Illustration). For example, suboptimal dietary patterns have been documented among Filipino Americans and adults living in the Philippines, which are associated with development of cardiovascular risk factors such as diabetes and obesity.[10,11] Dietary patterns are highly influenced by cultural contexts among Asian American subgroups. In the Filipino context, dietary patterns are suboptimal on average, and individuals who immigrate to the United States

TABLE 2 PM From Diabetes-Related Deaths From All Underlying Causes Across Age Groups, 2018-2021

	Age 0-64 y	Age ≥65 y
Female		
Non-Hispanic Asian	8.4 (8.1-8.8)	14.3 (14.1-14.4)
Asian Indian	8.5 (7.6-9.4)	16.5 (15.9-17.1)
Chinese	4.0 (3.5-4.6)	11.7 (11.4-12.1)
Filipino	12.1 (11.3-12.9)	17.4 (17.0-17.9)
Japanese	7.0 (5.7-8.4)	9.8 (9.4-10.3)
Korean	5.0 (4.2-5.9)	13.3 (12.7-13.9)
Vietnamese	5.4 (4.5-6.2)	16.1 (15.4-16.8)
Hispanic	13.0 (12.9-13.2)	16.7 (16.6-16.9)
Non-Hispanic Black	12.5 (12.4-12.6)	14.3 (14.2-14.4)
Non-Hispanic White	8.6 (8.5-8.6)	8.4 (8.4-8.5)
Male		
Non-Hispanic Asian	11.7 (11.4-12.0)	16.0 (15.8-16.2)
Asian Indian	12.3 (11.6-13.0)	18.2 (17.7-18.8)
Chinese	9.0 (8.3-9.6)	12.5 (12.1-12.9)
Filipino	16.4 (15.7-17.2)	20.3 (19.8-20.8)
Japanese	14.8 (13.2-16.4)	13.2 (12.6-13.8)
Korean	9.1 (8.1-10.0)	14.6 (13.9-15.3)
Vietnamese	8.6 (7.9-9.3)	15.4 (14.8-16.1)
Hispanic	11.8 (11.7-11.9)	18.2 (18.1-18.4)
Non-Hispanic Black	10.5 (10.4-10.6)	14.8 (14.7-14.9)
Non-Hispanic White	9.0 (9.0-9.0)	11.3 (11.3-11.4)

Values are PM (95% CI).

Abbreviation as in **Table 1**.

may already have lower-quality dietary patterns due to exposure to Western-style dietary patterns before immigration.[12] Food is a staple for social gathering among several Asian subgroups. Therefore, interventions focused on improving dietary pattern quality to reduce the burden of diabetes and other cardiometabolic disease may be particularly effective if they incorporate cultural factors such as family and social networks, which play an important role in Filipino and other Asian cultures. For example, the PilAM Go4Health program is a mobile health lifestyle intervention modeled after the Diabetes Prevention Program adapted for the Filipino American community that leverages social networks and social support.[13] Similarly, most Asian American subgroups, including Asian Indian and Filipino adults, reported participating in less than the recommended amounts of physical activity, which also contributes to the burden of diabetes in these populations.[14]

A range of additional social determinants likely influences both the burden of diabetes and diabetes-related mortality among Asian American adults and adults of other race and ethnic groups. These factors may also underlie the heterogeneity in diabetes-related mortality that was observed, particularly in considering social determinants that are relevant to

TABLE 3 Diabetes-Related Mortality From Cardiovascular Disease as the Underlying Cause in Racial and Ethnic Subgroups

	Female			Male		
	N	**ASMR/100,000**	**PM (%)**	**N**	**ASMR/100,000**	**PM (%)**
Non-Hispanic Asian	6,030	14.6 (14.3-15.0)	3.9 (3.8-4.0)	7,712	22.9 (22.4-23.4)	4.6 (4.5-4.7)
Asian Indian	828	16.4 (15.3-17.5)	4.6 (4.3-4.9)	1,463	25.8 (24.4-27.1)	5.5 (5.2-5.7)
Chinese	1,098	11.1 (10.4-11.7)	3.2 (3.0-3.3)	1,385	16.3 (15.4-17.1)	3.7 (5.2-5.7)
Filipino	1,608	19.9 (18.9-20.9)	5.0 (4.8-5.2)	1,897	37.8 (36.1-39.5)	6.1 (5.9-6.4)
Japanese	627	10.8 (9.9-11.6)	2.8 (2.6-3.1)	668	22.2 (20.5-23.9)	4.8 (4.4-5.2)
Korean	434	10.9 (9.8-11.9)	2.8 (2.5-3.1)	458	15.3 (13.9-16.8)	3.4 (3.1-3.7)
Vietnamese	524	12.8 (11.7-13.8)	3.8 (3.5-4.1)	685	17.5 (16.2-18.8)	3.6 (3.3-3.8)
Hispanic	17,273	20.2 (19.9-20.5)	3.8 (3.8-3.9)	22,772	32.4 (31.9-32.8)	3.9 (3.8-3.9)
Non-Hispanic Black	29,795	31.9 (31.6-32.3)	4.0 (3.9-4.0)	33,040	49.1 (48.5-49.7)	4.0 (3.9-4.0)
Non-Hispanic White	109,773	10.6 (9.9-11.4)	2.4 (2.4-2.4)	162,491	29.9 (29.8-30.0)	3.4 (3.3-3.4)

N = number of deaths in each race and ethnicity subgroup attributed to diabetes as a contributing cause and cardiovascular disease as underlying cause, 2018-2021.

PM = proportional mortality, indicating the percentage of deaths from all causes between 2018-2021 attributed to diabetes-related cardiovascular disease mortality (95% CI); other abbreviation as in **Table 1**.

U.S. nativity, immigration and immigrant generation, and acculturation.[15,16] The social determinants of health in specific Asian subgroups must be considered within the cultural and historical context of each subgroup. For example, Filipino populations have higher average income and educational attainment compared with other Asian subgroups.[17,18] Despite these favorable socioeconomic factors, this population experiences a greater burden of diabetes.[18] This high burden of diabetes among Filipino adults must be contextualized with underlying structural factors, including colonialism and racism[17]; the high socioeconomic position among Filipino adults stems in part from the historical establishment of a pipeline of healthcare workers to the United States, allowing Filipino immigrants to be well-

CENTRAL ILLUSTRATION Statistics on Diabetes-Related Mortality in Asian Americans

Diabetes-Related Mortality From All Underlying Causes

	Asian Indian		Chinese		Filipino		Japanese		Korean		Vietnamese	
	F	M	F	M	F	M	F	M	F	M	F	M
Age-Standardized Mortality Rate per 100,000	51.3	77.5	36.8	52.3	64.8	118.8	37.2	62.1	46.4	59.4	46.0	64.5
Proportional Mortality	14.8%	16.3%	10.5%	11.8%	16.4%	19.2%	9.7%	13.4%	12.0%	13.2%	13.9%	13.1%
Proportional Mortality Ratio vs. Non-Hispanic White	1.75	1.52	1.25	1.10	1.94	1.79	1.14	1.24	1.41	1.23	1.64	1.22

Differences between subgroups related to social determinants of health

Socioeconomic position · Discrimination · Neighborhood environments · Social support · Food insecurity

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There is heterogeneity in diabetes-related mortality among Asian American individuals, from 2018-2021. The differences between Asian American subgroups are likely due to multiple underlying social and structural determinants of health.

educated and English proficient. Yet, these social factors appear not to result in better diabetes-related outcomes for the Filipino population. Accordingly, subsequent investigation should focus on the social determinants that contribute to suboptimal diabetes outcomes in this group, to identify potential interventions that may mitigate the high burden of diabetes-related mortality among Filipino adults.

Another potential social factor relevant to the health of Asian American populations is U.S. nativity. Differences in prevalence of diabetes, prediabetes, and gestational diabetes (in pregnant people) have been observed among Asian American subgroups by place of birth and duration of residence in the United States, with a higher prevalence among Asian immigrants in the United States who have spent more years in the United States.[19] However, the mechanisms by which these sociocultural determinants influence health and disease outcomes remain an important knowledge gap that must be addressed to identify and implement tailored strategies to promote cardiometabolic health and avoid preventable adverse outcomes among Asian American subgroups.

STUDY STRENGTHS AND LIMITATIONS. The main strength of this analysis is the national-level estimation of mortality patterns in disaggregated Asian American subgroups, which is necessary to accurately represent the burden of disease in this population. However, several limitations are identified. First, misclassification or miscoding on death certificates is possible, or if diabetes is not listed as a contributing cause, the burden of diabetes-related mortality may be underestimated. Second, the WONDER database suppresses mortality counts when fewer than 10 deaths occurred. Because fewer deaths occur at younger ages compared with older ages, several counts of mortality (particularly among individuals younger than 45 years of age) were suppressed and conservatively assumed to be 0, which likely led to a small degree of underestimation of diabetes-related mortality (especially among younger individuals). Third, this analysis focused on the 6 largest Asian subgroups in the United States. There are several additional Asian populations that may also experience diabetes-related differences and disparities that are not available in the national vital statistics data. Fourth, to support reliable estimates of mortality counts, diabetes subtypes (eg, type 1 or type 2) were not evaluated, but most of the diabetes (>90%-95%)

in the United States and among these subgroups is related to type 2 diabetes. Fifth, further statistical testing was not conducted to compare groups. Because these are population-level data (and not a sample from the population), the findings should reflect the actual population-level differences in mortality patterns between groups.

CONCLUSIONS

These findings provide contemporary national-level estimates of diabetes-related mortality patterns among Asian American subgroups. There was considerable heterogeneity in ASMR and proportional mortality from diabetes-related mortality among Asian Americans in the United States. Given the relatively high population burden of diabetes-related mortality observed between 2018 and 2021, and projections that the Asian American population is expected to double to more than 42 million by 2060,[20] these findings demonstrate an imperative to intervene to improve outcomes related to diabetes as well as prioritize prevention of diabetes.

These findings underscore the importance of understanding the clinical, social, and structural causes of differences in diabetes-related mortality among Asian American subgroups, including differences in quality of care, social factors such as the influence of cultural norms on health behaviors, and potential role of discrimination and structural racism experienced by Asian American individuals in the United States. Clinical and community prevention and management efforts that are culturally tailored and targeted toward the factors that contribute to diabetes are necessary to reduce the burden of diabetes-related mortality observed in this population.

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PERSPECTIVES

COMPETENCY IN SYSTEMS-BASED PRACTICE: Asian American subgroups experience disparities in diabetes, CVD, and mortality. Clinicians and health systems should develop and implement culturally tailored processes to evaluate and intervene on cardiovascular risk among patients who identify as members of Asian American subgroups that experience disproportionate burden of disease.

TRANSLATIONAL OUTLOOK 1: The mechanisms by which social determinants contribute to disproportionate burden of diabetes-related mortality at the individual level requires further investigation.

TRANSLATIONAL OUTLOOK 2: Population-level interventional studies that address the factors that contribute most substantially to racial and ethnic differences in cardiovascular health are necessary to reduce the burden of diabetes-related disparities in Asian American populations, particularly for Filipino and Asian Indian groups.

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