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Review Article

Vietnamese American Health—Chronic Disease and COVID-19: A Discussion of Structural Factors as Health Policies

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Vietnamese Americans are one of the largest Asian American subgroups in the United States. However, they have not been well studied, possibly because of the aggregation of Asian American data and assumptions that Asian Americans have good health. This population leads other Asian American subgroups in mortality rates of cancers, heart disease, and cerebrovascular diseases, as well as in the incidence of hypertension and type 2 diabetes. Vietnamese Americans have also been disproportionately affected by the coronavirus disease 2019 (COVID-19) pandemic demonstrated in infection rates and economic impact. After a brief overview of the Vietnam War timeline and Vietnamese refugee pathways, this paper explores how three structural factors—immigration policies, resettlement policies, and occupational practices—impact the health of Vietnamese Americans. In conclusion, these three structural factors should be considered health policies. Next steps include policy change, interventions, implementation frameworks, and resource allocation to improve health outcomes.

Keywords: Vietnamese American ▪ health outcomes ▪ COVID-19 ▪ chronic disease ▪ structural factors ▪ health policy

Reported by the 2020 United States (US) Census, Asian Americans are the fastest-growing racial/ethnic group in the United States with a population of over 24 million.[1] However, Asian American health outcomes are understudied and underestimated, possible repercussions of the problematic 'model minority myth'.[2] Believed to have universally achieved great academic and career success[3] as well as good health and life expectancy,[2] Asian Americans are often not considered when examining disparities among Black, Indigenous, People of Color (BIPOC) and White populations. Asian Americans are frequently not accepted as BIPOC and are foreign as they are not White; this exclusion undercounts the experiences of BIPOC and dismisses the issues Asian Americans face. Asian Americans are invisible in many discussions—some include public policy, education, and health.[3] Aggregation of Asian American data masks subgroup characteristics, group differences, and disparities in a diverse population.[4] This results in unexamined health problems[5] and socioeconomic factors, inequitable treatment and interventions.

Vietnamese Americans are the fourth largest Asian American subgroup and, with Chinese, Indian, Filipino, Korean, and Japanese Americans, make up 85% of all Asian Americans as of 2019.[1] Vietnamese Americans have not yet been well studied. Out of the limited number of studies on Vietnamese American health, some have small sample sizes, and many are specific to cities, counties or states. While lifestyle factors, such as diet, exercise, and smoking, greatly affect health outcomes, this paper seeks to highlight the effects of policies on health outcomes of Vietnamese Americans. The purpose of this paper is to examine structural factors—immigration policies, resettlement policies, and occupational practices—as health policies that may impact the health of Vietnamese Americans.

METHODS

Literature referenced in this paper was found in databases including Embase, Google, Google Scholar, PubMed, and PsycINFO. Search terms used include but are not limited

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POPULAR SCIENTIFIC SUMMARY

- Vietnamese Americans endured extreme challenges to escape the Vietnam War and communist government, arrive in the United States (US), and adapt to living in a new country.
- Immigration policies, resettlement policies, and occupational practices were implemented for Vietnamese Americans. While these structural factors provided Vietnamese Americans with initial support in the United States, funding and capacity were inadequate to facilitate a comprehensive and smooth transition.
- The policies are influential and should be considered health policies. In the present day, Vietnamese Americans face disparities in education, occupation, social status, financial stability, and health outcomes—chronic diseases and coronavirus disease 2019 (COVID-19).
- Vietnamese Americans are not the only Asian American subgroup to experience disparities. Recommendations moving forward include policy changes, resource allocation shifts, and interventions tailored for disproportionately affected Asian American subgroups.

to Asian American, cancer, cardiovascular, chronic diseases, coronavirus disease 2019 (COVID-19), discrimination, distress, economy, employment, family, health outcomes, health policy, health status, hypertension, immigrant, immigration policy, incidence, inflammation, job, labor, migration, occupation, policy, prevalence, refugee, resettlement, resettlement policy, social standing, status, stress, stressors, stroke, society, type 2 diabetes, Vietnamese, Vietnamese American, Vietnamese refugee, Vietnamese refugee waves, and Vietnam War. Public de-identified data sources include California Health Interview Survey administered by the University of California Los Angeles, the American Community Survey administered by the United States Census, and the Decennial Census administered by the United States Census. Existing literature on Vietnamese Americans is often based on populations in California; this paper includes relevant data, when available, from national sources as well as from some states and countries.

BRIEF HISTORY: VIETNAM WAR AND VIETNAMESE IMMIGRATION PATHWAY

The Vietnam War started in the mid-1950s because of conflict between South Vietnam and communist North Vietnam.[6] For years, US-led international involvement fought off communists with deadly warfare, aircraft bombings, and spraying of toxic herbicide Agent Orange.[6] International troops began withdrawing in 1973.[6] On April 30, 1975, South Vietnam fell to an invasion by the communist North, and the communist government captured Saigon, the capital of South Vietnam.[6,7] Leading up to and following the collapse of Saigon, Vietnamese people were faced with either staying and suffering from severe persecution and extreme hardship inflicted by the communist regime or risking their lives to escape. In total, several million Vietnamese people became refugees, fleeing their homes in hopes of surviving the dangerous journey to any country that would accept them.[8]

Vietnamese political refugees arrived in the United States in three waves. The first wave left via cargo ships or US military airplanes before the fall of Saigon in 1975 to escape persecution by the incoming communist regime. They were detained in refugee camps for a few months while they waited to be matched with their US sponsor organizations.[6] The people in this wave generally had ties to the US government and were professionals, business owners, government officials, and military personnel.[6,9] The second wave, 'the boat people', began around 1978.[6,7] Once the communist government took power, it started placing educated people, business owners, and South Vietnamese military personnel in re-education/prison camps, which typically entailed slow, painful death through malnourishment and overwork from hard labor.[6,7] The oppression and relentless persecution of these groups accelerated the exodus of the second wave of political refugees. They fled on boats during the late 1970s. Many drowned, died of dehydration or starvation or were assaulted by pirates at sea.[6] Those who survived were detained in under-resourced refugee camps for several months to years in Thailand, Malaysia, Indonesia, Singapore, Hong Kong or the Philippines.[6,7] The third wave occurred through the 1980s and 1990s with the United Nations' Orderly Departure Program.[10] These individuals were allowed to legally and safely leave Vietnam for family reunification and humanitarian reasons. This wave mostly consisted of Vietnamese people joining their families already settled in the United States, former US military employees, former prisoners of re-education camps, and children of US servicemen and Vietnamese women.[10]

While this paper focuses on Vietnamese Americans, it is important to recognize the ethnic groups in Vietnam that were forced out as well and the drastic impacts on their lives. The Indochina War,[6] which includes the Vietnam War, devastated Vietnam, Laos, and Cambodia. Cambodian refugees resulted from the country's civil war and Vietnamese occupation.[7] Laotian refugees were escaping their government which aimed to punish those who fought for the US Central Intelligence Agency.[7] The end of the war and famine displaced millions of people.[7] In the years after 1975, over two million refugees from various ethnic groups arrived in the United States:

Vietnamese people, Khmer (Cambodian), lowland and highland Lao, Hmong, Mien, and ethnic Chinese living in Vietnam-Laos-Cambodia.[6] By 1992, 1.2 million refugees had arrived in the United States: 69% Vietnamese, 19% Laotian, and 12% Cambodian.[6] As the US government agencies collected data by nationality, ethnic group-specific data was difficult to determine. However, it is estimated that 43% of Laotian refugees are highland Lao, primarily Hmong.[6]

Some Asian American subgroups, including Japanese and Chinese Americans, experienced brutal discrimination and exclusion early on and, by the late 1900s, were more established in their communities in the United States.[6] Refugees from the Indochina War experienced trauma in fleeing with no prospect of returning to their war-torn homes; they arrived in the United States with no preparation for adaptation and with no existing US Southeast Asian communities.[6] Refugees from the Indochina War differ from each other in fundamental ways—differences in social backgrounds, social class of origin, cultures, languages, and histories, as well as waves of arrival, resettlement patterns, and adaptation to living in the United States.[6] However, generally speaking, across each of the groups, educational, occupational, social, and health outcomes were negatively affected by the traumatic escape and struggle for survival followed by uncertainty and abrupt adaptation in a new country.

STRUCTURAL FACTORS

This section explores the effects of three structural factors—immigration policies, resettlement policies, and occupational practices—on Vietnamese Americans and their health outcomes.

Immigration policies

Immigration policy, caps on immigration admissions, and delays in immigration processing may impact short- and long-term health outcomes of a population.

The Interagency Task Force on Indochina Refugees was a group of governmental agencies tasked with the responsibility of receiving, processing, and resettling Vietnamese refugees in 1975.[7,11] The Interagency Task Force on Indochina Refugees resettled 130,000 Vietnamese refugees, but it was not fully funded, standardised or intended as a permanent program to continue resettling refugees.[7,12] By 1980, Congress passed the Refugee Act of 1980, which amended the existing Immigration and Nationality Act.[13] The Refugee Act updated the definition of 'refugee' to include those who experienced or feared persecution,[13] raised the number of refugees accepted annually from 17,400 to 50,000, and added standardised procedures for accepting and resettling refugees.[14,15] The Act built on existing public-private partnerships that helped refugees resettle through sponsorship.[14] These revisions to national immigration policy allowed the United States to raise the annual ceiling[14] and accept more refugees. However, there is literature supporting the idea that the Act is anti-Vietnamese immigration at its core.[16] Several law professors and pro-immigration lobbying groups suggested that passing the Act was an effort to limit the admission of refugees.[16] The Interagency Task Force on Indochina Refugees accepted 130,000 Vietnamese refugees. In contrast, the Refugee Act of 1980 capped annual acceptance at 50,000 refugees total from all applicable countries. The limit delayed admissions and prolonged-time Vietnamese refugees spent in squalid refugee camps. As the humanitarian crisis deepened and more Vietnamese political refugees needed resettlement, the Act worked in conjunction with the Orderly Departure Program.[6]

The Program for Orderly Departure from Vietnam was established from a memorandum of understanding between the United Nations (UN) and Vietnam in 1979.[8] The Orderly Departure Program was implemented as a result of both the US's political interest and desire to assist in preventing a refugee crisis and an opportunity for the international community to redeem itself for failing to provide asylum to past survivors and refugees.[10] The program allowed individuals to leave Vietnam safely and resettle in a different country. This program was able to resettle over half a million Vietnamese people in more than 30 countries within 15 years.[10] However, the program had gaps. Initially, the Orderly Departure Program was vague and did not contain operational directions.[10] This, in itself, required extensive interpretation by staff working to implement the program.[10] In addition, the UN Refugee Agency was given a large amount of power to operate a program that mostly resettled Vietnamese people in the United States.[8,10] The US's investment in the program combined with the United Nations' freedom to operationalise the program may have led to structural inequities because of systemic discriminatory practices and ulterior motives of benefit to countries. For example, the United States was interested in family reunification and retrieving any former US military employees, inmates of re-education camps, and children fathered by US servicemen left behind when the US military withdrew in 1975.[8,10] The UN was interested in persuading Southeast Asian countries to allow Vietnamese refugees to temporarily reside in camps before resettlement there or in other countries.[8,10] The UN saw this as an opportunity for countries in Asia to take the Vietnamese refugees for an undefined length of time, perhaps lightening the burden on other countries. Many Southeast Asian countries had reached their refugee limits and closed their ports to maintain their ethnic balance and to force Vietnamese refugees into the hands of the United States and United Nation.[8,10]

The Orderly Departure Program was also intertwined with US–China–Vietnam relations. This program enabled the United States to engage with a former enemy, China, and hold power in negotiations about Vietnam and the ethnic Chinese population living in Vietnam since as early as the 16th century.[10] Although the Orderly Departure Program never underwent any formal evaluation, it was able to resettle hundreds of thousands of refugees. The program exemplified the power of political forces in determining the health of Vietnamese refugees.

Immigration policies allowed Vietnamese Americans to gradually enter the United States, but the admission caps and selection processes prolonged-time Vietnamese refugees spent in refugee camps. Living conditions were difficult[6]: severe malnutrition, limited access to drinkable water, no available healthcare, lack of privacy, no education or connection to society, and anxiety and restlessness about the future. Today, Southeast Asian Americans, including Vietnamese Americans, are more likely to report worse physical health if their main reason for immigration was to escape political environments in their home countries, compared with East Asian Americans who more commonly immigrated for education or job opportunities.[17]

Resettlement policies

Resettlement policies and processes were underfunded and not well organized. They could not provide more comprehensive facilitation of Vietnamese Americans' adjustment into US society. The challenges with adjustment may have led to health disparities.

The responsibility of resettlement was delegated to voluntary organisations via private–public government contracts. These organizations consisted of religious communities that sponsored Vietnamese refugees and provided housing, job listings, clothing, and other resources until Vietnamese refugees became more self-supporting.[7] The US government gave each organisation resettlement grants of just $240–500 per refugee to spend as needed and required organisations to disperse refugees throughout the United States in an effort to prevent large Vietnamese communities.[7,8] In reality, resettlement patterns followed the locations of sponsor organizations, and often these locations were in the Midwest and Southern US rural areas that did not have many Vietnamese communities or employment opportunities for refugees, especially during an economic recession in the 1970s–1980s.[7] Although the resettlement process allowed Vietnamese refugees to be placed in communities and be given a temporary boost to become self-sufficient in the United States, the resettlement grant funds provided only enough for the first several months to a year for each refugee before the $240–$500 ran out. Many families and communities continued to kindly help Vietnamese refugees using their own resources, but the support was not sustainable and eventually ended.

Unlike several Asian American subgroups, Vietnamese people were forced out of their country. Other Asian American subgroups had more time to plan and prepare to come to the United States, for example, those coming in search of better education or jobs. There is some variability between waves of refugees, but in general, Vietnamese people left suddenly, left everything behind, were not prepared for migration, and did not know which country would accept them. Most did not know any English or anything about life outside of Vietnam, and once in the refugee camps, Vietnamese refugees had no access to education or society. Moving to the United States was a shock in many ways to many Vietnamese Americans, and the US resettlement efforts could not fulfill the demands of fully settling approximately one million Vietnamese refugees.

Because of the inability to provide for Vietnamese refugees until they could become self-sufficient, lack of support for and discrimination against the Vietnamese community in resettlement areas, and limited employment opportunities,[18] more than 40% of resettled Vietnamese refugees moved to California, Texas, Washington, Florida, and other states along the coasts in the 1970s.[7] Even more individuals relocated to the coasts since then.[7] These areas offered a greater promise of welcoming Vietnamese communities. Refugees could find more employment opportunities, social support, and a cultural home in the United States, which may serve as protective factors to buffer the effects of discrimination.[19]

Part of the resettlement process included family reunification for those who survived the refugee journey. Risk of family separation was present at all stages of the tumultuous process: within Vietnam, during migration, and during resettlement. Although the United States had some family reunification programs, responsibilities for locating and reuniting with family fell on most Vietnamese Americans. Because of the turmoil from migration and US resettlement policies to disperse refugees across the United States, many families were fragmented for years. In Vietnam, people lived in family homes with extended families. Each person played a different role and contributed to the patchwork strategy, which is a family unit system created to ensure that all roles and resources were filled and procured.[20] Vietnamese families were collectivist. All social and economic resources were gathered and shared with the family unit, and family members helped each other with everything.[18] Because of the scattered migration journeys from Vietnam and separation of families because of US policies, these family structures were disrupted. Vietnamese Americans were family centric and spent months, years, and even decades to find and help family members.[18] This abrupt

loss of family and support system[21] and the sense of loss of control over their own lives compounded into toxic stress,[22] which may increase chronic disease incidence over time.[23]

Occupational practices

Structural employment barriers have affected Vietnamese Americans' employment opportunities, economic self-sufficiency and stability[24] and long-term health outcomes.

After resettlement, Vietnamese Americans encountered difficulties entering occupations that reflected their pre-migration employment. The first wave consisted of highly educated professionals. Literature suggests that those in the first wave experienced downward occupational mobility at first, but they focused on ways to improve the status of their new occupations.[24] They worked on learning English quickly and were more likely to invest in higher education in the United States for higher-income professions. The second and third wave of immigrants varied more from business people and professionals to workers in service jobs, agriculture, and other roles.[7] Although there were high levels of job employment and retainment among Vietnamese refugees in the United States, the occupations many Vietnamese refugees in the second wave, and especially the third wave, filled were of lower status, pay, and benefits compared with their occupations in Vietnam—indicating downward occupational mobility.[7,24–26] Many Vietnamese Americans entered the workforce quickly to support their families financially and to stop depending on government assistance. However, these individuals experienced delays in learning English, which affected their potential for upward occupational mobility.

The Refugee Act of 1980 was designed with a flexible federal approach that allowed implementers to tailor employment services to refugee groups in local communities.[24] There were two main approaches: support Vietnamese Americans with cash assistance for several months while they received language and vocational training or have refugees take the first available job.[24] The first strategy was based on the notion that Vietnamese Americans will be more employable and have greater opportunity for upward occupational mobility if they received training and cash to get started.[24] The second strategy pushed Vietnamese Americans to take the first job they could find, despite their previous careers in Vietnam. This approach of immediate participation in the labor market expected Vietnamese Americans to contribute to society before earning language and vocational training.[24] The United States more frequently applied the second approach, and because of pressure from the government for refugees to stop depending on welfare, Vietnamese refugees were pushed to take the first jobs available, instead of searching for positions that were more compatible with their skills, training or learning English for higher-paying jobs or achieving the citizenship status required for many high-status jobs.[27]

The US government invested in only two retraining programs for refugees who were doctors or dentists and showed the highest return on investment for the United States.[27] The United States also financed 62 English language classes for the remaining Vietnamese refugees on welfare, in an effort to teach these individuals English skills to find jobs and stop utilising governmental assistance.[25] Others self-funded and attended English classes while working or before finding employment. But many, who were occupied with the first jobs they could find, were not able to learn English or become proficient. As of 2019, almost half of Vietnamese Americans over age 5 do not speak English well, and 77.7% prefer a language other than English.[28] Additionally, Vietnamese Americans have lower educational attainment compared with immigrants and US-born individuals.[28] By 2019, almost half of Vietnamese Americans are employed in service and laborer jobs,[28] which typically provide lower wages and higher risk of injury. Those who did not or could not learn English or pursue education were negatively affected not only in the workforce but also in health and well-being.

SOCIODEMOGRAPHIC CHARACTERISTICS

The following estimates include both individuals of single Vietnamese race/ethnicity and those of multiple races/ethnicities if including Vietnamese. As of 2019, 2.1 million Vietnamese people reside in the United States, and 52% are female.[28] The age structure shows the highest distribution for those ages 5–17 (17.5%) and 45–54 (16.3%).[28] 5.1% are under 5 years of age, 7.7% are 65–74 years, and 4.5% are 75 years or older.[28] 65.1% of Vietnamese Americans are between ages 18 and 65.[28]

While approximately 39.7% of Vietnamese Americans were born in the United States, more than 60% of Vietnamese Americans are foreign born and entered before 2000,[28] suggesting that over half of the population migrated to the United States as Vietnamese refugees. As of 2019, Vietnamese Americans have one of the lowest rates of US-born individuals compared with Chinese, Korean, Filipino, Japanese, and South Asian Americans.[29] Less than 20.4% of Vietnamese who are foreign born have been in the United States between 0 and 9 years, which is average compared with the main Asian American subgroups.[29] In contrast, almost 80% of Vietnamese Americans who are foreign born have lived in the United States for 10 years or more,[28] which is the highest proportion out of the main Asian American subgroups.[29]

Vietnamese Americans, along with several other Southeast Asian Americans: Burmese, Cambodian, Hmong, and Laotian, have lower educational attainment overall as of 2019.[28] Approximately one in four Vietnamese Americans obtained a college education and less than 0.5% attained a graduate degree.[30] Vietnamese Americans have lower educational attainment compared with other immigrants and US-born individuals.

Lower educational attainment may translate to less opportunity for higher status jobs and higher incomes. In 2019, over 67% of Vietnamese Americans ages 16 and older are in the United States labor force, which is more than the 63.6% employed among the general US population.[28] However, Vietnamese Americans are more likely to be employed in low-income occupations. 30% of working Vietnamese Americans in 2019 are employed in the service industry, including hair and nail salons, car repair shops, and restaurants; 18.7% are employed in construction, production, and transportation jobs.[28] Combined 48.7% of Vietnamese Americans work in the services or as laborers; this is greater than 37.6% of White Americans and higher than 39.7% of the total US population.[28] At work, Vietnamese Americans endure a multitude of frustrations and unpleasantries. Those with lower education levels, lack of training, and limited English proficiency may take on low-skilled, hazardous jobs[31]; they may sustain injuries, develop disabilities, and experience health issues. Those who own businesses face challenges with consistent rent and facilities, staffing, and may repeatedly interface with stressful situations or customers. Vietnamese Americans in higher-income jobs may encounter difficulties with job promotions, undervalued qualifications, and discrimination.[31] Language discrimination relates to chronic health conditions over time.[32] Employment frustration is associated with lower levels of both self-rated physical health status and mental health status.[31] A study found that after adjusting for covariates, reported discrimination was significantly associated with increased odds of poor self-rated health among Vietnamese Americans.[33]

Furthermore, Vietnamese Americans who came to the United States to avoid political persecution likely have lower perceptions of social standing than non-refugee immigrants.[34] When examining objective measures of socioeconomic status among non-refugee immigrants, Vietnamese Americans are the least educated, least employed in professional and managerial jobs, and have the least income-to-needs ratio.[33,34] Low perceived subjective social standing and low objective measures of socioeconomic status may be correlated with worse health outcomes and more stress and psychological distress.[35,36] Constant stress and concern about economic stability[26] can cause chronic physiological system inflammation, leading to chronic disease incidence.[23,37,38]

As of 2017, 21.3% of Vietnamese Americans are at 0–99% of the federal poverty level, which is the highest compared with Chinese, Korean, Filipino, Japanese, and South Asian Americans.[29] Of the largest Asian American subgroups: Chinese, Filipino, Indian, Japanese, Korean, and Vietnamese, Vietnamese Americans have the fewest financial asset holdings, least business ownership, and lowest mean income.[39] Financial assets, net income, and net education are positively associated with health over the life courses until at least aged 85+ years.[40] Vietnamese Americans are low across these three aspects, and consequently their health outcomes may be worse. Compared with these Asian American subgroups, Vietnamese Americans report the lowest quality of life, the greatest number of unhealthy days per year, and most limited English language proficiency.[33]

HEALTH OUTCOMES

Vietnamese Americans suffer from the consequences of traumatic experiences of displacement and disjointed transition into United States life even after permanent resettlement in the United States[34] and confront, for example, disparities in education,[28] socioeconomic status[28] and access to health and social services.[41] In 2010, as many as one in two Vietnamese Americans have limited English proficiency.[33] This persists in 2019, nearly 10 years later, where an estimated 44% of Vietnamese Americans over age 5 do not speak English well, and almost 78% prefer a language other than English.[28] Consistent across the research, greater English-speaking skills serve as protective factors against adverse health outcomes among Vietnamese Americans.[29,42,43] English proficiency and, particularly, health literacy[44] are linked with health status where higher proficiency and literacy correlate with better health.[45] Vietnamese Americans have significantly lower levels of health literacy than the non-Latino White population.[44] Additionally, self-rated health status may be used as health indicators and in health monitoring. 19.5% of Vietnamese Americans in California self-rated their health status as ‘excellent’, which is the lowest out of all racial/ethnic groups surveyed: Chinese (20.2%), Japanese (25.3%), Korean (22.5%), Filipino (26.9%), South Asian (30.4%), Black or African American (26.8%), American Indian/Alaska Native (23.6%), Native Hawaiian/Pacific Islander (25.8%), Latino (24.4%), and non-Latino White (27.7%).[46,47] By contrast, 6.9% of Vietnamese Americans rate their health status as ‘poor’, which is the second highest out of all previously listed racial/ethnic groups.[46,47] Among Vietnamese Americans, low levels of English proficiency and health literacy prompt concerns about poorer health outcomes coupled with difficulties accessing health services.

The combination of traumatic and life-threatening experiences with the somatization of distress may coalesce into chronic disease incidence.[17] Continuation of stress

and resulting chronic inflammation can contribute to type 2 diabetes complications,[23,37] cardiovascular issues,[38] tumorigenesis[23] and other disease outcomes. Additionally, prolonged stress and ensuing generalised susceptibility,[48] suppressed immune responses, and pre-existing conditions can place Vietnamese Americans at higher risk of contracting COVID-19 as well as experiencing a more severe disease.[49,50]

Malignant neoplasms, heart disease, and cerebrovascular diseases are all leading causes of death in Vietnamese Americans.[51,52] While the following section focuses on cardiometabolic diseases, it is essential to recognise that certain cancers are prevalent among Vietnamese Americans. Vietnamese American women have one of the highest rates of cervical cancer and lowest rates of cervical cancer screening, consistent across literature from California, Texas, Louisiana, Vietnam, Australia, and Canada.[30,53–57] Vietnamese Americans have high incidence and death rates from liver, lung, stomach, and cervical cancer reflected across research in the United States.[30,52,55,58–62] Breast, prostate, and colon cancer rates were elevated for Vietnamese Americans; while these rates were lower than White Americans, they were higher than those of Vietnamese people.[55] Liver, lung, stomach and cervical cancers, which are common to Asian countries, were high for Vietnamese Americans—higher than both Vietnamese people and White Americans.[55] This suggests increased risks from migration and related experiences.

Cardiometabolic disease

Hypertension, a modifiable risk factor for heart and cerebrovascular diseases,[63] is common among Vietnamese Americans with a prevalence of 22.5–30.8% described in some studies[29,64,65] and 43.7–44% in other research.[66,67] The discrepancies may be from research methods or sample characteristics; lower rates are in coastal urban US communities while higher rates are in rural southern US regions. In 2015, hypertension prevalence among Vietnamese Americans in Los Angeles County was 35.1%, which was 13.3% more than White Americans and 17.4% more than Japanese Americans, the lowest prevalence that year.[29] Vietnamese Americans have the second-highest stroke mortality rates among Asian American subgroups[51] and one of the highest incidence rates of type 2 diabetes.[58,68] At 10%, more Vietnamese Americans have been diagnosed with diabetes than all other Asian Americans, Pacific Islanders, and White populations in a Northern California county.[30]

Nationally, in 2020, Asian Americans have the second-lowest percentage of diagnosed diabetes at 9.7%; the lowest is White Americans at 8.5%.[69] Across the United States in 2020, 20.6% of Asian Americans have diagnosed with hypertension, which is lower than White Americans at 26.7%.[69] These percentages show the effects of data aggregation for Asian American subgroups. Combining Asian American data dangerously masks the health disparities that disproportionately affected groups experience. According to a study that utilised national data, specifically from 34 states that have adopted the 2003 standard for accurate subgroup reporting, Vietnamese Americans had higher mortality rates from cerebrovascular diseases than White Americans.[70] Vietnamese Americans, along with Filipino Americans, have the highest proportionate mortality burden for cerebrovascular diseases.[70]

In Vietnam, the prevalence of hypertension ranges. Pooled estimates show 21.1% between 2005 and 2008 although from national surveys, the prevalence ranges from 18.4 to 25%.[71,72] Approximately 25% of Vietnamese women have hypertension and 6.2% diabetes.[73] 31.2% of men have hypertension and 8% have diabetes.[73] Another study showed 11.7% of women and 10.8% of men have diabetes.[74]

Australia has one of the largest Vietnamese populations after the United States. One study used a database of people in a state in Australia and aggregated Vietnamese Australians with other Southeast Asian Australians; Southeast Asian Australians have a higher prevalence of diabetes and hypertension.[75] This study that uses the same database found that the diabetes prevalence was 14.7% among Vietnam-born Australians.[76] Another study in Australia in a different state found that Vietnamese Australians had the lowest cardiometabolic risk while Pacific Islanders had the highest cardiometabolic risk.[77] In both studies, prevalence and risk increase with a longer duration of residence in Australia.[75,77]

A study in Norway found that Vietnamese Norwegians reported an 8.2% prevalence of cardiovascular disease and 6.7% diabetes, both of which are higher than Norwegians at 2.9 and 1.8%.[78]

Measurement and reporting of cardiometabolic disease outcomes for Vietnamese Americans have many gaps: sample size, geographic area, data quality, etc. Rates of cardiometabolic diseases vary across communities and regions. However, policies and adaptation in countries outside of Vietnam may increase prevalence, morbidity, and mortality of cardiometabolic disease over time. Compared with populations that already resided in these countries, Vietnamese people face worse health outcomes. When relating to those living in Vietnam, the percentages have some overlap. Here, worse health may be explained by difficulty accessing health care and lifestyle factors, while better health may be connected to remaining in the home country during a time of peace.

COVID-19

Health disparities are surfacing during the COVID-19 pandemic although data by subgroup are not yet well

documented.[79] In Santa Clara County, California, which has one of the largest Vietnamese American populations outside of Vietnam, Vietnamese Americans are 19% of the Asian American population but account for 28% of COVID-19 cases.[80] Vietnamese Americans' rates of pre-existing conditions and diseases, higher compared with other Asian American subgroups, compound to increase risk of severe COVID-19 disease.[50] In a county in Washington state, a study measured positive COVID-19 cases by language spoken. Those who spoke Vietnamese had a 17.6% positivity rate in 2020.[81] By contrast, those who spoke English had a 4% positivity rate.[81] Vietnamese, along with Spanish and Amharic, speaking groups experienced excess risk compared with other immigrant communities in the area.[81]

Following a long history of exclusion and scapegoating of Asian Americans during public health crises, rising anti-Asian racism and xenophobia across the United States have intensified existing disparities among Asian Americans.[50] Almost a third of participants in a national study on Asian Americans reported an increase in racial discrimination, both direct/personal and indirect/vicarious, during the pandemic.[82] Experiencing more discrimination significantly predicted negative mental health, physical health, and sleep quality.[82]

A study found that in the United States and United Kingdom, individuals from Asian and Black populations are more likely to become ill with COVID-19 than White populations.[83] Even after holding constant the higher prevalence of cardiovascular disease and diabetes, Asian populations are at increased risk of severe infection and death compared to White populations.[83] In the United States and United Kingdom, Black and Asian workers are more likely to be employed in occupations with a high risk of infections such as healthcare and social assistance.[84] Moreover, many Vietnamese Americans work in service occupations and, during the COVID-19 pandemic, experienced high unemployment rates and interruptions in primary sources of family income. Nationally, Asian Americans reported a decrease in work hours, with job loss the highest among Vietnamese adults.[85] Southeast Asian Americans, a population with already high rates of low income and poverty, faced increased economic insecurity during the pandemic: unemployment and lost jobs, inability to pay rent or bills, and difficulty obtaining food.[86] Many who worked cash-based jobs or did not have immigration status could not receive government-issued economic support payments.[86] A higher percentage of Vietnamese adults, compared with several other Asian American subgroups, reported that they could not access the food resources they utilised before COVID-19.[85] Vietnamese, along with Filipino, adults were more likely to not have enough money to buy the food they needed.[85] 7% of Vietnamese American adults reported not having enough money to buy food since the start of the pandemic.[85] The toxic stress from economic uncertainty, inability to work remotely in service industries, and resulting increased exposure while outside the home and on public transportation may have increased COVID-19 rates. Living arrangements may also contribute to COVID-19 rates. Related to the collectivist culture,[18] Vietnamese Americans have one of the highest rates of living in multigenerational housing compared with other Asian American subgroups.[28] While this is economically efficient and encourages family reliance, the crowding increases the risk of COVID-19 transmission within the home.[87,88] Employment experiences, economic uncertainty, living situations, comorbidities, and pre-existing conditions, exacerbated by the turbulence of the ongoing pandemic and racism, may have contributed to higher rates of COVID-19 and more severe disease among Vietnamese Americans.[49,86]

CONCLUSION

The United States is often perceived as a land of opportunity, wealth, and freedom for anyone who works hard, striving for the 'American Dream'.[89] Many Vietnamese refugees waited months to years for approval to resettle in the United States, hopeful for a smooth transition into US society and the chance to rebuild their lives through hard work. Unfortunately, many refugees found themselves in a country with entrenched structural barriers.

Vietnamese Americans have a unique experience resulting from the intersection of their history and the structural factors—immigration policies, resettlement policies, and occupational practices. While these structural factors were adapted for Vietnamese Americans, misconstrued instruction, inadequate organization, and faulty implementation may have contributed to the detriment of the population. These underfunded institutions were constructed to aid Vietnamese Americans but may have unintended or intended consequences that introduced disadvantages, including disparities in health outcomes. This gives way to manifestations of neuroendocrine system dysfunction—chronic conditions and diseases (hypertension, cancers, type 2 diabetes, heart disease, cerebrovascular disease, etc.), increased susceptibility to infectious diseases such as COVID-19, and poor health status.[23,37,38,58] The structural factors also may influence living and work environments, which can result in similar adverse health outcomes.

Considering the effects on health, structural factors—immigration policies, resettlement policies, and occupational practices—should be classified as health policies, reifying the concept that immigration is a social determinant of health.[90] Health policies are defined as decisions, plans, and actions implemented to attain societal health care goals.[91] These policies define visions for the future, establish goals and objectives[91] and often influence

Table 1. Key takeaways.

Immigration policies, resettlement polices, and occupational practices are health policies. They are powerful, lasting determinants of community and population health.[91,92]
These health policies have a unique intersection with history—impacting Vietnamese Americans' adaptation in the United States, living and working environments, health outcomes, and future generations.[6,7,21,25,28,58,86]
Vietnamese Americans are not the only Asian American subgroup to face worse health.[29,46,47,69] To mitigate the extensive effects of chronic conditions and diseases on Asian Americans, recommendations include policy changes, resource allocation shifts, and interventions tailored for disproportionately affected Asian American subgroups.

resource allocations.[92] Health policies are powerful determinants of community and population health with rippling effects that span the life course and generations. These structural factors/health policies may create or aggravate stressors that reproduce health disparities and structural inequities which further disadvantage populations.[93] In contrast, these structural factors/health policies could be evaluated and addressed to prevent health disparities and structural inequities for improved population health.

Next steps should center not only Vietnamese Americans but also additional Asian American subgroups. Implications for practice include creating equitable, community-led interventions and policies based on theoretical foundations, socio-historical contexts of immigration and re-adaptation, user-centered design, and community-based participatory research methods. Interventions could be developed at any level, and they should elicit community members' engagement and valuable insights through the entire process. Downstream measures could include interventions for supporting Asian American subgroups with linguistically and culturally adapted resources and health providers. Upstream approaches might involve health policy changes to shift the system. Some considerations for policy modifications for Asian Americans, particularly disproportionately affected subgroups, include addressing educational attainment, economic and workforce support and advancement, engagement in politics, health insurance coverage, physical and mental health care access, immigration reform, and language proficiency. Reframed data collection methods are requisite to disaggregate Asian American health data and better assess disparities within subgroups. Further quantitative and qualitative research is needed to establish the correlation between structural factors/health policies and long-term health outcomes for various subgroups. This research will inform resource allocation, policy change, and intervention implementation for disproportionately affected Asian American subgroups.

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