Understanding Health Disparities in Cardiovascular Disease

Preventative Cardiovascular Nurses Association

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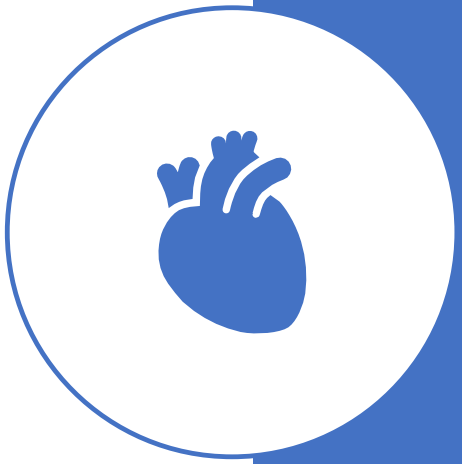
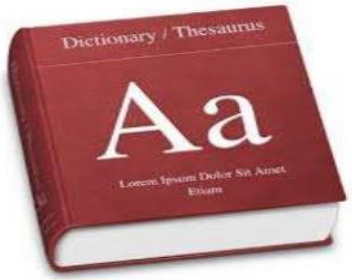


Learning Objectives

1. Discuss health disparities and variations in CVD risk profiles
2. Review the role of racial differences, characteristics, behaviors, lifestyle and acculturation among ethic communities
3. Describes strategies to help deliver culturally competent care to ethnic groups

Disparity



The lack of similarity or equality;
any quality difference;
the condition of being unequal

Health Care Disparities

- Refers to the difference between people that can impact how frequently a disease affects a particular group
- Stemming from being from a vulnerable group experiencing social and economic obstacles
- Obstacles include characteristics historically linked to discrimination or exclusion
  - Race or ethnicity
  - Religion
  - Socioeconomic status
  - Gender
  - Mental health
  - Sexual orientation
  - Geographical location
  - Disability status

Health Disparity in the US

- Exist by Ethnicity, race, geography and socioeconomic status
- Cost of these health disparities- 1.24 trillion US dollars
- Reasons for racial disparities :
  - Socioeconomic resources (Social Determinants of health)
  - Limited English proficiency
  - Differences in quality of care
- Social determinants of health:
  - Education
  - Food
  - Housing
  - Affordable transportation
  - Clean water, sanitation, non polluted air

Factors contributing to racial and ethnic disparities

- Patient level
  - Personal preferences (behaviors, diet, exercise, substance use, mental health)
  - Genetic factors
- Provider level
  - Unintentional bias
  - Varying sensitivity to needs and differences of patients from various backgrounds
  - Inadequate recognition of disparities among healthcare providers
- Healthcare level
  - Access to care
  - Insurance coverage
  - Lack of interpreter services

Racial and Ethnic Groups in the US

- US Census Bureau tracks the follow groups:
  - African American
  - Asian American and Pacific Islander
  - Native American
  - Hispanics
- Population data
  - As of 2015, there were over 43.3 million immigrants in the US, 13.5% of the population projected to increase to 185 by 2065
  - Non-Hispanic White will no longer be the majority within the next 35 years

More Numbers

- **1/3** of the U.S population Minorities
- **50** million people Uninsured
- **50%** are minorities ~25 million people
- **56** million people experience rates of preventable hospitalizations
- **2** times that of non-Hispanic Whites
- **19** million patients served by Health Services and Resources Administration (HRSA):
- **63%** are Minorities
- 92% have Income Below Federal Poverty Level

SOURCE: www.hrsa.gov/ Health Services and Resources Administration

More numbers

Disparities in the Health and Human Services Infrastructure and Workforce

Hispanics	~ 16% of the U.S. population
	< 6% of U.S. physicians
African Americans	~ 24% of the U.S. population
	~ 6% of U.S. physicians

24 million adults with limited English proficiency

Minorities are more likely than non-Hispanic Whites to report experiencing poorer quality patient-provider interactions

Racial and Ethnic Disparities in CVD

- Current Leading Cause of Death in the US
  - Heart Disease
  - Cancer
  - Accidents
  - Diabetes
- Disparity Among Cause of Death in the US
  - In 1950 no disparity in rates of death exist between African American and whites
  - As rates of death for both groups steadily declined, by 1980, a gap in rates was apparent

CVD Risk Profile of Racial and Ethic Groups African American

Has a greater burden of:

- Heart Failure- higher risk than all other groups
- Stroke-has the highest incidence, younger at time of stroke
- MI
- And other cardiovascular events

Has the highest overall death rates from CVD for both male and female

- Death occurs much earlier in age

Highest rate of hypertension in the world

- Exhibits lower blood pressure control

Evaluating CVS Risk of Racial Ethnic Groups using The ABCS Strategy

- Aspirin therapy- when appropriate
- Blood pressure control- lower BP lower risk
- Cholesterol management
- Sodium and Smoking

African American- and Aspirin

Aspirin- when appropriate

- A higher dose may be required in AA to achieve Cardiovascular protection as it appears AA appear to be more resistant to the anti-inflammatory properties of aspirin (Endocrine Society, 2014)
- Heavier patient may require higher dose Aspirin
- Recent Recommendation -no aspirin for adults without a hx of heart disease to prevent a first heart attack (helpful for people who already have heart attacks or strokes, or high risk) as the drug value is unclear for people with less risk, especially older patients due to side effects of bleeding and higher mortality (use ASCVD risk score, >10%)
- Aspirin use is lower among African American

African American- and Blood Pressure

- The prevalence of HTN in African Americans is among the highest in the world
- NHANES 2009–2012 data, the prevalence of HTN was highest among NHBs (42 %)
- HTN is 50% more frequent in blacks
- Blacks develop HTN at younger age
- AA have higher rates of hypertension of HTN-related death and cardiovascular complications (Stroke, Heart Failure, ESRD)

(Kidambi et all, 2006)

African American- and Blood Pressure

The role of Genetics- Aldosterone in regulating Blood Pressure

- Higher plasma aldosterone, promotes the retention of sodium, requires less additional sodium intake, thus any salt intake contributes to elevated blood pressure
- The capacity to take on anymore sodium has already been fully realized and thus to achieve the sodium balance, there is excretion of the sodium through the urine increasing BP
- Whites seem to adjust to additional sodium without resorting to an increase in BP indicating they have a greater capacity to for accommodating additional sodium
- Treatment approaches that antagonize aldosterone's action could have enormous impact on prevention of heart disease, stroke, and end stage renal disease in African American.

African American- and Blood Pressure

The role of health behavior and risks

- Inactivity- low fitness is most significant likely leads to overweight and obesity
- Elevated BMI and waist circumferences
- Diabetes and / or metabolic syndrome
- Discrimination and economic inequality
- Smoking

African American- and Cholesterol

- AA have a 30% chance of dying from heart disease
- Black have better cholesterol level
- AA less likely to be diagnose with heart disease

African American- and Cholesterol

The role of Genetics-

- Racial differences in plasma lipids for AA, lower triglycerides, total cholesterol, LDL with significantly higher BMI and elevated BP than White women (McIntosh et al, 2013)
- This can present a deceptively low CVD risk profile in black compared to white
- Blacks have higher lipoprotein lipase mRNA levels in subcutaneous fat then White
- Possibly lead to Blacks being underdiagnose, thus leading to higher and more fatal CVD events

African American- and Cholesterol

The role of health behavior and risks

- Inactivity- low fitness is most significant likely leads to overweight and obesity
- Elevated BMI and waist circumferences- nearly 48% of blacks are considered obese in 2012
- Diabetes
- HTN
- Diet
- Smoking

African American- Smoking

Current rate of smoking among African American (Am. Lung Association)

Race/Ethnicity	Total	Men	Women
African-Americans	16.8%	20.9%	13.5%

www.lung.org > Stop Smoking > Smoking Facts *Updated: February 20, 2019*

Sodium Facts

- Current dietary intake of sodium across all population exceeds guideline
- Current dietary intake of sodium for all ethnic subgroups exceeds guideline
- Process foods contributes 75% of sodium intake in the US, 10% occurs naturally and 5-10% is discretionary salt
- Grain products were the top most contributor of dietary sodium; meat, poultry, fish and mixture is second, together these two groups contribute 60-70% of dietary sodium
- Milk-milk products and vegetables combined are the next two major sodium contributors at 15%
- The remaining 5 food groups: eggs, dry beans, peas, other legumes, nuts, seeds, fruits, fat, oil, salad dressing, sugars, sweets and beverages contributes 15%

Sodium Facts

- Different food contain different amount of sodium (which is often added to for flavor, food processing and/or food safety) or it occurs naturally
- Data suggests sodium reduction aiming at the grain products, meat, poultry, fish and mixture groups
- Reducing dietary sodium by 3g (1200mg sodium / day) would reduce CHD, stroke, MI, prevent death, and save $10-24 billion in health care annually
- With just a reduction in 300mg/day, there is potential for 0.45 – 0.hh mm Hg reduction in systolic BP and $3- $5.3 billion in health care cost annually

African American- Sodium

- Compared to non-Hispanic Whites, Blacks consumed less sodium
- Average intake for African American of any age and gender is twice the US recommended dietary guidance
- Excess sodium intake is a risk factor for HTN, stroke, and CVD
- African American Black should still limit daily consumption to 1500mg/day due to their genetic sensitivity to sodium with a greater response of elevated BP

Latino/a and Hispanic

Latinos/as/ or Hispanics in the United States are a fast growing population, fewer than 6 million in 1960 to a now widely dispersed population of more than 50 million (or 16 percent of the nation's population).

Largest 5 U.S. Hispanic Populations, by Origin:

1. Mexicans – 64.9% of Hispanics
2. Puerto Ricans – 9.2% of Hispanics
3. Cubans – 3.7% of Hispanics
4. Salvadorans – 3.6% of Hispanics
5. Dominicans – 3.0% of Hispanics

(Pew Research, 2012)

Latino/a and Hispanic

- Hispanic refers to language and those whose ancestry comes from a country where Spanish is spoken
- Latino refers to geography, specifically, to Latin America, to people from the Caribbean, South America, and Central America
- Spanish is the official language spoken throughout Latin America, but not all Latinos/as speak Spanish. Latinos are a multiracial, multicultural groups including indigenous people who speak their own native tongues (e.g. Quechua a Native South American language family spoken primarily in the Andes, derived from a common ancestral language)

Significant History – Events which influenced these community

- First significant influx of Latino immigrants to the U.S. occurred just after most of the modern boundary between the U.S. and Mexico was established at the end of the U.S.-Mexican War (1846-48), a war during which Mexico lost a significant portion of their land to the U.S.
- The island of Puerto Rico became an “unincorporated territory” of the U.S. after Spain ceded the island and other colonial possessions at the end of the Spanish-American War of 1898. One distinctive characteristic of Puerto Rican migration is that the second Organic Act, or Jones Act, of 1917 granted Puerto Ricans U.S. citizenship. Economic prospects in the US brought many Puerto Ricans first to the Northeast.

Significant History – Events which influenced these community

- The demographic landscape of Latino America began to change dramatically in the 1960s as a result of a confluence of economic and geopolitical trends. In 1959, a revolutionary insurgency in Cuba created a virtually overnight exodus.
- A wave of Cuban immigration occurred between 1965 and the early 1970s. First, an elite group of Cubans came, but emigration continued with balseros, people who make the dangerous crossing to the United States by makeshift watercraft.
- Educated professionals who came to the United States during the early phase of Cuban migration, have become well established, whereas others who arrived with few economic resources are less so.
- Unlike immigrants from several other countries, many Cubans have gained access to citizenship and federal support through their status as political refugees.

Significant History – Events which influenced these community

- Political turmoil in Latin America during the 1970s and 1980s—particularly in the Central American nations of El Salvador, Guatemala, Honduras, and Nicaragua contributed to significant new Latin American immigration to the U.S. in the 1970s and 1980s
- Unprecedented wave of migrants from Central Americans—many of them undocumented—fled the violence of their homelands to enter the U.S. including post civil war gang violence and drug crime
- We are seeing an increased number of refugee immigrants, including children and women, entering the US from Central America.
- El Salvador, Guatemala, and Nicaragua led in the significant emigration of their citizens.

Latino/a and Hispanic – Risk Profile

- Data from the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) showed that the prevalence rates among Hispanic/Latino men and women (respectively) were 17% and 17% for diabetes, 37% and 43% for obesity, 26% and 15% for cigarette smoking, 52% and 37% for hypercholesterolemia, and 25% and 24% for hypertension (Daviglus et al., 2012).
- CVD risk factor profiles in general worsen with higher BMI
- High prevalence of severe obesity (class II/III) among Hispanic youth- A strong focus on weight reduction and control is necessary to prevent the developing of CVD later in life.
- Hispanic/Latino groups in the United States (Mexican, Puerto Rican, and Cuban background) have a high prevalence of obesity
- high BMI had a more pronounced association with prevalence of CVD risk factors among individuals at younger ages. For several CVD risk factors, including low HDL-C level and high CRP level, we observed an especially steep gradient in these risk factors across the spectrum of BMI among younger as opposed to older adults. Moreover, among individuals with class II or class III obesity (BMI ≥35 kg/m^2), prevalence of hypertension, diabetes, low HDL-C levels, and high CRP levels approached or exceeded 40% in the fourth decade of life.

Latino/Hispanics and Aspirin

Aspirin- when appropriate

- Few analysis were available, even fewer trials performed interaction testing, and none adequately controlled for important confounders
- Aspirin use was lower among African Americans and Hispanics than Whites (28.6% and 28.7% vs 37.1%, respectively)
- African Americans and Hispanics are less likely to take aspirin than their White counterparts. Differences in sociodemographic characteristics and CVD risk factors do not account for lower aspirin use among racial/ethnic minorities. Additional studies should examine methods to increase aspirin use in these populations.

Latino Hispanics- and Blood Pressure

- According to NHANES 2009–2012 data, the prevalence of HTN among Hispanics is 26 %)
- Prevalence of HTN for Hispanic men and women was 26 and 25 %, respectively, higher in Dominican, Puerto Rican, and Cuban adults.
- Mexican Americans had significantly lower prevalence of HTN compared to all other Hispanic subgroups except South Americans.

Latino/Hispanics and Blood Pressure

- 25% of men had hypertension;
- hypertension prevalence was highest among Dominican men.
- Hypertension prevalence overall among women was 24%. The prevalence of hypertension ranged from 16% (South American women) to 29% (Puerto Rican women)
- The prevalence of hypertension increased consistently across categories of BMI and significantly higher among men than women

Latino Hispanics and Cholesterol

- Prevalence of hypercholesterolemia was 52% among men and ranged from 48% (Dominican and Puerto Rican men) to 55% (Central American men). In women, prevalence of hypercholesterolemia was 37% and ranged from 31% (South American women) to 41% (Puerto Rican women)
- Among men, high LDL-C level more prevalent with elevated BMI. However, the prevalence of high LDL-C level among men did not increase across overweight and obese groups and women, high LDL-C levels had a less apparent association with BMI (Metabolic Abnormalities but Normal weight, MAN) Compared with whites, all racial/ethnic minority groups had a statistically significantly higher prevalence of MAN, which was not explained by demographic, behavioral, or ectopic fat measures. Using a BMI criterion for overweight to screen for cardiometabolic risk may result in a large proportion of racial/ethnic minority groups being overlooked.

Latino/Hispanics - Smoking

- Smoking behaviors vary widely across Hispanic/Latino groups in the US
- Smoking was more common among individuals who were US-born, had higher level of acculturation to the dominant US culture, particularly among women, and more low socioeconomic status
- About 26% of men were current smokers, women was lower (15%).
- Prevalence of current smoking was highest:
  - Puerto Rican persons (men 35.0%, women 32.6%)
  - Cuban persons (men 31.3%, women 21.9%), with particularly high smoking intensity as measured by pack-years and cigarettes/day
  - Dominican persons had the lowest smoking prevalence (men 11.0%, women 11.7%
  - 32% of Puerto Rican women and 21% of Cuban women were current smokers

Latino/Hispanics - Sodium

- Compared to non-Hispanic Whites and Blacks, Hispanics consumed less sodium
- There is limited data available on sodium intake trends among ethnic subgroups in US populations
- Hispanics should still limit daily consumption to 1500mg/day due to high risk factors, Mexican American have the highest rate of age adjusted prevalence of metabolic syndrome
- 75% of Mexican American male and 72% of Mexican American female are obese or overweight

Asian Americans

- The number of Asian persons in the United States grew by more than 40% between 2000 and 2010
- Asian persons now make up 4.9% of the population
- This group primarily comprises persons of Chinese, Asian Indian, Korean, Filipino, Vietnamese, and Japanese descent.
- Slightly more than one-half (53.8%) of Asian adults were women, and 72.1% had more than a high school education.
- Asian adults were slightly younger than white adults, with 43.6% aged 20–39 and 19.3% aged 60
- The majority (84.5%) of Asian adults were foreign-born.

Asians - Aspirin

Aspirin- when appropriate

- Racial/ethnic disparities persisted such that Whites continued to use aspirin more than Blacks, Hispanics, and Chinese in all risk groups
- Cultural attitudes, language barriers, issues of compliance, infrequent doctor visits, mistrust of the medical establishment, and differences in access to and quality of health care are plausible factors.

Asians - Blood Pressure

Few studies have examined the prevalence of hypertension among Asians living in the United States

- 25.6% Asian adults have hypertension
- Asian subgroups, age-adjusted prevalence of hypertension was lowest among Chinese (20.0%), and highest among Filipinos (32.7%)
- The prevalence of hypertension was highest among Asians aged 65 years or older, those with less than a high school education, living in poverty, foreign born but living in the U.S. over 10 years, did not meet physical activity guidelines or were physically inactive, or overweight or obese.
- Men and women did not differ in the prevalence of hypertension, but prevalence increased with age: 5.0% for the 20–39 age group, 26.5% for the 40–59 age group, and 59.6% for the 60 and over age group.
- Hypertension was lower among those with more than a high school education (22.8%) than among those with a high school education or less (31.9%).
- The prevalence of hypertension did not differ significantly by foreign-born status

Asians - Cholesterol

- The prevalence of high total cholesterol Asian adults was 10.3%.
- The prevalence of high total cholesterol did not differ significantly by sex, age, education, or foreign-born status
- The prevalence of low HDL cholesterol Asian adults was 14.3%
- The prevalence of low HDL cholesterol was five times higher in men (24.5%) than in women (5.1%)
- Foreign-born adults had twice the prevalence of low HDL cholesterol compared with U.S.-born adults (15.4% and 7.7%, respectively)
- The prevalence of low HDL cholesterol did not differ significantly by age or education.

Asians - Smoking

- Smoking prevalence for Asians is 14.9%
- Notable differences by gender, nativity, and other sociodemographic factors.
- smoking was higher among foreign-born vs. U.S.-born men (24.9% vs. 15.6%), while U.S.-born women had a higher prevalence than foreign-born women (6.3% vs. 11.7%)
- Vietnamese men had a higher prevalence of current smoking than that for the general population of men (25.2%)
- Southeast Asian men have a higher prevalence of smoking than men of other racial/ethnic ancestry groups.
- Higher prevalence of current smoking among men with lower levels of educational attainment and among men who were poor and near-poor.
- prevalence of current smoking among Asian American women was consistently lower than the prevalence for women in the general population (20.0%).[2]

Asians- Sodium

- Asian Americans had a higher sodium density vs adults of other racial/ethnic groups
- Half of sodium consumed by Asian Americans came from the top 10 food categories, in contrast to Hispanics (43.6%), Whites (39.0%), and Blacks (36.0%)
- Four food categories were a top source of sodium for Hispanics, Whites, Blacks, and others, but not among Asian Americans: cold cuts and cured meats; meat mixed dishes; eggs and omelets; and cheese.
- The top three food category sources of sodium among Asians were soups, rice, and yeast breads accounting for 28.9% of dietary sodium.
- Asian Americans were less likely to add salt at the table, but used salt in food preparation ‘very often’

Ideal Cardiovascular Health

(Am. Heart Association)

Non Smoking

BMI < 25

Physical activities at goal

Diet consistent with current guideline

BP < 120/80

Fasting glucose < 100

Patient-centered communication

Cultural competence can be defined as patients and doctors coming together to talk about their concerns without cultural barriers

- **Don’t make assumptions.** Patients from other parts of the world might not be familiar with certain types of diseases seen in the United States. Breast cancer, for instance, is practically unknown in parts of Africa, the Middle East, and Asia.
- **Explain every detail.** Patients whose native language is not English may have a difficult time understanding medical jargon.
- **Ask about alternative approaches to healing.** Many cultures may use herbal remedies or other alternative treatments that could have a potentially harmful interaction with Western medicine.
- **Withhold judgments.** Some cultures place high value on extended family members, who may fill a patient’s room, or interdependence instead of independence when it comes to self-care routines such as bathing and eating.
- **Accommodate and educate.** Nurses may sometimes be able to teach patients about techniques or technologies that are at variance with a patient’s cultural beliefs, but they should also try to find culturally accommodating alternatives when possible.

Strategies for delivering culturally competent care

- Promotion of Cardiovascular Health
  - Education
  - Counseling
  - Exercising class
- Clinicians to ask open-ended question
- Investigate patients' barriers to care
- Use community health workers
- Group HTN visit- MD, Nutritionist, Pharm D
- Health Coach

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