Children’s Health Disparities

Leadership Education and Training Program in Maternal and Child Nutrition
University of Minnesota, Division of Epidemiology

Overview of Health Disparities

- A health disparity is when a certain population bears an unequal proportion of a specific condition or illness.
- A population can either be a specific race, nationality, gender, age etc.
- Health Disparities continue to be an issue in the United States, this also holds true for our youth.
Increasing Diversity

- With the increasing diversity of the American population, health disparities can be expected to continue.
- Approximately 1/3 of the adolescent population is a member of a minority group.
- By 2050 about 56% of the adolescent population will be African American, Chicano/Latino, American Indian or Asian
  (National Center For Health Statistics 2000)

Government Action

- A 1984 DHHS task force reported several health disparities between white American and other racial and ethnic groups.
- Since then the DHHS has established an office of Minority Health with the aim to reduce disparities.
- In 1998, President Clinton responded to continued disparities by unveiling a $400 million initiative. (Weinick et al, 2000)
Government Action Continued

- Initiative to Eliminate Racial and Ethnic Disparities in Health
- The initiative is to eliminate disparities in six areas by 2010
  - Cardiovascular disease
  - Diabetes
  - Infant mortality
  - Immunizations
  - Cancer screening and management
  - HIV Infection/AIDS

(Clinical Center, 2000)

Causes of Racial Disparities
- Socioeconomic Status

- A link between poverty low educational attainment and poorer health outcomes is well established.
- Heart disease, diabetes, obesity, elevated blood sugar level, and low birth weight are more prevalent among individuals with low income and educational attainment.

(Department of Health and Human Services, 2000)
Poverty by Race Among Adolescents 10-17 Years of Age

Health United States, 2000 with Adolescent Chartbook

Causes of Racial Disparities - Culture

- Culture plays an important role in determining health related beliefs and practices.
- Individuals from specific cultures may require screening for diseases that are more prevalent in that culture, react differently to medicines or use traditional healing practices.
- Health care delivery organizations are legally required to respond to language and cultural needs of their service area by becoming “culturally competent.” (Brach et al, 2000)
Causes of Racial Disparities
- Culture
  Techniques that health care agencies could use to become more culturally competent include
  - Interpreter services
  - Recruitment of minority staff
  - Coordinating with traditional healers
  - Use of community health care workers
  - Culturally competent health care promotion
  - Including family and/or community members
  - Immersion in another culture
  - Administrative and organizational accommodations
  - Training programs
  (Brach et al, 2000)

Causes of Racial Disparities
- Access to and Utilization of Health Care
  - Several different factors both financial and nonfinancial impact minority children’s access to and utilization of health care services
  - Inequalities in use of preventative and primary care services have been documented with respect to vision screening, prescription medicines, equipment for the management of asthma and access to and use of mental health services.
  - Results place these children at risk for inadequate well child and preventive care, more lost school days and health problems as adults.
  (Zambrama and Logie, 2000)
Causes of Racial Disparities
-Access to and Utilization of Health Care

Nonfinancial factors
- Caregivers are not aware of services
- Caregivers feel uncomfortable with providers
- Provider attitudes
- Availability of translators
- Long waiting times
- Inconvenient location  (Lewis and Green, 2000: Zambrana and Logie, 2000)

Prevalence of Health Disparities
- African Americans have a higher age-adjusted death rate for all of the 15 leading causes of death.
- Cancer death rates are 144% higher for African American males then White males and 123% higher for African American females then White females
- Breast cancer age adjusted death rates are 19.3 per 100,000 for White women compared to 26.2 per 100,000 for African American women.
- African Americans are twice as likely to develop hypertension then other ethnic groups.
Causes of Racial Disparities
- Access to and Utilization of Health Care

- Health Insurance
  - In 1996, nonelderly minorities made up 25% of the population and 40% of the uninsured.
  - Public Insurance does not close the insurance gap between minorities and White Americans. (Monheit and Vistness 2000)
  - Only about 32% of eligible Latino children receive Medicaid benefits. Among these children, lack of insurance is associated with greater use of the ER as a source of primary care, less likelihood of having a usual source of care, and less contact with a physician in the previous year.
  - Children under six years of age are more likely to be covered than children age 6-17 years. (Zambrana and Logie, 2000)

Causes of Racial Disparities
- Access to and Utilization of Health Care

Utilization of Preventive Care
- African American and Hispanic infants were 70% less likely than White infants to receive complete well child care during the first six months of life. (Ronsaville and Hakim 2000)
- Lack of a usual source of care decreases continuity and may adversely affect health outcomes. White children are more likely to have a usual source of care and are more likely to have an office based source of care than Black or Hispanic children. (Weinick, Weiger and Cohen 1998)
Main Reasons For Being Without a Usual Source of Care

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>recently moved or do not know where to go</td>
<td>8%</td>
</tr>
<tr>
<td>various other reasons</td>
<td>16%</td>
</tr>
<tr>
<td>cannot afford care</td>
<td>10%</td>
</tr>
<tr>
<td>seldom or never sick</td>
<td>66%</td>
</tr>
</tbody>
</table>

Causes of Racial Disparities

- Access to and Utilization of Health Care

Access to Dental Care

- Extent of the Problem
  - 4-5 million children experience untreated dental disease
  - 20% of preschoolers have experienced some visually evident tooth decay, 50% by midchildhood
  - Decayed teeth in children from lower-income households are more likely to remain untreated at all ages. (Mouradian, Wehr, Crall 2000, Edelstein 2000)
Causes of Racial Disparities

- Access to and Utilization of Health Care

Access to Dental Care

- Disparities

- Preschoolers living in poverty have twice the odds of having decayed teeth (Edelstein 2000)
- Poor adolescents are less likely to have had a dental visit in the past year than near-poor and non-poor adolescents (64% vs 80%) (MacKay, Fingerhut and Duran 2000)
- 20% fewer nonwhite children had a dental visit in 1996 compared to white children (Edelstein 2000)

Causes of Racial Disparities

- Racism

- According to national data 45% of Whites believe that most Blacks are lazy, 51% believe that most Blacks are prone to violence, 29% believe that most Blacks are not intelligent, and 56% believe that Blacks prefer to live off of welfare.
- Whites are also reluctant to acknowledge positive stereotypes of blacks.
- Individuals who perceive experiencing racism are more likely to suffer psychological distress, depressive symptoms, substance abuse, and physical health problems. (Williams 1999)
Prevalence of Health Disparities

Although chronic diseases are adulthood, the development of these diseases is impacted by lifestyle choices developed during childhood.

- African Americans have a higher age-adjusted death rate for all of the 15 leading causes of death.
- Cancer death rates are 144% higher for African American males and 123% higher for African American females than White males and White females.
- Breast cancer age adjusted death rates are 19.3 per 100,000 for White woman compared to 26.2 per 100,000 for African America women (Young et al, 2000)
- African Americans are twice as likely to develop hypertension than other ethnic groups. (Lewis and Green, 2000)

Self-Reported Health Status of Children Ages 17 and Younger by Race and Ethnicity, 1996
Health Status

- Minority children report that their health is poor more often, and they're in excellent health less often than White children.
- Hispanic children report most often that their health status is fair or poor.
- Other factors impacting children's reported health status are.
  - Health insurance coverage.
  - Education of parents.
  - Employment of parents.


Death Rates Among Persons Ages 15-24 by Race, Ethnicity, and Gender, 1996
Food Insecurity and Hunger

“Food security means that people have access at all times to enough food for an active healthy life. It implies that people have nutritionally adequate and safe foods and sufficient household resources to ensure their ability to acquire adequate, acceptable foods in socially acceptable ways—that is through regular marketplace sources and not through severe coping strategies like emergency food sources, scavenging, and stealing. Hunger in this context refers to the uneasy or painful sensation caused by a lack of food.” (U.S. Dept of Health and Human Services, 2000)

Food Insecurity and Hunger

- NHANES III 1988-1994: 10,202,000 Americans or 4.1% of the population did not have enough food to eat.

Prevalence of food security, food insecurity, and hunger by selected characteristics of households (Current Population Survey 1999)

<table>
<thead>
<tr>
<th>House Hold</th>
<th>All</th>
<th>Without hunger</th>
<th>With Hunger</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1000</td>
<td>Percent</td>
<td>1000</td>
</tr>
<tr>
<td>With Children &lt;6</td>
<td>2,794</td>
<td>16.2</td>
<td>2,265</td>
</tr>
<tr>
<td>With Children &lt;18</td>
<td>5,594</td>
<td>14.8</td>
<td>4,340</td>
</tr>
</tbody>
</table>

Food Insecurity and Hunger
- Food Insufficiency: Impact on Health

Children in food insufficient families when compared to children in food sufficient families were more likely to
- be in fair/poor health
- experience more frequent headaches and stomachaches
- have suffered more colds in the past year (Alaimo K, Briefel RR, Frongillo EA and Olson CM, 1999)

Food Insufficiency and hunger can lead to
- Increased susceptibility to infections
- Weight loss
- Impaired growth (Brown and Politi, 1996)

Food Insufficiency may impact health through
- Nutrient deficiencies
- Stress, worry or feelings of deprivation (Alaimo K, Briefel RR, Frongillo EA and Olson CM, 1999)
Food Insecurity and Hunger
- Food Insufficiency, Impact of Inadequate Nutrition on Cognitive and Social Development

- Lack of food can lead to chronic mild nutrition and impaired growth. (Watch TD, 1995)
- Inadequate nutrition impairs cognitive development by impairing brain growth and reducing interaction with other people.
- Undernourished children are irritable, apathetic, explore their environment less, have shorter bouts of play and are less attentive to novel stimuli than well nourished children. (Kendall and Kennedy, 1998 and Alaimo D, Olson CM and Frongillo EA, 2001b)

Breastfeeding and Infant Feeding Practices

“Feeding practices during the first year of life are important because they lay the foundation for food consumption throughout the life and influence subsequent growth, development, and morbidity.”
(Bronner, Gross, Caulfield, Bentley, Kessler, Weathers and Paige, 1999)
Breastfeeding and Infant Feeding Practices

Advantages to Breastfeeding

- Provides immunological benefits resulting in less infant illness, decreased health care expenditures and decreased maternal absenteeism from work.
- Costs less than formula feeding. (Cohen, Mrtek & Mrtek, 1995; Tuttle & Dewey, 1996)
- Develops a special maternal-infant bond. (Locklin, 1995)
- May protect against the development of childhood and adolescent obesity. (Dietz, 2001)
- Provides exposure to the flavors of the mother’s diet which may facilitate acceptance of solid foods. (Fisher, Birch, Smicklas-Wright & Picciano, 2000; Mennella, 1998)

Breastfeeding and Infant Feeding Practices

- Breastfeeding rates increased from 1989 to 1995. The increases were greatest among women least likely to breast feed:
  - African American mothers
  - Younger (<25 years of age) mothers
  - Low income mothers
  - First time mothers
  - Grade school educated mothers
  - Mothers living in the South Atlantic region
  - Mothers of low birth weight infants
  - Mothers who participated in WIC
Breastfeeding and Infant Feeding Practices

Breastfeeding in the hospital and at 6 months of age

<table>
<thead>
<tr>
<th></th>
<th>In Hospital</th>
<th>At 6 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1989%</td>
<td>1995%</td>
</tr>
<tr>
<td>All Infants</td>
<td>52.2</td>
<td>59.7</td>
</tr>
<tr>
<td>White</td>
<td>58.5</td>
<td>64.3</td>
</tr>
<tr>
<td>Black</td>
<td>23.0</td>
<td>37.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>48.4</td>
<td>61.1</td>
</tr>
</tbody>
</table>

Factors influencing Latina and African American adolescents infant feeding method decision included:

- Perception that breastfeeding was painful
- Discomfort with breastfeeding especially in public
- Social support network including the teen’s mother, health care professionals, friends relatives, teachers, and baby’s father: however, most viewed the decision as theirs.
- Breastfeeding myths - certain foods must be eliminated from the diet - emotions affect the breast milk
- Health benefits and bonding for the infant (Kleinman, 1994)
Breastfeeding and Infant Feeding Practices

Early Introduction of solids…
- increases risk of allergies and insulin dependent diabetes in susceptible infants, poor nutrient absorption, diarrhea, and aspiration with coughing and gagging.
- can be considered “force feeding” of an infant who is developmentally not ready and thus cannot convey satiety.

Late Introduction of solids…
- may result in inadequate energy, vitamin, and mineral intake to support optimal growth, and difficulty accepting solids foods later in life due to missed developmental milestones. (Johnson, 1997)

Breastfeeding and Infant Feeding Practices

Introduction to solids
- Ethnicity has been reported to influence the age when mothers introduce solid foods to their infants (Goldberg, Novotny, Kieffer, Thiele, 1995)
- Age at introduction to solids reflects social, cultural, and economic factors.
- The practice of putting a baby to bed with a bottle varies by ethnicity. (Fein and Falci, 1999)
**Physical Activity**

**Importance of Physical Activity/ Recommendations**

Decreased physical activity and increased physical inactivity are major contributors to the current child and adolescent obesity epidemic. (Secretary of Health and Human Services and Secretary of Education, 2000)

**Physical activity recommendations for adolescents** (issued by the International Consensus Conference on Physical Activity Guidelines for Adolescents)

- All should be physically active daily, or nearly every day and 3 times/week for 20+ minutes of moderate to vigorous levels of exertion

**Physical activity guidelines for children** (Issued by the National Association for Sport and Physical Education)

- Elementary age children should accumulate 30-60 minutes of age appropriate activity daily and daily for 10-15 minutes moderate to vigorous activity

**Physical Activity**

**Importance of Physical Activity**

Regular participation in physical activity is an integral component of a healthy life-style. Benefits include:

- Aerobic endurance and muscular strength
- Improvement in blood lipid profiles
- Reduction in the risk of developing diabetes
- Promotes development of optimal peak bone mass
- Enhances self-esteem and self-confidence
- Decreased feeling of anxiety and stress
- Improves behavioral conduct and social skills
- Opportunity to set and strive for goals (Pate and Sirard, online, Suter and Hawes, 2000)
Participation in moderate-vigorous physical activity per week, weighted to be nationally representative

![Bar chart showing participation in physical activity among different groups.](chart.png)

(Gorden-Lason et al, 1999)

**Physical Activity**

Participation in Physical Activity Most Days Among US Children Aged, 8-16, NHANES III 1988-1994

<table>
<thead>
<tr>
<th>Group</th>
<th>Percent Active ≥ 5 days per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>61.1</td>
</tr>
<tr>
<td>Boys</td>
<td>72.4</td>
</tr>
<tr>
<td>Girls</td>
<td>49.2</td>
</tr>
<tr>
<td>Mexican American</td>
<td>48.3</td>
</tr>
<tr>
<td>Boys</td>
<td>54.9</td>
</tr>
<tr>
<td>Girls</td>
<td>41.8</td>
</tr>
<tr>
<td>Black</td>
<td>49.9</td>
</tr>
<tr>
<td>Boys</td>
<td>54.5</td>
</tr>
<tr>
<td>Girls</td>
<td>45.2</td>
</tr>
</tbody>
</table>
Physical Activity

Environmental factors contributing to physical activity include:

- Safe places for children to play and be physically active
- Access to physical activity facilities such as parks, recreation centers, and gyms
- Access to activity equipment such as bike trails, skates, and balls
- Time spent outside
- Parental role modeling and support such as transportation to a sports facility or practice and purchase equipment
- Access to community physical activity programs

Dietary Habits

Growth Retardation

- Defined as height for age less than the 5th percentile, reflects chronic undernutrition
- Weight for height is impacted before height for age falls.
- In addition to undernutrition, growth retardation may reflect the presence of infectious disease, chronic disease, and poor health.
- Is three times more prevalent than expected among low income Black infants under one year of age. (US Department of Health and Human Service, 2000)
Dietary Habits
Iron Deficiency and Anemia

The prevalence of iron deficiency anemia is high among lower income children under 5 and women of childbearing years. The prevalence is about 17% that of their higher income counterparts. Black and Mexican women of childbearing age and children under 5 is 1.7-6 times higher than their White counterparts. (U.S. Department of Health and Human Services)

Dietary factors contributing in young children are:
- Use of cow’s milk during the first year of life
- Excessive milk or juice intake
- Insufficient intake of foods high in iron after 4-6 months of age (Eden and Mir, 1997, American Academy of Pediatrics, 1998)

Dietary Habits
Macronutrient Intake

Average intakes of fat, saturated fat, sodium, and cholesterol are higher than current recommendations. Among 5th Graders in the Bogalusa heart study total fat was 35.8% and saturated fat was 12.5% of total calories. With 80% exceeding total fat recommendations and 70% saturated fat recommendations. (Cavadini and Popkin, 2000)
Dietary Habits
Food Group and Mineral Intake

- Over 45% of children met none or only one food group recommendation and only 5% met the recommendations for four or more food groups.
- Discretionary fat and sugar supplied 40% of calories and did not vary by race/ethnicity.
- White children were more likely than Black or Hispanic children to meet recommendations for grains and dairy products, but less likely than Black children for vegetables.
- Higher income children were more likely to meet recommendations for fruit and dairy products.  
  (Munoz, Krebs-Smith, Ballard-Barbash and Cleveland, 1997)

Infant Mortality

- The infant mortality rate is considered an important indicator of a population’s health. (DHHS Race and Health Home Page, on-line)
- The leading cause of death during the first 28 days of life are birth defects, premature delivery and low birth weight and pregnancy complications.
- Sudden Infant Death Syndrome (SIDS) represents 1/3 and birth defects 17% of all deaths after the first 28 days.
- Substantial disparities with ethnic/racial group exist.
Infant Mortality
Rates by Race/Ethnicity  
(US Department of Health and Human Services, 2000)

<table>
<thead>
<tr>
<th>Live Births 1997</th>
<th>All Infant Deaths (&lt;1yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate per 1,000</td>
</tr>
<tr>
<td>Total</td>
<td>7.2</td>
</tr>
<tr>
<td>Mother’s Race and Ethnicity</td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>8.7</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>5.0</td>
</tr>
<tr>
<td>Asian</td>
<td>4.6</td>
</tr>
<tr>
<td>Native Hawaiian and other Pacific Islander</td>
<td>7.9</td>
</tr>
<tr>
<td>Black</td>
<td>13.7</td>
</tr>
<tr>
<td>Hispanic</td>
<td>6.0</td>
</tr>
<tr>
<td>White, non Hispanic</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Cardiovascular Disease (CVD)

- Risk factors for CVD are present in children and persist into adulthood.
- Elevated blood pressure, excess weight, and abnormalities in plasma lipid levels in children and young adults are associated asymptomatic coronary heart disease and aortic atherosclerosis. (Berenson et al, 1998, Hickman et al, 1998)
- Fatty streak can be found in most children by age 10 and fibrous plaques is adolescents.
- The presence of 3-4 risk factors increased the prevalence of fatty streaks 8.5 times and the prevalence of fibrous-plaque lesions in the coronary arteries 12 times. (Hickman et al, 1998)
Cardiovascular Disease

According to the National Education Program Report on Blood Cholesterol Levels in Children and Adolescents total cholesterol <170 mg/dl are normal, 170-199 mg/dl are borderline and ≥200 mg/dl are high. Children in the CATCH cohort

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>Black</th>
<th>Latino</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>% with Serum Cholesterol ≥ 200 mg/dl</td>
<td>9.8</td>
<td>15.6</td>
<td>16.0</td>
<td>18.6</td>
</tr>
</tbody>
</table>

Cardiovascular Disease

Bogalusa and Brooks County

Texas Heart Studies

- Black children had higher total cholesterol levels than white children
- Black children had higher HDL cholesterol levels than white and Hispanic children
- Hispanic children had higher LDL cholesterol levels and triglycerides than White or Black Children

Birmingham, Alabama longitudinal study of childhood obesity

- African American children aged 6.5-13 yrs did not have a more unfavorable serum lipid profile than their white counterparts.
Cardiovascular Disease
Several studies have shown that excess weight gain and obesity during childhood is related to CVD risk in young adulthood.
Bogalusa Heart Study
- Over an eight year period increases in weight were accompanied by adverse changes in blood lipid profiles
- Change in obesity was the 2nd best predictor of elevated cholesterol levels at the 12 yr follow-up
- Most of the individuals with cholesterol levels between 200-239 mg/dl at follow-up had 2 or more additional risk factors.
- The prevalence of elevated insulin levels increased from 1% to 27% among 5-17 yr olds as the BMI increased from <25th to >97th percentile

Type 2 Diabetes
- Type 2 Diabetes is an emerging public health problem for children and adolescents, especially minority youth, accounting for 8%-45% of newly diagnosed cases of Diabetes in children (American Diabetes Association, 2000, Rosenbloom et al, 1999Neufeld et al, 1998)
- The prevalence of type 2 Diabetes in Pima Indian children is the highest reported to date and has increased significantly from 1967-1996 (Dabelea et al, 1999)
- Although undiagnosed type 2 Diabetes is common in adults it is unknown how many cases of type 2 Diabetes in children is undiagnosed (American Diabetes Association, 2000, Fagot-Campagna, 2000)
Type 2 Diabetes
Ethnic Disparities

Black, Hispanic and Native American adolescents are at higher risk for type 2 Diabetes as 94% of youth with type 2 Diabetes are a member of a minority group.

Native American
- Prevalence in Pima Indians in AZ 10-14 yrs old is 22.3 cases/1,000 and 50.9 cases/1,000 for 1-19 yr olds.
- Prevalence of 12-19 yr old Navajo Indians in NM of both type 1 and 2 Diabetes are 22.3/1,000 among
- Between 1988-1996 the Indian Health Service noted a 54% increase is Diabetes among adolescents aged 15-19.

Type 2 Diabetes
Ethnic Disparities Continued

African American
- Reports from clinical practices note that 69%-75% of type 2 Diabetes patients are Black. (Webber et al 1995, Pinhas- et al 1996)

Hispanic
- A study of cases of non insulin dependent diabetes in San Antonio, TX found that 83% of the cases were Hispanic while 52% of the population was Hispanic. (Hale and Danney, 1998)
Type 2 Diabetes

Culturally appropriate prevention programs require an understanding of health beliefs and behaviors of the target group.  
(Fargot-Campagna et al, 1999)

Selected Resources

- The Department of Health and Human Services  
  www.omhrc.gov/rah/
- The Office of Minority Health  
  www.os.dhhs.gov/progorg/ophs/omh
- Agency for Healthcare Research and Quality  
  www.ahrq.gov/research/minorhlth.htm
- National center on Minority Health and Health Disparities  
  http://www.omhrc.gov
- DHHS Race and Health Home page  
  http://raceandhealth.hhs.gov/