

# Bridging Domains in Efforts to Reduce Disparities in Health and Health Care

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The concept of health disparities is a familiar one, but we must continually challenge our thinking on how disparities issues are framed. The 1985 Report of the Secretary's Task Force on Black and Minority Health established a disease-oriented focus on "excess deaths" as the primary targets of disparities initiatives. However, progress in reducing disparities has been limited. The disease focus, which emphasizes the individual-level and health care services, may be too narrow. A "population health" perspective can foster a more comprehensive and integrated approach. Both disease-oriented and population health perspectives have advantages and disadvantages, for both policy and practical purposes. The challenge is to effectively leverage both approaches to improve the health of ethnic minority and other disadvantaged populations. We need bridge builders who can articulate and hear diverse perspectives, work with systems, and maintain a long-term vision for affecting the social dynamics of society.

**Keywords:** *population health; ecological model; excess deaths*

This article is one in a series based on presentations at the August 2005 Society for Public Health Education (SOPHE) Inaugural Health Education Research Disparities Summit: *Framing a Transdisciplinary Research Agenda in Health Education*. In brief, the goal of this summit was to advance progress in meeting national objectives for eliminating health disparities. The summit format and tone facilitated a boundary-spanning and integrative discourse to explore potential approaches and develop novel, solution-oriented approaches. The task of the keynote presentation in the initial plenary session, on which this article is based, was to provoke thinking about the challenges inherent in this endeavor.

The concept of health disparities is very familiar to the public health community—in itself a warning that we need to continually challenge our thinking about how disparities issues are framed. Clearly we are committed to addressing disparities and even to eliminating them when we dare to think that this is possible. However, to develop a

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public health strategy around this theme requires a step back to look critically at the concept itself. How issues are framed will determine the types of solutions proposed. Hence, it is important to consider what we mean when we talk about health disparities and to examine pros and cons of different ways of approaching the issues.

In the text that follows, we first identify the populations of interest with respect to health disparities in the United States and then highlight some recent history of national efforts to reduce or eliminate disparities. We emphasize the relationship of health disparities to the social structure. Structural factors are potentially modifiable, at least theoretically, but what is needed to modify them is not necessarily within the perceived domain of health educators and other public health professionals. The reference to “bridging domains” in the title of this article is a reflection on this issue, that is, a reminder of the importance of integrative approaches to addressing disparities, wherever the solution may reside.

The core of the article is a comparison of two very different but potentially complementary perspectives on health disparities with respect to their potential advantages and disadvantages, from both policy and practical (operational) perspectives. We conclude by illustrating this comparison with examples based on disparities in diet-related chronic diseases.

## RACIAL AND ETHNIC CLASSIFICATIONS

Health disparities are part of the larger picture of disparities across social strata. Social stratification categories in the United States are based mainly on race and ethnicity, with social class as secondary (Kawachi, Daniels, & Robinson, 2005). Racial and ethnic classifications have evolved over time in an effort to keep pace with changes in the composition and sociopolitical sensitivities of the U.S. population (Gibson & Jung, 2002; Grieco & Cassidy, 2001). When health data are reported by race/ethnicity, categories used are usually Blacks/African Americans, Hispanic/Latino Americans, American Indians and Alaskan Natives, Asian Americans and Pacific Islanders, and Whites. Within the above listing, Hispanic (often used interchangeably with Latino) is an ethnic rather than racial category and is the only officially recognized and counted ethnic category. As such, it is treated at the same level as racial classifications. As discussed later in this section, these broad categories include very diverse populations. The specific need to separate data for Asian Americans and Pacific Islanders has been recognized. The prior practice of considering these populations as a single group has been particularly misleading given the differences in certain aspects of their respective social and health profiles. Separate reporting of data for Native Hawaiians is warranted by their different social and political status compared to other U.S. populations in the Pacific Islands.

The current U.S. Census Bureau approach to ascertainment of race and ethnicity is illustrated in Figure 1. Except where Hispanic ancestry is reported, people who classify themselves as White are usually reported as one group and used as the reference point for minority group comparisons. Such a “White” category is dubious on all grounds other than sociopolitical advantage, because this category includes people with diverse ancestry and biological characteristics (Bhopal & Donaldson, 1998). Persons who report more than one race, which is now an option (see Figure 1), may be reflected in total population data but are not included in data for specific racial groups. In the most recent national health statistics, data for persons in any racial category who report Hispanic ethnicity are

→ **NOTE: Please answer BOTH Questions 5 and 6.**

**5. Is this person Spanish/Hispanic/Latino?** Mark  the "No" box if not Spanish/Hispanic/Latino.

No, not Spanish/Hispanic/Latino       Yes, Puerto Rican  
 Yes, Mexican, Mexican Am., Chicano       Yes, Cuban  
 Yes, other Spanish/Hispanic/Latino — Print group. ↗

\_\_\_\_\_

**6. What is this person's race?** Mark  one or more races to indicate what this person considers himself/herself to be.

White  
 Black, African Am., or Negro  
 American Indian or Alaska Native — Print name of enrolled or principal tribe. ↗

\_\_\_\_\_

Asian Indian       Japanese       Native Hawaiian  
 Chinese       Korean       Guamanian or Chamorro  
 Filipino       Vietnamese       Samoan  
 Other Asian — Print race. ↗       Other Pacific Islander — Print race. ↗

\_\_\_\_\_

Some other race — Print race. ↗

\_\_\_\_\_

**Figure 1.** Reproduction of questions on race and Hispanic origin from Census 2000. SOURCE: Grieco & Cassidy (2001).

usually excluded from the tabulation for that racial grouping and are grouped together (e.g., a table might list data for “non-Hispanic Whites,” “non-Hispanic Blacks,” and Hispanics/Latinos). More race/ethnicity-specific data are available for Blacks and Whites and, to a lesser extent, Hispanics (not further specified) or Mexican Americans than for the other subgroups (National Center for Health Statistics, 2004; Williams & Jackson, 2005), resulting in many limitations in the utility of these data.

The broad Census Bureau categories create aggregates that are quite diverse with respect to social and health variables. Several subgroups are identified for some populations (Figure 1); however, additional subgroups (e.g., Blacks/African Americans with African or Caribbean ancestry) may also be of interest. Variations among and within the broad categories include ancestry, country of birth, years in the United States, cultural practices and beliefs, religion and religiosity, regionality, residential patterns, childbearing, household composition, income distribution, education levels and distribution, literacy,

occupational preferences, health care usage, and health care access (Pollard & O'Hare, 1999; Smelser, Wilson, & Mitchell, 2001). In fact, so diverse are these populations that one wonders how the aggregate categories capture meaningful patterns of variation in relation to health, but they do. Apparently, as discussed below, certain factors that affect minority populations in general tend to have adverse impacts on the health of most or all subgroups. Close attention to diversity, perhaps particularly diversity related to socioeconomic status (SES), becomes critical for identifying and following up on pathways for eliminating disparities. Solutions must be woven into the fabric of the lived experiences of the affected populations.

The critical question is why these categories are such vivid markers for disparities in health status and health outcomes? As with the category "White," the racial categories used to define minority populations are not very meaningful biologically, even culturally, but they are very meaningful socially. They define differences in lived experiences, social opportunities, and liabilities (Page, 2005; Smelser et al., 2001; Williams & Jackson, 2005). Hence, they define health not because of underlying, fixed attributes of minority populations but rather because of the structure of social and economic realities affecting these populations. Kawachi et al. (2005) stressed the importance of social class and economic issues in mediating many racial and ethnic disparities versus the White population and also in defining disparities within racial and ethnic groups. LaVeist (2005) pointed to the difficulty of pinpointing the relationships between race and SES. Different conclusions are drawn about links between race and SES depending on whether the indicator is, for example, income, poverty, educational attainment, net worth, job status, or occupational prestige.

### SOME PERTINENT RECENT HISTORY

The history of public attention to health disparities as reflections of social inequities related to race and ethnicity can be traced back more than 100 years to scholars such as W. E. B. DuBois (1996) in his 1899 treatise on *The Philadelphia Negro*. In more recent history, it is useful to return to October 16, 1985. On that date, Margaret Heckler, Secretary of the U.S. Department of Health and Human Services (USDHHS) in the Reagan administration, presented the Report of the Task Force on Black and Minority Health (Centers for Disease Control, 1986). The volume released at that time was the Executive Summary (USDHHS, 1985a). The motivation for this report was the "sad and significant fact," in Secretary Heckler's words from her statement within the Executive Summary, that "there was a continuing disparity in the burden of death and illness experienced by Blacks and other minority Americans as compared with our nation's population as a whole." Subsequently, seven additional volumes were published, covering crosscutting issues in minority health; cancer; cardiovascular and cerebrovascular disease; homicide, suicide, and unintentional injuries; infant mortality and low birth weight; chemical dependency and diabetes; and Hispanic health issues (USDHHS, 1985b, 1986a, 1986b, 1986c, 1986d, 1986e, 1986f, 1986g). This Task Force Report was a major undertaking, with more than 40 scientific papers commissioned to provide background data. The report is considered a landmark document for putting the disadvantaged health status of minority groups high on the U.S. health policy agenda.

The overarching theme of the Task Force Report was "excess deaths" defined as the difference between the number of actual deaths in the minority population of interest and the number of deaths that might have been expected if the minority population had

Table 1. Average Annual "Excess Deaths" for Selected Causes, Men and Women Younger Than Age 70 Years, U.S. Minority Populations: 1979-1981

Cause of Mortality	Ethnic Minority Population							
	Men				Women			
	Black	Mexican- Born	Native American	Asian	Black	Mexican- Born	Native American	Asian
Cardiovascular diseases	8,469	-362	-165	-1,059	9,712	-39	-21	-408
Cancer	5,782	-288	-243	-471	2,269	-145	-182	-450
Cirrhosis	1,362	30	144	-117	782	-6	124	-65
Infant mortality	3,317	-36	49	-105	2,861	-26	53	-57
Diabetes	646	-2	31	-21	1,203	12	47	-22
Injuries	1,113	553	469	-523	134	-2	168	-119
Homicide	6,708	701	88	-39	1,381	20	31	1

SOURCE: Adapted from Nickens (1986).

the same age- and sex-specific death rates as the nonminority population. Task Force members and consultants examined more than 40 causes of death and identified 6 causes accounting for more than 80% of the excess deaths—cardiovascular diseases, cancer, homicide and unintentional injuries, diabetes, infant mortality, and cirrhosis of the liver—with some notable differences across ethnic groups. Most of the identified causes contributed to excess deaths in Black Americans; diabetes was a major contributor to excess deaths in Mexican American women; cirrhosis was a key concern for Native Americans (see Table 1). The Task Force identified associations of these causes of excess mortality with modifiable risk factors that included smoking, high blood pressure, high serum cholesterol, obesity, alcohol and drug misuse, low birth weight, nutrition, timing of prenatal care, maternal marital status and age, and handgun availability. The listing of modifiable risk factors was tied to recommendations about individual behavior change and the need for health care services rather than to structural factors. This was probably because of the prevailing policy orientation, but one could also argue that the structural factors of potential interest were not in the USDHHS domain. In any case, this report clearly set the benchmark for evaluating progress related to health disparities, defined as the ability to reduce the numbers of excess deaths.

The initiatives that emanated from the 1985-1986 Task Force reports did not lead to major reductions in health disparities. Some health status indicators have improved for all population groups, and some disparities have decreased, whereas others have increased (Keppel, Percy, & Wagener, 2002). President Clinton announced another set of ambitious initiatives to eliminate, not just reduce, health disparities by the year 2010, as part of his Initiative on Race (Council on Economic Advisers for the President's Initiative on Race, 1998; Garnett, 2000). Four of the six conditions targeted in the Clinton initiative were the same as those identified in the 1985 Task Force Report more than 10 years prior: infant mortality, cardiovascular diseases, cancer, and diabetes.

The sense that the problem is continually being rediscovered rather than resolved is also characterized by the opening words of a May 2000 article in the *NIH Reporter*: "Some disturbing trends *have surfaced* [italics added] in the nation's health" (Garnett, 2000).

We seem to rehash the same findings. Writing reports and articles (including this article, perhaps) about the problem alone will not solve the problem. This history of describing and pledging to address health disparities without substantive progress raises the question of why we seem to keep starting from the beginning. What is missing? Do we not have the political will? Or is it that we, in the health professions, are missing the skill sets to address the problem fully?

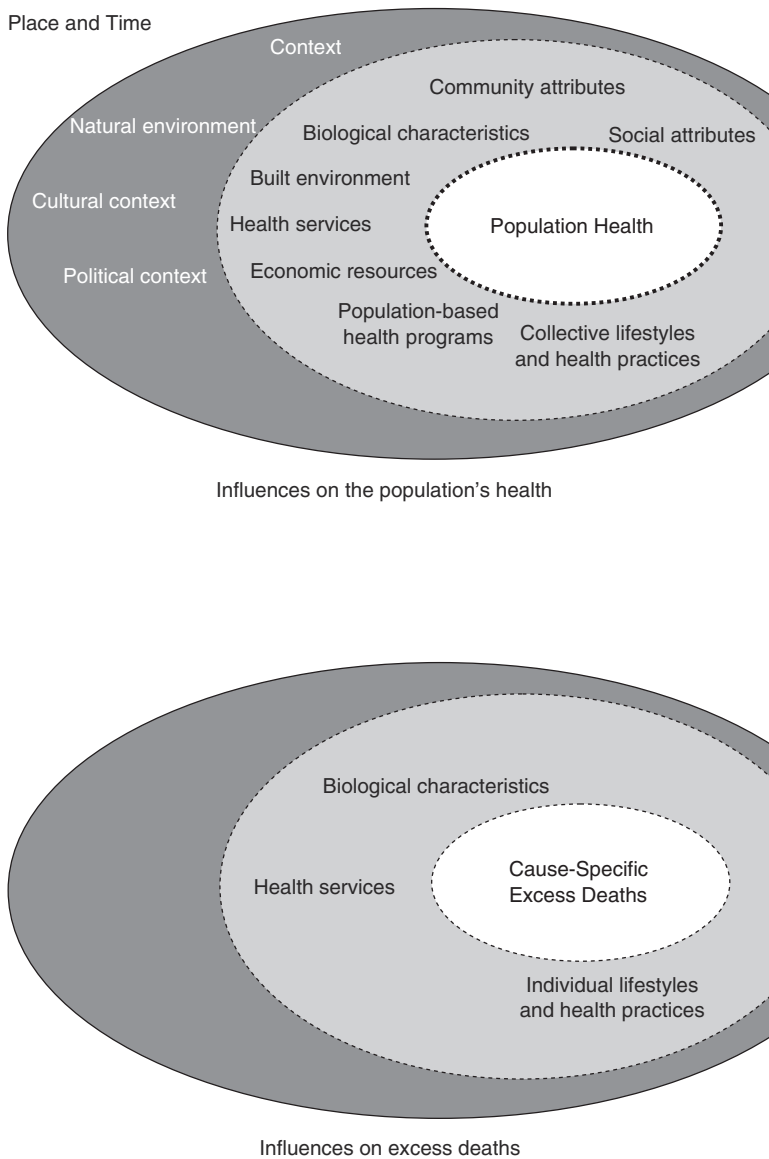
## **CONTRASTING PERSPECTIVES ON HEALTH DISPARITIES**

The central message of this article is that the disease focus perpetuated by the “excess deaths” focus is too narrow and leads us to overemphasize individual-level and health care services approaches. It overly fragments and compartmentalizes issues that are inherently related and pays inadequate attention to the hard realities of the social inequities and structural factors in which the health disparities are embedded. The latter factors are perhaps less comfortable for the average public health professional, perhaps especially those factors that are social class based, but public health scholars, educators, and practice leaders must acknowledge and address these issues at some point, at some level. This will require collaborations with scholars and practitioners in other disciplines who deal formally with topics such as race relations, social class, social justice, and community development. Taking a “population health” perspective can foster such collaborations, supporting a more comprehensive and integrated approach to addressing health disparities complementary to the focus on diseases.

The population health perspective uses an ecological model (Institute of Medicine, 2003). The model in Figure 2 (top) is an example. This model was developed by the National Center for Health Statistics for guidance on data gathering to provide a “comprehensive and coherent” view of all of the factors that influence population health (Friedman, Hunter, & Parrish, 2002). It is, therefore, useful for thinking through issues related to the health of minority populations. As shown, it allows for holistic considerations of health and disease outcomes, emphasizes the multiple types of interacting factors that operate at individual and community levels—including but not limited to health programs and health services—and also highlights the fact that all of these factors and health determinants are embedded in an ecology that includes the natural environment as well as the cultural and political contexts that are relevant at a given place and time. We cannot ignore or fail to make a bridge to the other domains in the population health model.

### **Comparing the Two Approaches**

To contrast this perspective with a focus on diseases, the graphic is repeated at the bottom of Figure 2 with “cause-specific excess deaths” instead of “population health” in the innermost circle, and with only biological and personal lifestyle or health services shown as determinants of interest. For example, a reduction in excess deaths in African Americans because of cardiovascular diseases might focus on biological predispositions, screening programs to identify high-risk individuals, and counseling about individual dietary intake and physical activity. A more population-oriented approach might focus on identifying and reducing socioecological stressors through a range of social justice initiatives (e.g., addressing poor housing, predatory lending practices and other forms of financial exploitation, and violence), by improving built environments for physical activity, and by altering the food system to bring more healthful foods to



**Figure 2.** Contrast between factors considered in a population perspective (top) and disease perspective (bottom) on health of ethnic minority populations.  
SOURCE: Adapted from Friedman, Hunter, & Parrish (2002).

high-risk communities. The disease focus puts too large a burden on the health sector to try to solve problems that are created, sustained, or covered by other sectors. Critical determinants drop out of the picture, for example, the social context, the cultural context, and political issues, ultimately suggesting that health care system interventions and motivated individuals can overcome these very powerful forces. But disparities affecting the least advantaged social strata result when this scenario fails.

Investigators, scientific and professional organizations, and funders are often highly specialized with relation to a particular disease process, decreasing the motivation for and ability to pursue the commonalities. An advantage of the population health focus is that it helps to counteract the compartmentalization of pathways of inquiry that is inherent in having disease-specific tracks. Many diseases or health outcomes are highly interrelated—biologically, behaviorally, and environmentally, and they are linked in the experiences of the communities we study. The population health perspective allows for seeing where the pathways begin, tracing causal factors to a set of linked outcomes, considering long-term effects, seeing overlap in causes and effects and the sum total of effects of these causes on health status, and identifying economies and synergies in taking corrective actions.

### Advantages of Each Focus

Although we dwell on the differences in these two perspectives, both clearly have merit. Rather than rely exclusively on the disease focus, which seems too often to be the case, including a strong population health focus should be considered whenever possible. Advantages and disadvantages of each focus for policy and practice are identified in Table 2 and described below, as guidance for how to leverage these two perspectives.

Both foci have policy advantages. The disease orientation draws attention to hard evidence of inequities and can be politically powerful. Such evidence can become the cornerstone of a strategy to help push an issue onto the policy agenda and keep it there. This focus can quantify the problem in ways that allow it to be dramatized in a very concrete way, to push for earmarked funding programs and interventions, and it supports tracking progress at the bottom line. Hence, it can be used effectively to marshal stakeholders, voluntary organizations, scientific and professional organizations, consumer advocacy groups, and industry stakeholders and to create benchmarks for accountability. For example, the concreteness of disease-focused arguments in terms of health and social costs can be used to negotiate “win-win” scenarios with industry stakeholders. Companies or sectors that might respond to data on the relative cost savings of improving minority health include those with large ethnic minority markets or employers with large numbers of ethnic minorities in the workforce. Evidence that links certain health problems directly or indirectly to products with high consumption in minority populations (e.g., linking fast food or soft drink consumption levels to obesity rates) may influence companies with large minority markets whose reputations may be tarnished by accusations that they are making huge profits by targeting harmful products to those markets. These companies can be challenged to leverage their influence on minority consumers in visible ways that have long-term, positive health implications.

The population health focus also has numerous policy advantages. It points the policy questions toward optimal health, not just the absence of disease. It highlights the context of all the relevant historical, cultural, and political factors, including the diversity within ethnic minority populations. Especially relevant here, the population health focus bridges domains and incorporates critical *nonmedical* health issues, allowing for integrated interventions from upstream to downstream. Costs are reduced by eliminating overlap and redundancy of the multitude of disease-specific approaches and by reaching the community at large without the need for labor-intensive individual screening and case identification.

There are also practical advantages in both cases. As already noted, the disease focus is highly compatible with the way funding agencies and medical practice are organized and can provide very compelling personal and career motivations and rewards for people

Table 2. Relative Advantages and Disadvantages of Disease Focus and Population Focus for Addressing Health Disparities

Focus	Advantages		Disadvantages	
	Policy Perspective	Practical Perspective	Policy Perspective	Practical Perspective
Disease focus	<p>Provides convincing evidence that ethnic minority populations are disadvantaged</p> <p>Keeps issue of minority health on policy agenda</p> <p>Quantifies the problems</p>	<p>Matches NIH and other funding streams</p> <p>Matches organization of medical specialties</p> <p>Provides specific motivation for medical and health care specialists</p> <p>Compatible with hi-tech solutions</p> <p>Conveys potential for dramatic success through focused effort</p>	<p>Sets lack of “excess deaths” as the standard</p> <p>Implies that health status of Whites represents optimal health</p> <p>Emphasizes relative risks more than absolute risks</p> <p>Minimizes appreciation for intragroup diversity</p> <p>Frames issues in medical or health system terms; de-emphasizes structural variables</p> <p>Makes it difficult to identify where to focus attention</p>	<p>Inadvertently reinforces perception of minority group inferiority</p> <p>Creates separate tracks for pursuing problems with many common determinants</p> <p>Leads to duplication, competing priorities, and fragmentation of efforts</p>
Population health focus	<p>Facilitates focus on optimal health of the population in question</p> <p>Highlights relevant historical, cultural, and political contexts</p> <p>Draws attention to diversity within ethnic minority populations</p> <p>Integrates domains of knowledge and discourse</p> <p>Incorporates critical nonmedical health issues</p>	<p>Facilities endogenous solutions</p> <p>Supports attention to assets and coping abilities</p>	<p>Links status on policy agenda to less popular issues</p> <p>Depends on actions in nonhealth sectors</p> <p>Poor match for NIH and other funding streams</p> <p>Is associated with slow, incremental progress versus quick fixes</p>	<p>Is challenging to biomedical paradigm</p> <p>Generates less enthusiasm about hi-tech solutions</p> <p>Is often distal to disease outcomes</p>

NOTE: NIIH = National Institutes of Health.

in a given specialty. The disease-oriented specializations are highly compatible with the modern type of high-tech solutions, gaining support from industries who profit from these approaches and gaining status and appeal by promising the “magic bullet.” The disease focus conveys the potential for dramatic success because the target is clear and the focus on a single problem is seen as an efficient way to concentrate resources. The definition of success relates to rescuing individuals rather than changing indicators for whole populations. Practical advantages of the population focus, often exemplified in community-based participatory research, include the emphasis on the average health state in the community, facilitation of endogenous solutions from within communities, and highlighting of community assets and coping abilities (Stiffman, Freedenthal, Brown, Ostmann, & Hibbeler, 2005). The disease model tends to be deficit oriented, emphasizing what is wrong with the patient or community without considering positives.

### **Disadvantages of Each Focus**

Many of the disadvantages identified in Table 3 for the disease and population perspectives are the converse, respectively, of the other perspectives. A model compatible with the structure of research funding and with the medical care system will de-emphasize critical social structural variables, creating an artificial, decontextualized view of the problem. Structural variables are not touched by many of the solutions we have tried, perhaps explaining the continuing rediscovery of the disparities problem. The disease focus also tends to limit the issues considered to those where excess deaths are observed and to set goals based on the absence of disease. This misses the mark with respect to the fuller definition of optimal health.

The excess-deaths approach also puts a political premium on being worse off than Whites (e.g., the consistent picture of excess deaths among Black Americans in Table 1 and Table 3). A related problem is that trends showing risk relative to Whites as decreasing may be overinterpreted as a cause for complacency, lowering the priority of minority population issues on the agenda. Another effect is that the lack of *excess* deaths among other minority populations may imply that these populations are better off than the White population in spite of having many adverse factors in the social and economic contexts in which they live, sometimes rationalized by theories of biological immunity. This can be very counterproductive for drawing attention to health issues for the populations in question. These interpretations are facilitated by the usually decontextualized epidemiological approaches to data collection and analyses and by the strong tendency to favor biological explanations for observed ethnic differences.

The six causes of excess deaths noted by the 1985 Task Force were not the only health issues affecting minority populations; however, the focus on these six causes “favored” Black Americans and inadvertently made it more difficult to draw attention to certain priority health issues for other minority populations. In addition, the meaning of the lack of excess deaths in some minority populations becomes ambiguous. Are they in fact better off than Whites? If so, is this because of innate differences in susceptibility or because of protective cultural practices that can be preserved through timely prevention programs? Are the excess deaths really present but not properly counted in populations whose minority status is less directly observable than it is for Black people? Or, is there as yet incomplete passage through the epidemiological transition to a full chronic disease burden (Kumanyika & Golden, 1991)? The search for reasons why a given population is not worse off than Whites in terms of death rates for some diseases can detract from the search for solutions to problems that are present.

Table 3. Age-Adjusted Death Rates for Selected Causes of Death in the United States, by Race and Hispanic Origin, 2000 Deaths (per 100,000 people)

Cause of Death	White	Black	American Indian	Asian	Hispanic
All causes	852	1,130	697	507	586
Heart disease	254	327	165	145	165
Cancers	198	250	127	125	121
Stroke	59	82	40	53	39
Injuries	36	38	60	18	31
Suicide	12	6	12	6	6
Cirrhosis of the liver	10	10	29	4	16
Homicide	4	21	8	3	8
HIV infection	3	24	3	1	7

SOURCE: Population Reference Bureau (2006), based on data in National Center for Health Statistics (2002).

The implication that the health of Whites should be the standard, although warranted by the advantaged position of Whites in the U.S. society, also implies that Whites are the norm for humankind—confusing sociopolitical dominance with biological distinctiveness and superiority. Moreover, setting goals on the basis of the health of U.S. Whites is inappropriate given that many population health indices in other countries with predominantly White populations are better than in the United States, unrelated to the larger amounts spent on health care in the United States in comparison to these countries (World Health Organization, 2000). Disparities must be reduced while health improves for both the minority and the White population.

Policy-related disadvantages of the population health focus include the potential diffuseness of such a broad perspective and difficulty of choosing any one focus when all are interconnected. Population health approaches can feel overwhelming and appear to compete with specialty foci on diseases. They are hard to fund because no one set of stakeholders can likely take credit for the solution, particularly because these approaches are also somewhat incremental. It is hard to attribute impact to short-term interventions and to see results “between elections.” These approaches work better in countries with political systems that are more platform driven and planning oriented than is the U.S. policy machinery. The focus on social structural issues also may be politically unpopular in the highly individualistic U.S. culture and with the tendency to believe that social class constraints can usually be overcome with sufficient personal effort.

At a practical level, the disease focus can be self-defeating to the extent that it predisposes to relatively superficial data formulations that do not capture or fully specify social structural determinants (e.g., trying to statistically “explain” ethnic disparities with simplistic variables such as years of schooling). This superficiality inadvertently also reinforces the perception, whether conscious or unconscious, that the persistent burden of excess disease must be due to some underlying flaws in the affected populations. The presumed underlying flaw might be genetic—playing into reductionist views of racial differences, or it might be behavioral, playing into the tendency to blame the victim.

Preoccupation with comparing across ethnic groups also minimizes attention to disparities within groups (Kawachi et al., 2005). Even when the status of Blacks is worse relative to Whites, some disparities between high- and low-SES strata may be greater than

in Whites (LaVeist, 2005). The focus on risks relative to Whites may also dramatize disparities in health outcomes out of proportion to where these outcomes rank as contributors to death and disability. The relative risks are greatest in lower frequency conditions and are lower for conditions that cause the highest numbers of deaths. The absolute number of people affected is higher for the conditions that cause the most deaths.

At a practical level, an important disadvantage of the population health focus is that it challenges, in terms of power as well as prevailing mind-set, the biomedical establishment. Social scientists and biomedical scientists speak different languages. In this context, it is difficult to create a discourse on social structural factors that has sufficient depth. The quality and depth of the discourse in social science are often violated when concepts and actions around social class, poverty, racism, and segregation, for example, are discussed at the everyday level in order to make these concepts acceptable to other, often clinically oriented professionals. Biomedical scientists are not only generally unschooled in the requisite areas for this discourse but they are also, by training, unlikely to either value such discourse or be inclined to substitute it for the more conventional, empirically based information-gathering approaches of allopathic medicine. Also, attempts to defend seemingly disparate paradigms may lead to polarities between social reductionists (who come to insist on the primacy of social explanations) and biological reductionists (who retain their insistence on biological explanations; McKinlay, 1992), whereas few try to build bridges and find common ground.

The nonemphasis on technology in population health is an impediment to private sector support. Finally, population health initiatives that focus on causes at the distal end of pathways are difficult to evaluate. Attribution of cause and effect is limited by time that elapses before the more distal solutions have their influence and because the effects of one variable or set of variables will probably be contingent on interactions with other variables across ecological layers. Evaluation approaches that are appropriate in population health, for example, the use of logic models, observational data, quasi-experimental designs, historical case studies, and policy analysis, may not fare well within the usual biomedical-evidence hierarchies and may also be unfamiliar to many public health professionals (Centers for Disease Control and Prevention, 1999; McQueen, 2001; Swinburn, Gill, & Kumanyika, 2005). Building capacity in this area will, therefore, be critical to the ability to fully implement population health approaches.

### **DIET-RELATED HEALTH DISPARITIES: A CASE EXAMPLE**

The 1985 Task Force noted that many of the major causes of excess deaths in minority populations were diet related or nutrition related (Kumanyika & Helitzer, 1985; USDHHS, 1985a), and many associations of dietary factors with chronic diseases are well established (USDHHS & U.S. Department of Agriculture, 2005; World Health Organization, 2003). Eating patterns vary among U.S. racial/ethnic groups, often in ways that are consistent with the observed ethnic disparities in these diseases, and some data exist to confirm that the expected diet-disease associations apply within specific ethnic groups (Kumanyika, 1993; Kumanyika & Krebs-Smith, 2001; Kumanyika & Odoms, 2001).

From a disease-oriented perspective, the available evidence leads one to emphasize different aspects of dietary risk depending on the specific diseases being considered. A World Health Organization Expert Panel focused on six diet-related chronic diseases that threaten global health: cardiovascular diseases (CVD), cancer, type 2 diabetes, obesity, dental disease, and osteoporosis (World Health Organization, 2003). For CVD,

Table 4. Cellular and Biochemical Mechanisms That Play a Role in the Pathogenesis of Major Chronic Diseases<sup>a</sup>

	Cancer	Atherosclerosis	Obesity	Diabetes
Insulin resistance	+	+	+	+
Cell proliferation	+	+	–	+
Inflammation	+	+	–	+
Apoptosis	+	+	–	+
Changes in signal transduction, gene expression	+	+	+	+
DNA modifications/mutations/genetic variation	+	+	+	+

SOURCE: Adapted from Deckelbaum et al. (1999) and Bray (2002).

a. A plus sign indicates association. A minus sign indicates that no specific body of evidence is available to suggest that a specific mechanism or pathway correlates with the indicated disease.

there were several well-established diet-related risk factors related to type and relative proportions of dietary fats and carbohydrates; type and amount of dietary fiber; and intakes of sodium and potassium, fruits and vegetables, and alcoholic beverages. Several of the other outcomes were also linked to intakes of fruits and vegetables and to obesity. For other diseases, however, the dietary risk factors with reasonably strong evidence varied, usually as subsets of those identified for CVD. Diabetes was the only other condition for which there was reasonably good evidence of a link to fat intake. Cured meats and other salt-preserved foods were highlighted in cancer risk. Obesity was the only condition explicitly linked to excess intake of high-energy dense foods and to the environmental and market variables that predispose certain populations to excess caloric intake (Swinburn, Caterson, Seidell, & James, 2004).

The disease-by-disease considerations of diet-related risk may be most useful for gaining insights about etiologic pathways but can give a disjointed picture of how diet relates to chronic diseases overall. The importance of also taking a population perspective becomes clear when one recognizes that the various nutrients and foods are inter-related within the diet. All types of foods and the spectrum of specific nutrients must be considered in preventive or therapeutic dietary guidance. Shifts in one aspect of the diet invariably lead to shifts in other elements, and fundamental nutrient adequacy considerations must always be incorporated. Furthermore, as we learn more about disease etiology and mechanisms, it seems that the same dietary factors are associated with several different diseases, as illustrated in Table 4 (from Deckelbaum et al., 1999)—whether or not we are always able to identify the associations in epidemiological studies. The coherence in dietary recommendations for chronic disease risk reduction that emanate from a variety of disease-specific organizations is not coincidental, and all can be readily embraced by a population approach.

Starting from dietary practices or eating patterns of a population enables concurrent attention to the set of diseases that may apply, allows attention to a broader set of issues related to health and well-being, and leads to a focus on social and environmental determinants that are at the core of ill health. A population health focus supports consideration of cultural foodways, food availability, and other market variables, including what foods are available or heavily marketed (Henderson & Kelly, 2005; Horowitz, Colson, Hebert, & Lancaster, 2004; Morland, Wing, Diez Roux, & Poole, 2002; Tirodkar & Jain, 2003) and how foods are priced. For example, there are some striking imbalances with respect to the pricing of foods that are high in sugar (Drewnowski, 2004).

The need for a population focus is also evident when dietary quality data are analyzed by race/ethnicity, for African Americans in particular, or SES, using a Healthy Eating Index that evaluates how well people's diets adhere to national dietary recommendations (Basiotis, Carlson, Gerrior, Juan, & Lino, 2002). There is a clear gradient of decreasing dietary quality with decreasing income or education, consistent with the interpretation that diet is a key mediator of the link between SES and diet-related health disparities (Basiotis et al., 2002). Dietary quality is least favorable for African Americans, who also have the most consistent pattern of related disparities in disease rates. The diets of Mexican Americans yield a Healthy Eating Index score that is higher than in non-Hispanic Whites, particularly for persons born in Mexico, coincident with the lower-than-average rates of some diet-related diseases in the Mexican American population. Dietary quality can then be understood not primarily as a problem of "non-compliant" patients or individuals who choose adverse lifestyles but as an issue of systemic factors that cause people with less education or lower income, longer duration of exposure to the U.S. environment, or less favorable food marketing environments to eat less well (Cockerham, Rütten, & Abel, 1997; Karp, Cheng, & Meyers, 2005; Power, 2005).

The emphasis on diagnosis and treatment in a disease-focused approach presumes an equitable health care system. However, differences in access to care as well as bias in service delivery may perpetuate disparities. The Institute of Medicine report on "Unequal Treatment" (Smedley, Stith, & Nelson, 2003) includes detailed descriptions of the various pathways whereby racial and socioeconomic differences in access to care and in service delivery can lead to systematic differences—disparities—in outcomes. These include the manner in which providers communicate with patients, cultural influences, socioeconomic forces related to both access to care and the ability to follow through on medical advice, differences in how facts are interpreted by patients and by professionals, and stereotyping. Some of these disparities in health care are institutional, and some are perpetuated by providers as unwitting agents of a biased system.

For example, in the example of diet-related diseases, providing narrowly disease-focused dietary advice may be inherently biased if it is based on nutritional technicalities rather than practicalities and fails to consider market questions of price, availability, and accessibility. Advice that ignores social roles around food acquisition, food preparation, and the demands within households also puts some clients or patients at a disadvantage with respect to the ability to adhere. Similarly, advice about exercise and physical activity may not consider the social positions of persons within their family or community, objective neighborhood or household characteristics, the social/psychological assessment of the proximal environments where people live, or historical experiences with physical labor. These variables are clearly relevant to the ability and willingness to engage in physical activity at recommended levels.

Provider bias may also influence who receives counseling about diet or physical activity, for example, a differential based on race or SES. For example, in the year 2000 National Health Interview Survey, the overall percentage of respondents who reported receipt of dietary counseling from a health care professional was lower in foreign-born Blacks and Latinos compared with Whites, and the proportion who reported receipt of exercise counseling was significantly lower in both foreign-born and U.S.-born Blacks compared with U.S.-born Whites (Goel, McCarthy, Phillips, & Wee, 2004). The analysis was confined to those reporting having seen or talked with a health professional within the past year and therefore appeared to reflect quality of care rather than access to care. In an analysis of national survey data for obese persons who had had a routine

medical checkup in the prior year (Galuska, Will, Serdula, & Ford, 1999), educational level (some college or college) was a significant predictor of the likelihood of having received advice to lose weight from a health care professional.

These examples based on diet-related diseases could be replicated in other areas of health disparities. The point is that although there are many scientific and funding-related advantages to focusing on single diseases, this approach is insufficient for framing solutions that apply to whole populations and that, therefore, must consider and integrate the entire picture of risk factors and their underlying causes.

## CONCLUSION

We have framed this discussion in terms of two different but complementary perspectives on health disparities. If this commentary has been successful, it will have persuaded those who are accustomed to a disease focus—which seems to dominate—to recognize its inadequacies as the only perspective. Second, we hope to have convinced those who favor the population health perspective that the disease focus can also be legitimate and useful. We have also stressed that, in comparison to the excess-deaths approach, the population health perspective allows for a more holistic approach that is conceptually more appealing and is assets oriented. However, the excess-deaths focus has some clear policy advantages and implications for the mobilization of human and financial resources. Both also have clear advantages from a practical perspective. Once the need for both perspectives has been acknowledged, the challenge will be to leverage them to improve the health of ethnic minority populations, while avoiding the disadvantages. We need bridge builders who can not only articulate issues and hear diverse perspectives but also work with systems and understand the long-term impacts of their work on the social dynamics of society.

Health disparities are social disparities and will be judged by those who experience them in that context. Our national history regarding social disparities is shameful, stagnant, and revealing strong paradoxes between the lived reality of people in lower social strata and the expressed ethical ideals and moral values related to equity and opportunity. The debate that we have today originated at least as early as 1899 when DuBois (1996) wrote in *The Philadelphia Negro*:

One thing of course we must expect to find, and that is a much higher death rate at present among Negroes than among whites. This is one measure of the difference in their social advancement. . . . Therefore, when considering the health statistics of the Negroes we seek first to know their absolute condition rather than their relative status. We want to know what their death rate is, how it has varied and is varying, and what its tendencies seem to be; with these facts fixed, we must then ask "What is the meaning of a death rate like that of the Negroes of Philadelphia? Is it, compared with other races large, moderate, or small? . . . Finally, we must compare the death rate of the Negroes with that of the communities in which they live, and thus roughly measure the social difference between these neighboring groups. (p. 148)

To end on a positive note, there are signs of progress. In our efforts to address obesity in African American communities, a network of African American researchers is extending the concept of transdisciplinary work to include colleagues from the business, economics, philosophy, literature, music, folklore, and other nontraditional but health-relevant disciplines and professions (Kumanyika, Gary, & Prewitt, 2005). For

example, the experience of people of color that is stored in literature and folklore may offer insights about pathways to resolving some of the seemingly intractable problems that perpetuate health disparities. We have not discovered the problem but perhaps we can discover solutions and prevent others from having to discover the problem again 100 years from now. Today we still struggle as professionals to do what DuBois laid out as simple methodological truisms. We need to finish the work that DuBois started so heroically by using science to tackle social injustice.

## References

- Basiotis, P. P., Carlson, A., Gerrior, S. A., Juan, W. Y., & Lino, M. (2002). *The Healthy Eating Index: 1999-2000*. U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. CNPP-12, 2002. Retrieved January 29, 2006, from <http://www.cnpp.usda.gov>
- Bhopal, R., & Donaldson, L. (1998). White, European, Western, Caucasian, or what? Inappropriate labeling in research on race, ethnicity, and health. *American Journal of Public Health, 88*(9), 1303-1307.
- Bray, G. A. (2002). The underlying basis for obesity: Relationship to cancer. *Journal of Nutrition, 132*, 3451S-3455S.
- Centers for Disease Control. (1986). Perspectives in disease prevention and health promotion report of the Secretary's Task Force on Black and Minority Health. *Morbidity and Mortality Weekly Report, 35*(8), 109-112.
- Centers for Disease Control and Prevention. (1999). Framework for program evaluation in public health. *Morbidity and Mortality Weekly Report, 48* (No. RR-11), 1-40.
- Cockerham, W. C., Rütten, A., & Abel, T. (1997). Conceptualizing contemporary health lifestyles: Moving beyond Weber. *Sociological Quarterly, 38*, 321-341.
- Council on Economic Advisers for the President's Initiative on Race. (1998). *Changing America. Indicators of social and economic well-being by race and Hispanic origin*. Retrieved January 29, 2006, from <http://www.access.gpo.gov/eop/ca/index.html>
- Deckelbaum, R. J., Fisher, E. A., Winston, M., Kumanyika, S., Lauer, R. M., Pi-Sunyer, F. X., et al. (1999). Summary of a scientific conference on preventive nutrition: Pediatrics to geriatrics. *Circulation, 100*, 450-456.
- Drewnowski, A. (2004). Obesity and the food environment: Dietary energy density and diet costs. *American Journal of Preventive Medicine, 27*(3 Suppl.), 154-162.
- DuBois, W. E. B. (1996). *The Philadelphia Negro: A social study*. Philadelphia: University of Pennsylvania Press. (Originally published 1899)
- Friedman, D. J., Hunter, E. L., & Parrish, R. G. (2002). *Shaping a vision of health statistics for the 21st century*. Washington, DC: Department of Health and Human Services Data Council, Centers for Disease Control and Prevention, National Center for Health Statistics, and National Committee on Vital and Health Statistics. Retrieved January 29, 2006, from <http://www.ncvhs.hhs.gov/21st%20final%20report.pdf>
- Galuska, D. A., Will, J. C., Serdula, M. K., & Ford, E. S. (1999). Are health care professionals advising obese patients to lose weight? *Journal of the American Medical Association, 282*(16), 1576-1578.
- Garnett, C. (2000, May 2). Health disparities tops NIH agenda. *NIH Record, 52*(9). Retrieved January 29, 2006, from [http://www.nih.gov/news/NIH-Record/05\\_02\\_2000/main.htm](http://www.nih.gov/news/NIH-Record/05_02_2000/main.htm)
- Gibson, C., & Jung, K. (2002). *Historical census statistics on population totals by race, 1790 to 1990, and by Hispanic origin, 1970 to 1990, for the United States, regions, divisions, and states* (Working Paper Series, No. 56). Washington, DC: U.S. Census Bureau, Population Division. Retrieved January 29, 2006, from <http://www.census.gov/population/www/documentation/twps0056.html>

- Goel, M. S., McCarthy, E. P., Phillips, R. S., & Wee, C. C. (2004). Obesity among U.S. immigrant subgroups by duration of residence. *Journal of the American Medical Association, 292*(23), 2860-2867.
- Grieco, E. M., & Cassidy, R. C. (2001). Overview of race and Hispanic origin: 2000 (U.S. Census Bureau, Census 2000 Brief, C2KBR/01-1). Washington, DC: Government Printing Office. Retrieved January 29, 2006, from <http://www.census.gov/prod/2001pubs/cenbr01-1.pdf>
- Henderson, V. R., & Kelly, B. (2005). Food advertising in the age of obesity: Content analysis of food advertising on general market and African American television. *Journal of Nutrition Education and Behavior, 37*(4), 191-196.
- Horowitz, C. R., Colson, K. A., Hebert, P. L., & Lancaster, K. (2004). Barriers to buying healthy foods for people with diabetes: Evidence of environmental disparities. *American Journal of Public Health, 94*, 1549-1554.
- Institute of Medicine. (2003). *The future of the public's health in the 21st century*. Committee on Assuring the Health of the Public in the 21st Century, Board on Health Promotion and Disease Prevention. Washington, DC: National Academy Press.
- Karp, R. J., Cheng, C., & Meyers, A. F. (2005). The appearance of discretionary income: Influence on the prevalence of under- and over-nutrition. *International Journal of Equity in Health, 4*, 10. (electronic, open-access journal)
- Kawachi, I., Daniels, N., & Robinson, D. E. (2005). Health disparities by race and class: Why both matter. *Health Affairs (Millwood), 24*(2), 343-352.
- Keppel, K. G., Percy, J. N., & Wagener, D. K. (2002). *Healthy People 2000: Trends in racial and ethnic-specific rates for the health status indicators, 1990-98* (Healthy People 2000 Statistical Notes, No. 23). Atlanta, GA: National Center for Health Statistics, Centers for Disease Control. Retrieved January 29, 2006, from <http://www.cdc.gov/nchs/products/pubs/pubd/hp2k/statnt/30-21.htm>
- Kumanyika, S., Gary, T., & Prewitt, T. E. (2005, March). African American collaborative obesity research network. A potential strategy for reaching the deep structure underlying the obesity problem in African American communities. Paper presented at the 19th National Conference on Chronic Disease Prevention and Control. Health Disparities—Progress, Challenges, and Opportunities. Centers for Disease Control and Prevention Chronic Disease Conference, Atlanta, GA.
- Kumanyika, S. K. (1993). Diet and nutrition as influences on the morbidity/mortality gap. *Annals of Epidemiology, 3*, 154-158.
- Kumanyika, S. K., & Golden, P. M. (1991). Cross-sectional differences in health status in U.S. racial/ethnic minority groups: Potential influence of temporal changes, disease, and life-style transitions. *Ethnicity and Disease, 1*(1), 50-59.
- Kumanyika, S. K., & Helitzer, D. L. (1985). Nutritional status and dietary patterns of racial minorities in the United States. In *Report of the Secretary's Task Force on Black and Minority Health. Volume 2: Crosscutting issues in minority health* (pp. 118-190). Washington, DC: U.S. Department of Health and Human Services, Public Health Service.
- Kumanyika, S. K., & Krebs-Smith, S. M. (2001). Preventive nutrition issues in ethnic and socio-economic groups in the United States. In A. Bendich & R. J. Deckelbaum (Eds.), *Primary and secondary preventive nutrition* (chap. 19, pp. 325-356). Totowa, NJ: Humana Press.
- Kumanyika, S. K., & Odoms, A. (2001). Nutrition issues for African Americans. In R. L. Braithwaite & S. E. Taylor (Eds.), *Health issues in the Black community* (2nd ed., chap. 20, pp. 419-447). San Francisco: Jossey-Bass.
- LaVeist, T. A. (2005). Disentangling race and socioeconomic status: A key to understanding health inequalities. *Journal of Urban Health, 82*(2 Suppl. 3), iii26-34.
- McKinlay, J. B. (1992). Health promotion through healthy public policy: The contribution of complementary research methods. *Canadian Journal of Public Health, 83* (Suppl. 1), S11-S19.
- McQueen, D. V. (2001). Strengthening the evidence base for health promotion. *Health Promotion International, 16*(3), 261-268.

- Morland, K., Wing, S., Diez Roux, A., & Poole, C. (2002). Neighborhood characteristics associated with the location of food stores and food service places. *American Journal of Preventive Medicine, 22*, 23-29.
- National Center for Health Statistics. (2002). *Health, United States, 2002, with Chartbook on Trends in the Health of Americans*. (DHHS Publication No. 2002-1232). Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control. Retrieved November 25, 2002, from [www.cdc.gov/nchs/products/pubs/pubd/hs/02tables.htm](http://www.cdc.gov/nchs/products/pubs/pubd/hs/02tables.htm)
- National Center for Health Statistics. (2004). *Health, United States, 2004, With Chartbook on Trends in the Health of Americans* (DHHS Publication No. 2004-1232). Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control.
- Nickens, H. (1986). Health problems of minority groups. Public health's unfinished agenda. *Public Health Reports, 101*, 230-231.
- Page, J. B. (2005). The concept of culture: A core issue in health disparities. *Journal of Urban Health, 82*(2, Suppl. 3), iii35-43.
- Pollard, K., & O'Hare, W. (1999). America's racial and ethnic minorities. *Population Bulletin, 54*, 1-34.
- Population Reference Bureau. (2006). *Racial and ethnic differences in U.S. mortality*. Retrieved January 29, 2006, from <http://www.prb.org/Template.cfm?Section=PRB&template=/ContentManagement/ContentDisplay.cfm&ContentID=7908>
- Power, E. M. (2005). Determinants of healthy eating among low-income Canadians. (2005). *Canadian Journal of Public Health, 96* (Suppl. 3), S37-S42, S42-S48.
- Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: National Academy Press.
- Smelser, J. N., Wilson, W. J., & Mitchell, F. (Eds.). (2001). *America becoming: Racial trends and their consequences* (Vol. 1). Washington, DC: National Academy Press.
- Stiffman, A. R., Freedenthal, S., Brown, E., Ostmann, E., & Hibbeler, P. (2005). Field research with underserved minorities: The ideal and the real. *Journal of Urban Health, 82*(2, Suppl. 3), iii56-66.
- Swinburn, B. A., Caterson, I., Seidell, J. C., & James, W. P. (2004). Diet, nutrition and the prevention of excess weight gain and obesity. *Public Health Nutrition, 7*(1A), 123-146.
- Swinburn, B., Gill, T., & Kumanyika, S. (2005). Obesity prevention: A proposed framework for translating evidence into action. *Obesity Reviews, 6*(1), 23-33.
- Tirodkar, M. A., & Jain, A. (2003). Food messages on African American television shows. *American Journal of Public Health, 93*, 439-441.
- U.S. Department of Health and Human Services. (1985a). *Report of the Secretary's Task Force on Black and Minority Health. Executive Summary*. Washington, DC: Government Printing Office.
- U.S. Department of Health and Human Services. (1985b). *Report of the Secretary's Task Force on Black and Minority Health. II. Crosscutting Issues in Minority Health*. Washington, DC: Government Printing Office.
- U.S. Department of Health and Human Services. (1986a). *Report of the Secretary's Task Force on Black and Minority Health. III. Cancer*. Washington, DC: Government Printing Office.
- U.S. Department of Health and Human Services. (1986b). *Report of the Secretary's Task Force on Black and Minority Health. IV. Cardiovascular and cerebrovascular diseases, Part 1*. Washington, DC: Government Printing Office.
- U.S. Department of Health and Human Services. (1986c). *Report of the Secretary's Task Force on Black and Minority Health. IV. Cardiovascular and cerebrovascular diseases, Part 2*. Washington, DC: Government Printing Office.
- U.S. Department of Health and Human Services. (1986d). *Report of the Secretary's Task Force on Black and Minority Health. V. Homicide, suicide, and unintentional injury*. Washington, DC: Government Printing Office.
- U.S. Department of Health and Human Services. (1986e). *Report of the Secretary's Task Force on Black and Minority Health. VI. Infant mortality and low birthweight*. Washington, DC: Government Printing Office.

- U.S. Department of Health and Human Services. (1986f). *Report of the Secretary's Task Force on Black and Minority Health. VII. Chemical dependency and diabetes*. Washington, DC: Government Printing Office.
- U.S. Department of Health and Human Services. (1986g). *Report of the Secretary's Task Force on Black and Minority Health. VIII. Hispanic health issues; inventory of DHHS programs; survey of non-federal community*. Washington, DC: Government Printing Office.
- U.S. Department of Health and Human Services, & U.S. Department of Agriculture. (2005). *Dietary guidelines for Americans, 2005* (6th ed.). Washington, DC: Government Printing Office.
- Williams, D. R., & Jackson, P. B. (2005). Social sources of racial disparities in health. *Health Affairs (Millwood)*, 24(2), 325-334.
- World Health Organization. (2000). *The world health report—Health systems: Improving performance*. Geneva, Switzerland: World Health Organization.
- World Health Organization. (2003). *Diet, nutrition, and the prevention of chronic diseases* (Technical Report Series No. 916). Geneva, Switzerland: World Health Organization.