

# Social Determinants of Health: A View on Theory and Measurement

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## ABSTRACT

The theory and measurement of the social determinants of health featured in a three-part seminar series on Social Determinants of Health, Law and Policy held at the Taubman Center for Public Policy, Brown University in February 2012.<sup>1</sup> The seminar series represents a broader commitment to engage the public, health providers, researchers, and policy makers in dialogue for the purposes of identifying and addressing social determinants of health at community and state levels. This article summarizes and expands upon the first part of the series by defining social determinants of health and exploring methodological debates over their measurement, with a focus on income inequality, racism and discrimination, housing security, and food security. The authors of this article and the members of the seminar series represent the kind of interdisciplinary and applied work necessary for addressing the five key areas of social determinants of health identified in *Healthy People 2020*: economic stability, education, social and community context, health and health care, and neighborhood and environment.<sup>2</sup>

**KEYWORDS:** social determinants of health; inequalities; discrimination; insecurity

National Health Service.<sup>3,4</sup> Since that landmark report, the relationship between socioeconomic status and health (the ‘social gradient’) has become one of the most persistent and ubiquitous findings in health research. In the United States, the *Healthy People* initiative has spearheaded the national effort to reduce health inequities and broaden awareness of the importance of the social determinants of health.<sup>2</sup>

Social determinants of health refer to both features of and pathways by which societal conditions affect health. These include income, education, occupation, discrimination, and working/living conditions (see Figure 1).<sup>5</sup>

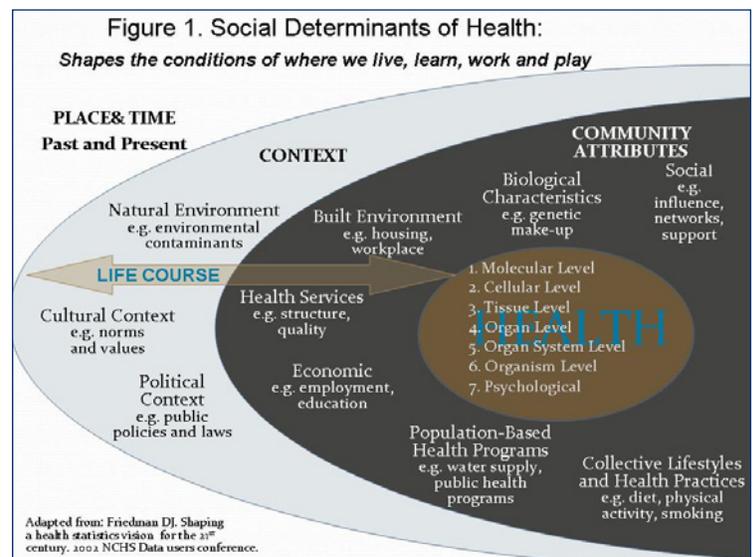


Figure 1 illustrates how social conditions influence the health of individuals. Research in this area has examined a wide range of social determinants of health – from community attributes to a more macro-level political context. The social determinants of health examined in this article include income inequality, racism and discrimination, housing quality, and food security. The main goal is to consider how these factors may be affecting our health and how to measure these effects in ways that build toward policy relevance.

Figure 2 demonstrates the framework of life course effects.<sup>6</sup> Social mobility questions the changes that may occur over a life span (e.g., the impact of starting at a low social position and moving to high position or vice versa). The sensitive periods framework asks if there is a time, especially during childhood, when economic circumstances are of particular

## INTRODUCTION

The social determinants of health literature has developed in significant ways over the past 30 years. It arguably gained prominence with the publication of the United Kingdom’s *Black Report*, which emphasized the large inequities in morbidity and mortality that exist between lower and upper classes – inequities that persisted despite universal access to health care services under the

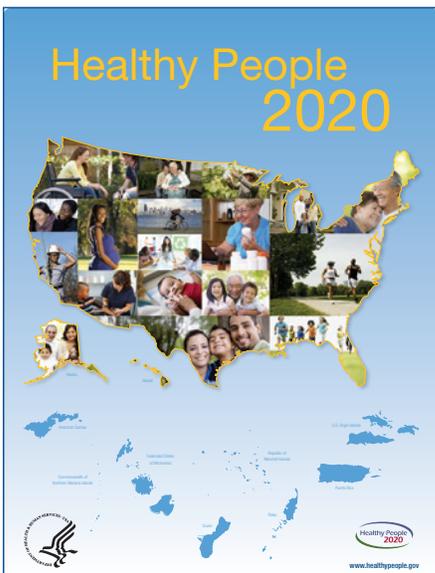
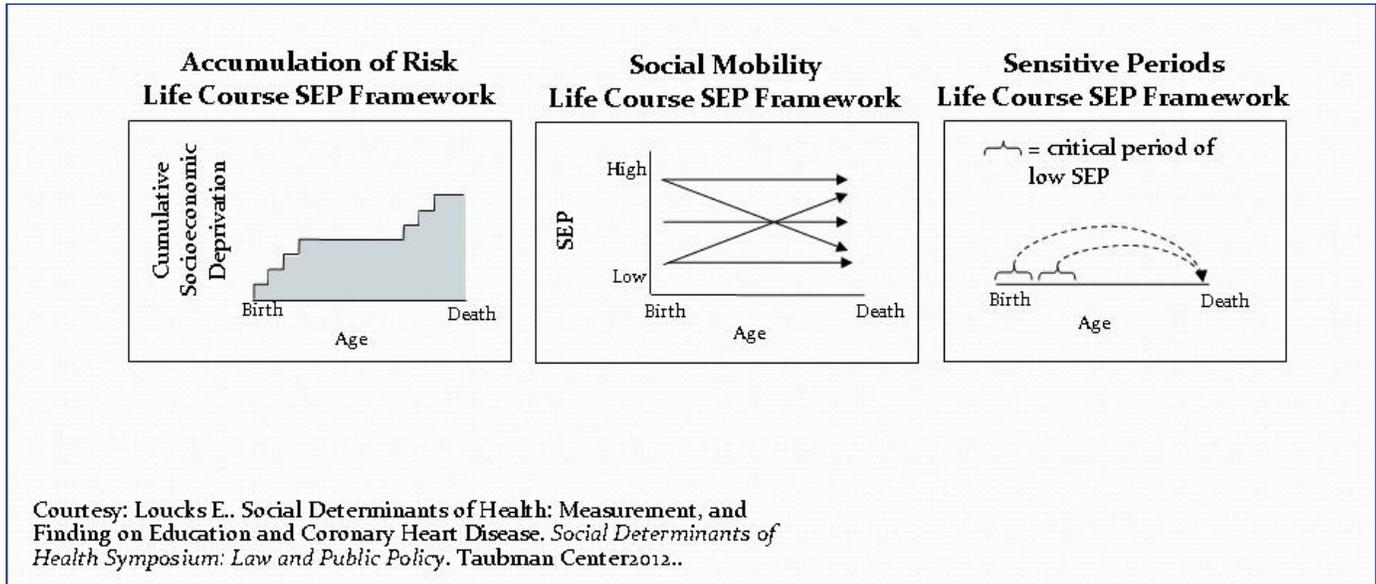


Figure 2. Life course socioeconomic position



importance in the development of the health and wellbeing of an individual. Accumulation of risk considers the build-up of effects over time. The purpose is to develop a conceptual framework with which we can predict health outcomes more accurately and to determine the validity of specific mechanisms as they influence a particular pathway.

On a global level, the World Health Organization's recent Commission on the Social Determinants of Health (CSDH) brought unprecedented attention to social conditions as fundamental causes of disease.<sup>7</sup> The CSDH sought to synthesize the now-global literature on the social determinants of health, ultimately concluding that "reducing health inequalities is...an ethical imperative. Social injustice is killing people on a grand scale."<sup>8</sup> Its focus was primarily on between-country inequities (describing the 40-year gap that exists between the worst-off and best-off nations as four decades that are 'denied' to the poor), but the CSDH also examined within-country inequities – pointing to the need to improve the distribution of power, money, and resources.<sup>8</sup>

### Income-Based Inequalities

Inequities in health running across the socioeconomic spectrum are perhaps the most consistent empirical finding in the social determinants of health literature. These inequities run as a gradient, from the very bottom of the socioeconomic hierarchy to the top; they do not reflect threshold effects that differentiate the poor from the non-poor.<sup>9</sup> The steepness of the social gradient varies from place to place and condition to condition, but its presence is widely accepted by health inequity researchers.

Building on empirical work on the social gradient, social determinants of health researchers have gone on to examine a range of other drivers of unnecessary morbidity and preventable mortality. One of the most important extensions of

this work has been Richard Wilkinson's income inequality model, which argues our health is influenced not just by our own income, but also by how income is distributed in the place in which we live.<sup>10,11</sup> Some of the most striking results have been published using data from the United States; Ross et al. observed that a 1 percent increase in the proportion of income earned by the poorest half of the population can be expected to reduce working-age, all-cause mortality in U.S./Canadian cities by 21 deaths per 100,000 every year.<sup>12</sup>

There is, however, considerable debate over the Wilkinson hypothesis, and researchers continue to grapple with a range of methodological questions of how to test the hypothesis with empirical data.<sup>13</sup> More than 200 statistical studies have examined the relationship between income inequality and population health, and approximately 90% of these have found at least some support for the hypothesized relationship. However, once control variables are taken into account, this figure drops to approximately 40%.<sup>14</sup> That is, only a minority of studies concludes with full support for the hypothesis, and others give mixed results, with the hypothesis being supported only under some conditions. It is here where the statistical issues pertaining to testing the hypothesis become quite complex and contested, with little agreement in the literature surrounding what kind of variables should be included in statistical models as control variables used to isolate the effect of inequality itself (and, in turn, whether the statistical practice of controlling for the effects of independent variables gives us an evidence base from which to establish causality). There is also no consensus on the geographical level at which the hypothesis should be tested, with some studies being carried out with national data, and other studies being carried out at state / provincial, city, and municipal levels.<sup>15</sup>

Despite the ongoing debates over the Wilkinson

hypothesis, it has strengthened the social determinants of health literature by emphasizing the need for a multilevel perspective, one that acknowledges that while health is experienced by individuals, it is ultimately affected by both individual and contextual factors. With this perspective we might consider income inequality as a proxy for capturing of a wide variety of inequalities, the social policies that tolerate them, and the unequal distribution of health protective resources. For example, we can think of the substantial differences in experience of poverty by race through discrimination and segregation. New research examining the health effects of racism / discrimination, housing, and food security, detailed below, illustrate this need for a multilevel perspective.

### Racism and Discrimination

This scholarship extends the existing literature on race/ethnic health disparities, moving from descriptive empirical studies documenting population-based patterns toward analysis that explicitly measures exposure to discrimination. In effect, this area of work begins with acknowledging the fundamental patterns of health inequities that exist today in the United States: infant mortality (per 1,000 live births) is 14.0 for African-Americans and 5.7 for non-Hispanic whites;<sup>16</sup> age-adjusted mortality from breast cancer (per 100,000 women) is 35.5 for African-Americans and 25.8 for non-Hispanic whites;<sup>17</sup> and most other indicators follow similar patterns.<sup>18</sup> The latest work in this area goes beyond description, however, by theorizing about and testing the fundamental role of racism and discrimination as drivers of these patterns.

In recent years, several measurement approaches have been developed, including the Experience of Discrimination (EOD) scale<sup>19</sup> and the Everyday Discrimination Scale (EDS).<sup>20,21</sup> These scales can be incorporated into household surveys; the EOD, for example, asks respondents if they have felt discriminated against in 9 different domains (at school or work; getting a job, housing, medical care, service at a store or restaurant, credit, bank loans or a mortgage; on the street or in a public setting, or from police or in the courts). Likewise, the EDS includes items seeking to measure 'day-to-day unfair treatment' in specific life domains. These scales have been associated with a range of health outcomes in community studies, including hypertension, self-rated health, and psychological distress.<sup>22</sup> Theoretical and clinical work has investigated the pathways through which racism and discrimination affects bodily systems, with many studies pointing toward chronic activation of stress pathways.<sup>23</sup>

Both the EOD and the EDS measures are entirely self-report in nature, raising a very real concern over validity across the socioeconomic spectrum. As Nancy Krieger observes, "people most affected by discrimination may be least able or willing to say so, even as such experiences may nevertheless affect their health."<sup>21</sup> Empirical studies have shown a strong association between self-reported discrimination and health among affluent respondents, a relationship that some

studies suggest breaks down among the poor.<sup>24</sup>

There are real concerns, therefore, that existing measures may underestimate the real effects of racism and discrimination as social determinants of health. Along with the problems of self-report data, research in this area has relied too much on individual-level measurement, with less emphasis placed on community/structural dimensions of racism and discrimination.<sup>22,25</sup>

Researchers are beginning to explore how the experience of discrimination may affect foreign-born people, tracking exposure to discrimination over time in the United States. Such work offers the possibility of integration with the 'healthy immigrant' literature, enabling a more holistic perspective on the health transitions of immigrants.<sup>26</sup> Comparative work is also possible. Researchers in other countries, including New Zealand,<sup>27</sup> the United Kingdom,<sup>28</sup> and Canada<sup>29</sup> have investigated the pathogenic effects of discrimination, though little cross-national work has been done to date.

Critical examination of the frame underpinning these studies is also warranted. As Yin Paradies notes, "the study of racism in health research is concerned, at least at present, with how racism may influence health rather than why racism occurs."<sup>30</sup> Consideration of the causes and not just the effects of racism and discrimination further strengthen the argument for a truly inter-disciplinary and cross-sector approach to health disparities research – linking biology and health sciences with political economy, history, and the social sciences.

### Housing Security

Housing quality is widely recognized as a critical determinant of health.<sup>2</sup> It has a significant influence on child health and other outcomes across the life course.<sup>31</sup> Some of these influences include exposure to physical and biological hazards, affordability, neighborhood quality and insecurity. Often not considered is how the high cost of energy can lead to housing insecurity. If heating bills are not paid a landlord may have the right to evict a tenant for not keeping the unit habitable.<sup>32</sup>

Neighborhood quality and conditions matter to health beyond the individual level. Neighborhood segregation and housing conditions vary by race and ethnicity even after accounting for income differences. Public health researchers and advocates must recognize linkages between household access and public policy in creating unhealthy, unstable conditions. Housing policy can be a public health intervention if health is an explicit objective integrated into the design, operation, and evaluation of housing assistance programs.

### Food Security

Food security, broadly defined by the U.S. Dept. of Agriculture (USDA) as the ability for all people to have enough food to lead active and healthy lives, is essentially a problem of sufficient access to quality food.<sup>33</sup> Although an increase in available calories and energy intake is often assumed to be

an indicator of food security, those calories are not always nutritious.<sup>34</sup> The high cost and availability of food leaves low-income households vulnerable to diet-related health problems as consumption of cheaper foods – usually high in fat, sugar, and salt and low in micronutrient – increases.<sup>35</sup> A less immediate cause of food insecurity is policy that can influence household resources creating unforeseen and adverse impacts. For example, policies that influence the cost of heating fuel paid by households can lead to seasonal coping strategies and temporary problems with food access.<sup>36</sup>

Methods for assessing food security recognize the challenges of measuring a complex, multidimensional phenomenon, which progresses through a continuum of successive stages. Each stage, from low- to high-food insecurity, consists of characteristic conditions, experiences, and behavioral responses. The strategy taken by the USDA and other researchers is to use a variety of indicators to capture the various combinations of conditions, experiences, and behaviors.<sup>37</sup> The Food Security Supplement is a validated approach that relies on a set of 18 core indicators.<sup>38, 39</sup> However, a strong argument can be made for approaches that capture the broader significance of food access, dietary quality, and explore the complex pathways between food security and health. This approach, often aided by qualitative inquiry, can demonstrate how food insecure households cope with variations in food access shaped by their complex and changing environment.<sup>40, 41</sup>

## CONCLUSION

Future work on identifying and measuring social determinants of health requires collaboration between researchers and policy makers for the purposes of generating policy-ready research. The seminar series on Social Determinants of Health, Law and Policy at Brown University is an example of how these dialogues can be framed, identifying key researchers, and the ways in which these interactions can offer fertile ground for interdisciplinary perspectives. This article has offered theoretical and methodological considerations for several key social determinants of health – income inequality, racism and discrimination, housing insecurity, and food security. The challenge ahead for researchers, advocates, and policy makers is to assess how these determinants affect the health status of particular populations, with the ultimate goal of informing all types of policy, not only explicit health policies, about the potential to improve health outcomes.

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