

Population Health
**Needed Interventions to Reduce
Racial/Ethnic Disparities in Health**

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Abstract Large racial/ethnic and socioeconomic status (SES) differences in health persist in the United States. Eliminating these health disparities is a public health challenge of our time. This article addresses what is needed for social and behavioral interventions to be successful. We draw on important insights for reducing social inequalities in health that David Mechanic articulated more than a decade ago in his article “Disadvantage, Inequality, and Social Policy.” We begin by outlining the challenge that interventions that have the potential to improve health at the population level can widen social inequalities in health. Next, given that there are racial differences in SES at every level of SES, we review research on race/ethnicity-related aspects of social experience that can contribute to racial inequalities in SES and health. We then explore what is needed for social and behavioral interventions to be successful in addressing disparities and consider the significance of race/ethnicity in designing and developing good policies to address this added dimension of inequality. We conclude that there is a pressing need to develop a scientific research agenda to identify how to build and sustain the political will needed to create policy to eliminate racial/ethnic health disparities.

Keywords health disparities, interventions, race

Introduction

There are large racial variations in health in the United States. Acknowledging that the exclusive use of one measure of health inequity is value laden and that the choice of a measure of inequity can lead to different interpretations of the same data (Harper et al. 2010), table 1 presents both the absolute (the difference between two groups) and the relative (dividing the rate of one group by that of another) racial and socioeconomic status

Table 1 Death Rates from All Causes, Age-Standardized, for Non-Hispanic Blacks and Whites, Aged 25–64, 2001

Education	Blacks	Whites	Black/White Ratio	Black-White Difference
		Men		
All	791.9	415.6	1.91	376.3
< 12 years	1,211.0	914.6	1.32	296.4
12 years	1,042.3	595.1	1.75	447.2
13–15 years	455.3	291.8	1.56	163.5
16+ years	386.5	216.2	1.79	170.3
Low-high difference	825	698		
Low/high ratio	3.13	4.23		
		Women		
All	470.9	247.3	1.9	223.6
< 12 years	577.6	539.5	1.07	38.1
12 years	634.8	321.6	1.97	313.2
13–15 years	318.2	175.5	1.81	142.7
16+ years	318.7	147.4	2.16	171.3
Low-high difference	259	392.1		
Low/high ratio	1.81	3.66		

Source: Jemal et al. 2008

Notes: Rates per 100,000, United States. Low-high difference = lowest education category minus highest category; low/high ratio = lowest education category divided by highest category.

(SES) differences in health, for all-cause mortality for non-Hispanic blacks and whites (Jemal et al. 2008). For both men and women, the absolute racial differences in death rates are substantial, with rates for blacks almost twice as high as those for whites. Other data reveal that racial groups characterized by legacies of social exclusion, economic disadvantage, and political or geographic marginalization have worse health than the dominant racial groups in virtually every society (Williams 2012). Although immigrants of all racial/ethnic groups tend to have better health than their native-born peers, marked declines are evident in the health of socioeconomically disadvantaged immigrants over time (Williams 2012). For example, US-born persons of Mexican ancestry have rates of heart disease and cancer that are almost twice as high as those of Mexican immigrants (Dominguez et al. 2015).

These racial/ethnic differences in health are not new. In the late nineteenth century, W. E. B. DuBois ([1899] 1967) documented large racial disparities in health in Philadelphia. He indicated that these differences in health could be explained by the poor living and working conditions of

African Americans. Consistent with DuBois's analysis, a large body of scientific evidence confirms that SES, whether measured by income, education, occupational status, or wealth, is arguably the strongest predictor of variations in health (Commission on Social Determinants of Health 2008). Table 1 also shows variations in mortality using education as a marker of SES. The education gaps in mortality for men and women of each racial group are generally larger, in absolute and relative terms, than the racial gaps. However, for men and women, at every level of education a racial gap persists. Notably, for both men and women, the relative but not the absolute racial gap is largest at the highest level of education. Thus these national data are not entirely consistent with the hypothesis of "diminishing returns," which argues that blacks receive smaller health benefits from increasing SES compared to whites (Farmer and Ferraro 2005).

Social inequity in health is one of the greatest public health challenges of our time, and there is interest in eliminating racial/ethnic disparities in health. Addressing disparities in health is one of the priorities of the National Institutes of Health, and the Healthy People 2010 initiative made eliminating health disparities one of its objectives. There is a growing consensus that since the key drivers of good health lie in the social determinants of health, we need to look "upstream" and intervene on the conditions of life in our homes, neighborhoods, schools, and workplaces (Marmot et al. 2008; Braveman, Egerter, and Mockenhaupt 2011). Healthy People 2020 embraced these goals, calling for improving the health of all, eliminating disparities, and creating healthy social and physical environments (US Department of Health and Human Services 2010). Accordingly, this article outlines the steps that are needed to develop a toolbox of creative, rigorous, theory-informed interventions that would address the social determinants of health in order to improve the health of vulnerable populations and reduce racial gaps in health.

We draw heavily on, and extend in some cases, important insights for reducing social inequalities in health that David Mechanic (2002) articulated more than a decade ago. In an article titled "Disadvantage, Inequality, and Social Policy," he raised a number of critical issues that had not received wide currency in the literature on racial disparities in health. Limited progress has been made in reducing racial disparities since then (Thomas et al. 2011), and Mechanic's article is still timely today. In this article, we address what is needed for social and behavioral interventions to be successful. We begin by outlining the challenge that interventions that have the potential to improve health at the population level can widen social inequalities in health. Next we review research on race-related aspects of

social experience that can contribute to racial inequalities in SES and health. We then explore what is needed for social and behavioral interventions to be successful in addressing disparities, and we conclude that there is a pressing need to develop a scientific research agenda to identify how to build and sustain the political will needed to create policy to eliminate racial health disparities.

Understanding the Problem and Evaluating Action

A 2013 report from the Institute of Medicine documented that for nine key indicators of health status, Americans had worse health than their counterparts in sixteen high-income countries (Woolf and Aron 2013). Moreover, the report indicated that the poorer health of Americans compared to people in other rich nations was evident at all ages from birth to age seventy-five and that even the most advantaged Americans, those with high SES, healthy behaviors, and health insurance, had worse health than their peers in other affluent democracies. Thus health interventions in the United States are needed to improve the health of all, even while they seek to reduce the large gaps in health by race/ethnicity and SES.

Mechanic (2002) indicates that the development of sound policy requires a clear understanding of the dynamics that undergird social inequality because that will inform how, when, and for whom to implement population-level interventions. We discuss three dimensions of social inequalities that are important for health policy initiatives to attend to: the tension between reducing disparities and improving population health, the reality that SES inequalities in health reflect a gradient and not a threshold, and the need to address social inequalities linked to race/ethnicity that are not captured by SES.

Improving Health versus Reducing Disparities

One of Mechanic's (2002) important insights was that improving the health of the US population would not inevitably lead to a reduction in social inequalities. He argued that enhancing overall population health and reducing disparities are objectives that can conflict with each other and that the strategies likely to have the greatest impact in improving population health are likely to widen SES-related disparities, including racial/ethnic disparities. Trend data on cigarette smoking and adolescent obesity illustrate this challenge. Smoking prevalence among adults in the United States

declined from 42 percent in 1965 to 19 percent in 2010 (National Center for Health Statistics 2013). At the same time, the decline in smoking rates over time was much greater among high than low SES persons such that the gaps in cigarette smoking by education were markedly larger in 2010 than in the 1960s (National Center for Health Statistics 2013). Similarly, the analyses of national data on obesity among twelve-to-seventeen-year-olds, between 1990 and 2010, document the overall stabilization of adolescent obesity in recent years. However, subgroup analyses reveal that adolescent obesity is increasing for children of parents with a high school education or less but declining for children of college-educated parents (Frederick, Snellman, and Putnam 2014). Other evidence suggests that many universal interventions, across a range of societal sectors, provide greater benefit to the advantaged groups in society because higher-status groups typically have greater access to and higher levels of utilization of the intervention and often receive differential benefit from the intervention (Ceci and Papierno 2005). The Acheson Report, an influential blueprint for reducing social inequalities in health in the United Kingdom, highlighted the importance of enabling more disadvantaged groups to improve more rapidly than the rest of the population by emphasizing that policies should explicitly be formulated to provide greater benefit to the less well-off (Acheson 1998).

A recent review of public health interventions found that mass media campaigns and workplace smoking bans tend to increase inequality between SES groups, while initiatives such as providing material resources, increasing tobacco prices, and improving working conditions in occupational contexts tend to reduce health inequalities (Lorenc et al. 2013). These findings are consistent with the more general principle that “downstream” interventions that focus on individual behavior change or individual factors are more likely to increase inequalities, while “upstream” social or policy interventions that focus on structural change are more likely to be successful in reducing inequalities (Lorenc et al. 2013).

Thinking about the Gradient

Another insight from Mechanic (2002) is that effective interventions to address social inequalities need to consider and address the gradient in health across SES levels. The gradient refers to the pattern that health improves in a stepwise, graded manner with increases in social status (Marmot et al. 2008). However, the effect of SES is not uniform throughout the gradient, with the largest effects evident at the lower levels of SES (Rehkopf et al. 2008). An education gradient is evident in table 1 for both

ances. Often when attempting to reduce health disparities, the same intervention is implemented throughout the population. However, Mechanic argued that given the existence of the gradient and the nature of the gradient, the determinants of health inequalities at the higher levels of SES may differ from those at lower levels. Accordingly, researchers and policy makers need to be aware that reducing social inequalities in health may call for intervention strategies to be different at various levels of SES (Mechanic 2002; Graham 2004; Whitehead and Dahlgren 2007).

Disparities in Health and the Dynamics of Race

The data in table 1 remind us that race and ethnicity are social status categories that, although related to SES, also capture other dimensions of social equality. Racial/ethnic health disparities reflect racial/ethnic inequalities in SES and also the effects that race/ethnicity and racism have on perpetuating inequality above and beyond SES (Williams and Mohammed 2013a). Thus designing effective, theory-based interventions to reduce racial/ethnic health disparities requires that we understand racial/ethnic inequality as related to but distinct from SES inequality.

In 2013 Hispanics earned \$0.70 and blacks earned \$0.59 for every dollar of income that whites received (DeNavas-Walt and Proctor 2014). Racial differences in wealth are even more striking, with blacks having \$0.06 and Hispanics \$0.07 for every dollar of wealth that whites have (US Census Bureau 2013). However, part of the distinctiveness of race/ethnicity is the nonequivalence of these SES indicators across racial/ethnic groups. Compared to whites, blacks and Hispanics receive less income at the same education levels, have less wealth at equivalent income levels, and have less purchasing power due to the higher costs of goods and services in the residential environments where they are disproportionately located (Williams et al. 2010).

The burden of racism is another distinctive social exposure that shapes the health of racial/ethnic minorities. Scientific evidence indicates that discrimination is pervasive across institutional and interpersonal levels in contemporary societies (Pager and Shepherd 2008). Institutional racism and personal experiences of discrimination are added pathogenic factors that affect the health of minority group members in multiple ways (Pachter and Coll 2009; Priest et al. 2013; Williams and Mohammed 2009; Lewis, Cogburn, and Williams 2015): residential segregation has created pathogenic neighborhood and housing conditions and truncates access to social mobility by reducing educational and employment opportunities;

discrimination can lead to reduced access to desirable goods and services; internalized racism (acceptance of society's negative characterization) can adversely affect health and socioeconomic mobility; racism can trigger increased exposure to traditional stressors (e.g., unemployment and financial strain); and experiences of discrimination are an important psychosocial stressor that adversely affects physical and mental health. Institutional and cultural racism can also harm health through stigma, stereotypes, and prejudice, which, in turn, contribute to stunted socioeconomic mobility and reduced access to multiple societal resources and opportunities that are desirable for good health (Williams and Mohammed 2013a).

Institutional discrimination and socioeconomic disadvantages lead to the overrepresentation of minorities in toxic residential and occupational environments that leads to exposure to a broad range of psychosocial stressors including crime, violence, material deprivation, loss of loved ones, recurrent financial strain, relationship conflicts, unemployment, and underemployment. A study of Chicago adults found that African Americans and US-born Latinos experienced not only higher levels of multiple psychosocial stressors but also greater clustering of stressors than whites did (Sterthal, Slopen, and Williams 2011). These psychosocial stressors, which include discrimination, helped to account for the residual association between race/ethnicity and health after controls for education and income.

How to Effectively Reduce Disparities

Mechanic's (2002) insightful policy analysis offers multiple guidelines for reducing disparities. He indicated that effective interventions must address the underlying causal factors with both universal or population-based approaches and targeted interventions. We also consider the significance of race/ethnicity in designing and developing good policies to address this added dimension of inequality.

Fundamental Causes

Mechanic (2002) emphasized the importance of deploying interventions that address the fundamental causes of social inequalities in health. Stanley Lieberman (1985) distinguished basic or fundamental causes from surface or intermediate causes. The former are causal factors that generate an outcome, while the latter are factors that are related to the outcome, but

changes in these factors do not lead to change in the outcome. As long as the basic causal forces are operative, the modification of surface causes merely gives rise to new intervening mechanisms to maintain the same outcome (Lieberson 1985). Sociologists have argued that SES is a fundamental cause of health (Williams 1990; House et al. 1990). Bruce Link and colleagues (Link and Phelan 1995; Phelan, Link, and Tehranifar 2010; Rubin, Clouston, and Link 2014) have elaborated this approach and amassed considerable evidence in support of it. They show that people from advantaged groups have access to privilege, power, and resources that allow them to capitalize on new opportunities, knowledge, and technologies that can improve their health. They view SES as a fundamental cause of disparities because the relationship between SES and health has remained stable across historical periods. Improving living and working conditions and promoting healthy macro policies are strategies that get at some of the upstream determinants and address the fundamental causes (Whitehead 2007).

Efforts to reduce social inequalities should begin early in life. Mechanic (2002) noted the importance of enhancing formal education, and research documents that the foundations of health in adulthood are laid in childhood and that educational efforts can have a large impact if they start early (Williams and Mohammed 2013b). Intervening early can have positive cascading effects. The North Carolina Abecedarian Project is a randomized long-term study in which economically disadvantaged, mainly African American, infants were randomly assigned at birth to a high-quality early childhood program (Campbell et al. 2014). From birth to age five, the program offered a safe and nurturing environment, good nutrition, and pediatric care. By their mid-thirties, participants who had received the preschool intervention had lower levels of multiple risk factors (e.g., elevated blood pressure, metabolic syndrome, and excess weight) than the controls did.

Universal Interventions

Mechanic (2002) also indicated that one important strategy for improving health is to implement interventions that target the entire population. The whole population-based approach to reducing disparities rests on the principle that disadvantaged groups experience greater burdens of health risk factors. Thus they are likely to gain extra benefit if a risk factor is uniformly reduced across a given population (Rose 1992; Capewell and Graham 2010). Classic examples of universal interventions include car seat

belt laws, clean drinking water, and fortification of processed foods with folic acid. Such interventions rely on government agencies to leverage strong regulatory policies. For instance, national legislation in Finland to halve dietary salt in processed foods reduced risk factors for cardiovascular disease in the entire population and reduced the gap in risk between disadvantaged and advantaged groups (Karppanen and Mervaala 2006).

Targeted Interventions

Another approach is to target the health gaps with a goal of reducing the difference in health outcomes between the most advantaged and disadvantaged groups by improving the health of the poorest groups the fastest (Mechanic 2002; Ranganathan and Lagarde 2012). Targeted interventions direct efforts toward those in greatest need. Classic examples of these interventions include free flu vaccinations for young children and older adults and programs for early childhood development in low SES communities. Conditional cash transfer (CCT) programs are another example of targeted interventions. These are initiatives that provide cash payments to low-income families contingent on regular health care visits, school attendance, or participation in educational programs. A review of their implementation in lower- and middle-income countries, using experimental or quasi-experimental designs, found that the programs were successful in increasing preventive health services use and immunization rates, improving nutritional and health outcomes, and encouraging healthy behaviors (Mechanic 2002; Ranganathan and Lagarde 2012). In contrast, a CCT in New York City in which low-income residents of six of the city's highest-poverty neighborhoods were randomized to the intervention or to a control group produced mixed results (Osypuk et al. 2014). Families in the intervention group (who received about \$8,700 over the intervention's three-year period) experienced reduced fertility as well as improvements in nutrition, insurance coverage, and the receipt of preventive dental care compared to the controls. However, there were no effects on health outcomes, cigarette use, or the use of preventive medical care. There is much that we need to learn about when cash incentives matter and which health-related indicators are more or less likely to be affected in high-income contexts. The Earned Income Tax Credit (EITC) is a large, targeted supplemental income program in the United States. Studies of state EITC show positive effects on birth weight and maternal smoking (Hoynes, Miller, and Simon 2012; Strully, Rehkopf, and Xuan 2010). Future research needs to identify the level of financial assistance necessary to trigger positive health

effects for low-income populations and the conditions under which these effects are likely to occur.

Targeted interventions should be implemented with care. Programs that focus on the most disadvantaged run the risk of lapsing into health paternalism, where policy makers deploy interventions that disempower and remove choice and agency from individuals (Phelan, Link, and Tehranifar 2010). Interventions targeted to the disadvantaged can also face the challenge of securing public policy support and can be viewed as undermining solidarity (Benach et al. 2013). However, targeted interventions show promise for reducing disparities when they focus on structural changes (e.g., smoke-free public places or bans on trans fats) instead of initiatives for high-risk individuals like smoking cessation programs or advice regarding good nutrition (Capewell and Graham 2010). Importantly, targeted and universal strategies are not mutually exclusive—they can be complementary and enhance each other (Benach et al. 2013). A related strategy is proportionate universalism—a universal policy in which the intensity of the intervention is proportionate to the level of disadvantage, so that the benefit increases along the gradient (Benach et al. 2013).

Tackling Racial Inequalities in Health

Addressing the added burden of race/ethnicity illustrates the need for opportunities and the challenges of combining both universal and targeted opportunities. Some evidence suggests that disparities can be reduced by interventions that are focused on the entire population, when the intervention has a greater impact on the disadvantaged. Racial disparities in infant mortality illustrate how a universal intervention could narrow the gap with strategic targeting of the underlying mechanism that is more prevalent among the disadvantaged. Recognizing that women with unwanted pregnancies were at increased risk for poor pregnancy outcomes, Carol J. Rowland Hogue and Cynthia Vasquez (2002) showed that an intervention (access to contraceptives) to reduce the number of unwanted pregnancies among adult women dramatically and differentially decreased very low birth weight infants and infant deaths among African American women. Tobacco taxes are another example of a universal intervention that has had a larger impact on discouraging smoking among blacks than among whites, probably because low-income individuals are more responsive to price increases than their higher SES peers are (Hopkins et al. 2001). The National Truth Campaign was an antismoking global intervention that also had a greater effect on blacks and Hispanics than on whites. The campaign

had a distinctive appeal to adolescents with its focus on unmasking the deceptive practices and exploitative marketing strategies of the tobacco industry (Farrelly et al. 2009). Some messages appeared to have strongly resonated with African American youth (Cowell et al. 2009).

Many of the risk factors that drive poor health are clustered in individuals, populations, and places. The combination of geographic isolation (e.g., segregated residential areas and American Indian reservations) and concentrated poverty has made this clustering a prominent feature of the risk profile of many minority racial/ethnic populations. For example, urban violence is often concentrated in a few “hot spots.” Research in Boston has documented that 3 percent of street segments and intersections accounted for more than 50 percent of all gun violence incidents (Braga, Papachristos, and Hureau 2010). A study in Seattle found a similar concentration of the majority of crime in a few street segments (Weisburd et al. 2004). The website Million Dollar Blocks showcases city blocks in selected US cities where states are spending over a million dollars a year to incarcerate residents (Gonnerman 2004). This clustering of risks suggests that place-based solutions should be a priority in addressing many racial disparities in health. The Child Opportunity Index, a population-level surveillance system of neighborhood environments for the 100-largest metropolitan areas in the United States, maps opportunities for black and Latino children and provides baseline data for the development of place-based interventions (Acevedo-Garcia et al. 2014).

Interventions also need to address racism as a fundamental cause of disparities in health (Williams 1997). The civil rights and related policies of the 1960s are examples of race-targeted policies that improved health and reduced disparities in health. These policies narrowed the black-white economic gap and resulted in larger absolute and relative gains in life expectancy and declines in mortality for black males and females compared to whites between the mid- to late 1960s and the late 1970s (Kaplan, Ranjit, and Burgard 2008; Cooper et al. 1981). In addition, reductions in black infant mortality and improved health for black women and their children born during this period have also been documented (Almond and Chay 2006; Almond, Chay, and Greenstone 2006). Other evidence suggests that improving neighborhood and housing conditions can also improve the health of minorities (Williams and Mohammed 2013b).

Intervening on race-related aspects of social experience at the individual level can also enhance SES and improve health. A values affirmation intervention is a brief structured exercise in which people are asked to write

about a value that they personally regard as very important (Cohen and Sherman 2014). This simple task is designed to affect some of the negative effects of cultural racism and can induce a change in mind-set and enhance an individual's sense of competence, integrity, and self-worth. A recent review of randomized field experiments shows that these interventions can reduce the negative effects of racial anxiety and racial stressors, improve academic performance, reduce the racial achievement gap, improve patient-physician communication, and improve health and health behaviors (Cohen and Sherman 2014). These interventions had no effects on whites, highlighting their contribution in addressing stressors associated with racism.

Barbara Reskin (2012) indicates that racism constitutes an organized and dynamic system in which there are multiple components or subsystems that work together, often mutually influencing and reinforcing one another. Accordingly, disparities in one societal domain are not independent of those in other domains. Given these interlocking subsystems and the interdependent and reinforcing nature of racism across domains, Reskin (2012) suggests that the key to successfully eliminating racial disparities is an exogenous force that dismantles racism in every subsystem or an intervention on a key leverage point in the system of racism, such as residential segregation.

The systems perspective for viewing racism may have broader applicability to SES inequality. There is a growing recognition that characteristics of individuals, their social relationships, and the multiple environments that they occupy all contribute, separately and in combination, to the risk factors and resources that determine the patterning of health (Galea, Hall, and Kaplan 2009). Accordingly, there is a need for complex conceptual and analytic models (e.g., complex systems computational modeling) that will capture the interdependent, dynamic, and reciprocal nature of the individual and contextual factors that shape health across multiple levels of analysis and identify key levers of change that should be the targets of action.

Positive Outliers

Mechanic's (2002) suggestion of paying attention to outliers of success and mainstreaming them is a useful strategy for identifying effective interventions. The positive outlier approach identifies existing solutions that are already working in real-world community contexts and that can be shared with other community members (Sharifi et al. 2013). It involves

identifying individuals within high-risk contexts who deviate from the rest of the community by achieving success on some particular outcome. Then qualitative, inductive methods are used to identify the factors responsible for that success; these are tested in larger, representative samples, and relevant community stakeholders work in the dissemination of the identified solution (Sharifi et al. 2013). The positive outlier approach has been used to address multiple complex behaviors. For example, the use of peer coaches (e.g., *promotoras*, or lay health advisers) is a best practice that appears to work in multiple resource-poor contexts (Sharifi et al. 2013).

Enhancing Individual and Community Capacity

Mechanic (2002) also emphasized the role of empowerment and building community capacity and strengths. This issue is typically given inadequate attention in interventions addressing social inequality. The relatively low uptake of an intervention that targeted low-income black and white parents with a child in Head Start and offered them the opportunity to start a fund for their child's college education illustrates the challenge (Shanks, Nicoll, and Johnson 2014). To establish an account, families were asked to make an initial deposit of \$25. This small deposit would enable the family to receive \$1,000 in the child's college account, and additional deposits into the account would be matched dollar for dollar up to \$1,200. To increase participation, the initial requirement of the \$25 deposit was waived. Surprisingly, only 62 percent of black parents and 67 percent of white parents signed up for the program, and only 24 percent of black enrollees and 45 percent of white enrollees made additional deposits (Shanks, Nicoll, and Johnson 2014). An evaluation of participation in this quasi experiment found that inadequate attention was given to barriers such as financial literacy, prior exposure to and negative experiences with financial institutions, and the severity of financial challenges in the lives of the targeted families. Margaret Whitehead (2007) reminds us that programs strengthening individuals rarely work well in isolation, especially for disadvantaged groups. In contrast, individual interventions that are combined with efforts to create enabling environments and address structural barriers tend to be more effective.

Mental health status is often an unaddressed barrier in interventions. For example, women on welfare have elevated rates of depression compared to the general population (Osypuk et al. 2014). Evaluation of the impact of employment assistance in state-level welfare-to-work programs found that

although there was no overall effect of assistance in reducing depressive symptoms, there was an interaction with depression on earnings, with the positive effects of employment assistance on earnings larger for study participants who reported low levels of depressive symptoms (Osypuk et al. 2014). Thus improving mental health by reducing depressive symptoms may be a critical, capacity-enhancing, foundational component for economic enhancement programs for low-income populations.

Using the Best Available Evidence

An important challenge in identifying potential solutions to address social inequalities is identifying what constitutes evidence of positive impact and deciding how much evidence is sufficient. In the face of less-than-certain knowledge to guide decision making, policy makers should not rely only on evidence from randomized controlled trials (RCTs) but should use the best currently available scientific knowledge to improve health and reduce disparities (Braveman et al. 2011). This requires a process of considering evidence from multiple sources and evaluating the quality of evidence using multiple criteria, with study design being only one of the many factors used in the appraisal of the strength of the evidence. Researchers and policy makers should also give increased attention to capitalizing on available opportunities to generate new knowledge that would inform policy interventions. Many programs and policies that could have health benefits have not been evaluated. Greater attention should be given to creating funding mechanisms and pools of financial resources that could be easily and quickly accessed to maximize opportunities, such as natural experiments that could increase our knowledge regarding what works to reduce disparities in health.

It is also necessary to close the large gap between results obtained in RCTs with their carefully selected participants and those found in real-world settings with general population groups (Glasgow, Lichtenstein, and Marcus 2003). Researchers need to pay greater attention to understanding intervention effects in varying social contexts for a range of population groups and to identify the moderating variables (e.g., characteristics of participants and settings) that predict variation in outcomes. While there are commonalities of social stigmatization and economic deprivation that affect multiple disadvantaged groups, every population has its own distinctive characteristics due to historical factors and a range of contextual factors. Thus strategies to design and test interventions to reduce social inequities in health should be tailored to specific population subgroups and

their local settings (Glasgow, Lichtenstein, and Marcus 2003). Pragmatic trials are an adaptation of RCTs that are increasingly used to maximize an intervention's effectiveness in real-world contexts and give primacy to evaluating external validity (Patsopoulos 2011).

Building a Science to Illuminate How Best to Build Political Will

Evidence is only one component of what swings policy decisions. Political will and institutional capacity are also critically important (Hawe and Potvin 2009). Public opinion research over the past four decades in the United States has shown that levels of support for government interventions to help blacks have always been low and that they are declining over time (Bobo et al. 2012). Moreover, Americans show more support for income- or class-targeted policies than for racial policies. Mechanisms underlying knee-jerk negative reactions and opposition to race-based policies have been elucidated. White Americans prefer color-blind ideologies and perceive color blindness to be fairer than group-based ideologies (Plaut, Cheryan, and Stevens 2015; Purdie-Vaughns and Walton 2011). Thus race/ethnicity-targeted interventions may be perceived as fundamentally unfair because they depart from the notion that race does not matter. Moreover, unlike nonwhites, whites often view reductions in disparities as losses rather than gains (Eibach and Keegan 2006). In addition, endorsing race/ethnicity-targeted interventions makes some whites experience collective guilt (Brown et al. 2008). Collective guilt is remorse shared by a group over an act or actions that are seen as shameful.

Although there have been dramatic declines in traditional measures of racial prejudice such that there is widespread endorsement of the principles of equality, commitment to these norms is superficial and high levels of negative stereotyping of racial minorities persist in the United States (Bobo et al. 2012). Research indicates that emotions have a large impact on decision making in general and on race-related attitudes and policy in particular. A study of US court of appeals judges found that judges with daughters were more likely than judges with no daughters to vote in a liberal (feminist) manner in gender-related cases, indicating that personal experiences (and sympathies) affect how judges make decisions (Glynn and Sen 2015). Thomas F. Pettigrew and Roel W. Meertens (1995) have identified the absence of positive emotion as an important part of subtle contemporary prejudice that shapes social policies. In a study in Germany,

the Netherlands, France, and the United Kingdom, they found that the absence of positive emotions (i.e., lack of feelings of sympathy and admiration toward an out-group) was a strong predictor of opposition to policies regarding immigrant out-groups (Pettigrew and Meertens 1995). Similarly, a US study found that not feeling sympathy and admiration for blacks was the strongest predictor of whites' opposition to affirmative action in employment and to an active role of government in reducing racial inequalities (Williams et al. 1999). A recent meta-analysis found that emotional prejudice was twice as strongly predictive of discriminatory behavior as racial beliefs and stereotypes (Talaska, Fiske, and Chaiken 2008).

An important priority is to increase awareness of social inequalities in health. Most Americans are unaware that racial disparities in health exist. A 2011 national survey found that only 46 percent of American adults were aware of health disparities between blacks and whites, with liberals three times as likely as conservatives to be aware of racial and SES gaps in health (Booske, Robert, and Rohan 2011). In addition, the study also found that most Americans viewed poor choices and poor health behaviors as more important drivers of health than the social conditions that initiate and sustain them.

A second priority is to identify how to effectively frame the subject of racial inequality and racism to build the political climate that would facilitate social change. To do so will require systematic efforts to effectively communicate about the role of the social determinants of health including racism in creating and maintaining them. The framing of information about disparities affects audience emotional reaction and behavior even among minority group members. For example, framing cancer disparities by highlighting that progress was being made led to more positive emotional reactions and greater interest in participating in preventive behavior than when the framing emphasized that disparities were large and persistent (Nicholson et al. 2008). Research also indicates that journalists have a preference for a disparities frame but can be trained to view a progress frame more positively if they are provided with data regarding its benefits (Hinnant et al. 2011). Narrative approaches are critical to efforts to build awareness and support, but identifying narratives to effectively communicate the complex social determinants of health is a challenge (Lundell, Niederdeppe, and Clarke 2012). Research is needed to identify the specific types of narratives that can lead to positive emotional responses and support. Research has shown that small changes in framing, language,

tone, or details in telling a particular story can make a big difference in emotional engagement and the activation of areas of the brain associated with emotion (Greene et al. 2001). Recent research has also documented that positive media portrayals of gay and lesbian characters on TV have been important in reducing prejudice toward gays and providing support for policy changes (Mutz and Goldman 2010).

The FrameWorks Institute (Davey 2009) has completed multimethod research consisting of content analysis of the media, qualitative interviews, focus groups, and probability surveys to identify how Americans think about race/ethnicity and what might be the most effective communication strategies to build support for addressing disparities. It found the following: the most common frames (conceptual ideas) triggered by the topic of race and racial disparities include a belief that US society has made significant progress on race in recent decades; these changes have led to the elimination of discrimination and racism, except at the individual level; this remaining personal racism is as common in whites as in minorities; discrimination is not a determinant of success; and minorities do poorly because they lack the core American values of personal responsibility, character, and hard work. Moreover, many framing strategies, widely used by advocates of racial/ethnic equality, such as presenting disparities as early warning indicators (the canary in the coal mine), framing diversity as a strength, or claiming that disparities reflect white privilege or are structurally driven, are all ineffective in building support for racial equality because the dominant racial framing blocks consideration of this alternative viewpoint (Davey 2009).

In contrast, framings that focus less on racial disparities and emphasize widely shared American values (e.g., enhancing opportunity for all and ingenuity) and that link communities in a sense of shared fate are more likely to be successful in eliciting support for racial/ethnic equality. Accordingly, advocates for social equality can best build support for addressing racial/ethnic disparities by giving primacy to effective solutions and innovation, emphasizing opportunity for all, highlighting the interdependence of all communities, stressing prevention of community problems before they occur, and advocating fairness between places (not between individuals). The FrameWorks Institute's research on framing racial disparities (Davey 2009) highlights the need for greater research and policy attention to identifying the communication strategies that are most likely to be effective in enlisting the support of the public for policies to advance racial and ethnic equality.

Conclusion

Mechanic's "Disadvantage, Inequality, and Social Policy" (2002) raised important insights relevant for understanding inequality and health. Our review draws from and extends Mechanic's insights to articulate what is required to reduce or ameliorate racial and SES disparities in health. Policy makers should have a clear understanding of the tension between reducing disparities and improving population health. Policy makers should also recognize that traditional indicators of SES do not capture all the components of social inequality that are linked to race and ethnicity. An important challenge moving forward is to identify when global interventions can reduce racial/ethnic disparities and when race/ethnicity-specific interventions are indispensable.

An important implication of this review is that theory-tested interventions known to reduce disparities are only a small piece of what is needed to reduce disparities at the population level. There is a need to develop a robust science to inform building political will for needed changes. The research reviewed here indicates that building political will for race/ethnicity-targeted interventions may differ from that for global interventions. The science of attitude change must be integrated with sound health policies to understand how specific health initiatives can gain political currency and legitimacy. In conclusion, strategic investments in social and behavioral research are needed to strengthen the knowledge base for improving health and reducing disparities in health that are avoidable and unfair and building the political will to implement policy that will be effective in reducing social inequality.

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