

SOCIETY'S GRAND CHALLENGES

Insights from Psychological Science

HEALTH DISPARITIES

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As a society, we face many challenges, and we depend on science to help. Whether we seek to halt global climate change, cure devastating diseases, reduce crime, end poverty, diminish health disparities, or achieve vitality in old age, advances in modern science are expected to help.

The science of psychology contributes to deeper understanding of these and many other societal challenges. The American Psychological Association is devoting significant resources and energy to bringing the best of psychological science to the forefront. In partnership with other fields of science, solutions will be found.

This booklet is one in a series, examining the insights of psychological science into challenges facing society. Each booklet focuses on a key challenge, provides a sampling of what we currently know, and suggests promising avenues for future research. The published work of scientists is cited, so that readers can learn more on their own.

We indeed face many challenges, and together we can solve them!

Alan E. Kazdin
2008 President
American Psychological Association

HEALTH DISPARITIES



“It was the best of times, it was the worst of times...” With those opening words to *A Tale of Two Cities* Charles Dickens could easily have been describing the disparities in health among the citizens of the United States. The healthiest Americans live longer, fitter lives than anyone in the world, while the least healthy live only a little longer than people in some of the poorest countries. This deep divide in health quality is one of the reasons that, despite spending more per capita on health care than any other country, the United States ranks only 44th in life expectancy.

What causes such a steep curve in health status? There is no simple explanation or easy solution. But psychologists—working with colleagues in epidemiology, public health, medicine and sociology—have made progress. They know that wealth, education, gender, race, ethnicity and the neighborhood one lives in predict how healthy people will be during their lifetimes. And that stress from financial worries, feelings of powerlessness, and discrimination is heaped disproportionately on the most vulnerable.

As researchers continue to define the problem, they are beginning to understand how these factors interact to exert such a strong effect on the risk of premature birth, high blood pressure, diabetes, heart disease and other illnesses. They are using their findings to develop interventions that will allow everyone the same chance at a healthy life.



Some of the solutions will require national policy changes. And while some psychologists use their research to encourage policymakers to make those changes, others are working at a more local and individual level, creating interventions and programs that can reduce disparities in health care and health outcomes on a smaller scale—one person and one disease at a time. This booklet only begins to cover the large scope and complexity of the issue of health disparities, and it offers a few examples of how psychology is helping to define and solve the problem.



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BUFFERING PEOPLE FROM POVERTY

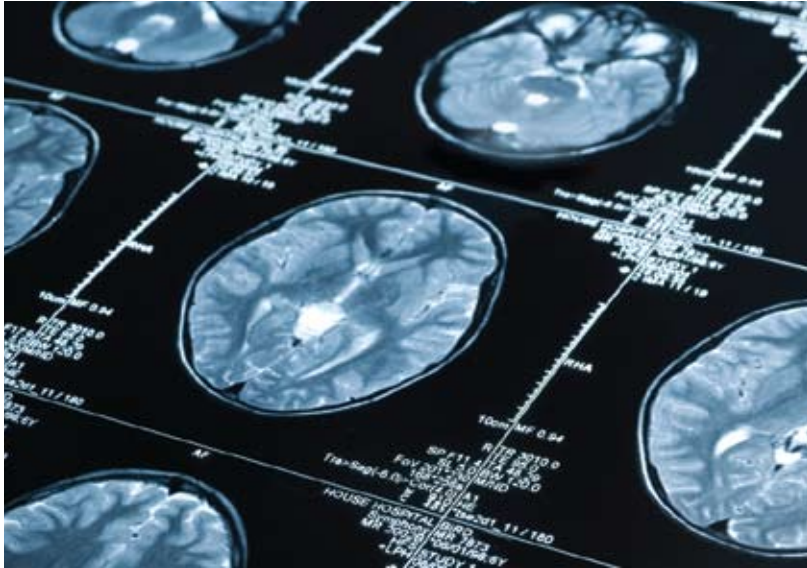


People who live long, healthy lives like to thank their “good genes.” But it might be more accurate to thank their parents’ socioeconomic status (SES). Certainly genes play a role in disease and longevity, but research shows that the best predictor of how long someone lives and how healthy they are during their life is SES, even when other important factors are held constant, including access to health care, gender and race.

It is not just people living in poverty who are worse off—every step down the economic ladder takes a toll on health, says psychologist Nancy Adler, chair of the John D. and Catherine T. MacArthur Foundation Research Network on Socioeconomic Status and Health. In the United States, where the economic ladder is steep and the rungs far apart, a person in the middle is twice as likely to die before age 65 as someone at the top, while someone at the bottom of the ladder is three times as likely.

As Adler points out, effects related to lower SES follow people throughout their lives. Lower SES affects brain development in infancy and childhood, influences achievement in school and work, and compromises health through it all. In fact, Adler and her colleagues find that even if people rise out of poverty as adults, their early experiences shape their health for the rest of their lives.

Researchers at the University of Pittsburgh and Carnegie Mellon University are looking inside the



brains of adults—using a scanning technique called functional Magnetic Resonance Imaging—to pinpoint the mechanisms by which SES in childhood influences health. One study, led by Peter Gianaros, along with Karen Matthews, Stephen Manuck and Sheldon Cohen, finds effects in an area of the brain called the amygdala, which other studies in their lab have linked to blood pressure control during stress.

In the study, the researchers watched how the brain reacted when people viewed images of threatening facial expressions—a common way of assessing stress reactions. Participants who grew up with relatively low

SES showed more amygdala activation than people who were better off in childhood. This study suggests that growing up with lower SES may be associated with a change in brain function that leads the body to overreact to stress. And stress, as we will see later, can cause significant problems with health.

Other researchers are exploring how to buffer children from the effects of low SES. For example, developmental psychologist David Olds of the University of Colorado Health Sciences Center has pioneered the design and testing of the Nurse Home Visiting Program. In this program, registered nurses visit low-income women at home during their pregnancies and until their children are two years old, providing support, advice and medical services. Olds has conducted three studies of the program in different cities and among different populations. Each time he found sizable long-term benefits not only for the mothers, but for their children as well.

In Elmira, New York, for example, the 400



predominantly white women who participated in the program had better prenatal health, fewer arrests, less substance abuse and more stable employment than women who were not part of the program. Their children suffered fewer injuries, were more ready to start school and, by age 15, drank less, were arrested less and had fewer sexual partners. Similar results were found in Memphis, Tennessee, with 1,138 African American women and their children. Olds also found that, at age six, the children participating in the program in Memphis had higher IQs, more advanced language development and fewer mental health problems than a comparison group of children.



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REDUCING THE STRAIN OF STRESS

The term “stress” has become overused in popular culture, referring to just about any perceived difficulty in life. But stress is rooted in a physiological reaction—involving a cascade of hormones and subsequent increase in heart rate and blood pressure—that the body goes through when under emotional or physical threat. In small doses, this reaction helps us cope with potentially threatening situations. But groundbreaking research by psychologists over the past twenty years has linked stress—especially chronic stress—to increases in a person’s vulnerability to cardiovascular and other diseases, in part by altering immune system functioning.

That is why chronic stress may underlie some health disparities, says San Diego State University psychologist Linda Gallo. Indeed, research by Gallo and others finds that the same people who have the



biggest health disparities experience the most chronic stress from racism and discrimination, financial strain, safety risks, interpersonal conflict, major life events, and other environmental factors.

In related work, Denise Janicki-Deverts and colleagues at Carnegie Mellon University found that the levels of two stress hormones—epinephrine and norepinephrine—were highest among people with the lowest income, education and occupational standing. And Gallo and colleagues found that Latina women at the low end of the socioeconomic scale showed more signs of a condition called metabolic syndrome, a precursor of coronary vascular disease that consists of elevated blood pressure, blood sugar, blood lipids and levels of abdominal fat.



Ultimately the best way to decrease chronic stress among the most needy is to deal with the broader issues of discrimination, racism, poverty and poor living conditions on a national scale. But psychologists have also developed interventions that help patients at a more individual level.

Hector Myers of the University of California, Los Angeles, for example, worked with an interdisciplinary team of physicians and public health researchers to test the idea that stress reduction may improve health in African Americans. They found that African American men and women who were previously diagnosed with hypertension showed fewer signs of coronary atherosclerosis—which predicts heart disease and stroke—after participating in a program of transcendental meditation. In contrast, the health status of a comparison group that received a traditional health education class worsened over the same time frame.



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PROVIDING A SENSE OF CONTROL

The chief executive officer of a large corporation, who may earn millions of dollars in salary and benefits, is half as likely to die prematurely as a middle manager and three times less likely to die prematurely than someone at the bottom of the company's pay scale. Aside from financial stability, one of the factors that protects CEOs is a sense of personal control over their lives and work. In contrast, ethnic minority populations, people at the bottom of the corporate and economic ladder, as well as the unemployed and disenfranchised, often feel the least amount of personal control and tend to show the steepest health disparities.

Psychologists are obtaining various types of evidence that low social status and a lack of control can be bad for one's health. Wake Forest University psychologist Carol Shively suggested this in a series of studies with Macaque monkeys. These animals live in social groups with a distinct hierarchy in which dominant monkeys constantly bully those at the bottom of



the social ladder, who pay a price with their health. Not only do the low-status monkeys have elevated heart rates and other signs of chronic stress, but they also have serious atherosclerosis and higher rates of depression than the dominant monkeys.

People experience a similar fate. Several studies found that people with low job control have higher rates of heart disease than people with a high sense of control at work. And another study, by psychologist Linda Gallo and her colleagues, found a possible explanation. In a group of 108 middle-aged white women, they examined the link among SES, job characteristics, and ambulatory blood pressure—a measure that strongly predicts cardiovascular disease.



Blood pressure for women in low status jobs decreased the more control they believed they had at work. This trend was non-existent for women in higher status jobs. In fact, the researchers calculated that women in low status jobs would have blood pressure levels roughly equivalent to those of women in higher status jobs if they felt they had more control at work.

Not only can workers benefit from having a greater sense of control at work, there is also a pay-off for employers, according to a study by psychologists Frank Bond and David Bunce of the University of London. When they restructured jobs at a call center to give workers greater discretion in how they carried out their tasks, mental health improved, people missed fewer days of work and job performance improved.

Policymakers have begun to take note of these kinds of findings. For example, a National Institute for Occupational Safety and Health report, written by a team headed by occupational health psychologist Steven Sauter, encourages companies to organize jobs and workplaces in ways that allow workers more control. The recommendations include making improvements in the design of tasks and workloads, increasing worker participation in decision-making, and enabling greater communication among workers and managers.

Many people who suffer from the biggest health disparities are unemployed and thus may feel an

intense lack of control. Interventions like the JOBS program, created by University of Michigan psychologists Richard Price and Amiram Vinokur, can help by providing people the tools and social support they need to find work. Program participants meet in groups with trained team leaders to discuss the principles of an effective job search and how to use problem-solving techniques to cope with setbacks and unemployment-related stress.

People who complete the program—which has been implemented and rigorously tested through unemployment offices and community service agencies in cities in the United States, Finland and China—not only find better, higher paying jobs faster than people who do not, but they also have lower rates of mental health problems.



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EQUAL TREATMENT FOR ALL

Imagine if a security guard followed you around the store every time you tried to shop for some new clothes. Or a less qualified white job applicant was selected for a job that you, a person of color, wanted. Or the legislators in your state passed a law to outlaw your right to marry the person you love. Research has documented that these are the very real experiences of African Americans, gays and lesbians and other minority and disadvantaged populations living in the United States.

Like any form of chronic stress, the strain of this kind of—sometimes overt, but often subtle—discrimination exacts a toll on health. And many studies link discrimination to mental health problems such as depression and anxiety as well as physical ailments related to chronic stress. In one study, Yale University health psychologist Tené Lewis and her colleagues found that the more African American women experienced even subtle discrimination—measured as a feeling of being ignored or treated with a lack of courtesy or respect—the more likely they were to show



signs of calcium build-up in their coronary arteries, which is an early sign of heart disease.

But discrimination has another, less visible influence on health. Psychologists have discovered a more subtle form of bias—often unconscious even to those who harbor it—that may directly affect the kind of medical treatment people receive. The work started with several studies showing that doctors treat African Americans and other ethnic minorities differently from whites presenting with the same symptoms.

In one study, Michelle van Ryn and Diana Burgess, affiliated with the University of Minnesota, examined why doctors recommend coronary artery bypass surgery more often to white men with coronary artery disease than to African American men with the same condition. Doctors in their study (most of whom were not African American) admitted that they believed the African American patients would be less likely to follow medical advice, maintain an active lifestyle, and undergo cardiac rehabilitation.

At the core of these biased beliefs may be a more basic and less nefarious psychological mechanism. In fact, research over the past 20 years shows that our brains are wired to take short-cuts—especially when we are overworked and tired, as many physicians tend to be—and categorize people, places and things into easy-to-manage, if sometimes stereotypical, boxes.



Some of the most intriguing work in this area involves the Implicit Association Test (IAT), which measures how tightly connected two concepts are in someone's mind—what psychologists call implicit attitudes. When looking at race, for example, it measures how quickly people make associations of positive and negative terms with African American and white people. In one study, Harvard University's Alexander Green and Mahzarin Banaji used the IAT with a group of 287 physicians (mainly non-African American) in Boston and Atlanta to see whether they could find a link between this kind of unconscious racial bias and patient treatment. They did.

The physicians read a vignette about a 50-year old man admitted to emergency care with heart attack

symptoms, with the patient's race randomly varied between African American and white. Doctors then had to say whether they would prescribe an aggressive, but often life-saving, clot-busting treatment called thrombolysis. They prescribed thrombolysis less often to African American patients diagnosed with coronary artery disease, with a direct link found between unconscious bias against African Americans and willingness to use thrombolysis.

Brian Nosek and Norman Oliver of the University of Virginia are testing whether educating physicians about implicit bias using the IAT can affect treatment decisions. In their ongoing studies, physicians will learn about implicit bias prior to making treatment decisions for patients of varying ethnicities seeking advice on total knee replacement and pain treatment for cancer. Related work in Nosek's lab showed that this kind of intervention affected decisions related to age-based hiring discrimination and to gender differences in promoting girls and boys to advanced math classes. This suggests that providing education about implicit bias may itself reduce the impact of implicit bias on judgment.

Teaching health care providers about cultural differences may be another way to ensure more equitable care. People from different cultures often communicate best in their native language, and even those who speak English fluently may differ in the way they describe their symptoms, in their

willingness to talk about certain diseases and in their beliefs about the causes, and therefore treatment, of certain illnesses. Psychologists Wei-Chin Hwang of Claremont-McKenna College, Hector Myers of UCLA, and their colleagues, for example, find that Asian American patients are more likely than white American patients to complain of bodily ailments when they are depressed. And Latinos often refer to experiencing *ataque de nervios*, a set of symptoms—including feeling a loss of control, fainting and the sensation of heat rising from the head—that corresponds to no standard psychiatric diagnosis.

Training clinicians to be culturally sensitive is slowly finding its way into medical training. Richard Tanenbaum at the Uniformed Services University, for example, has developed a program that integrates cultural competency into a physician training program that is spreading to other medical schools and continuing education programs.

There is plenty of evidence that culturally sensitive programs provide big results. Project Dulce, for example, is a diabetes management program in San Diego aimed at an underserved, ethnically diverse population that includes African Americans, Filipinos and Vietnamese. Registered nurses, trained as certified diabetes educators, oversee the medical care. But the key to its success is the use of a team of peer educators—community members with diabetes who go through an in-depth, six-month training program

on ways to support and educate their peers in a culturally appropriate way. An initial evaluation of the program finds that, after a year, patients enrolled in Project Dulce show significant improvements in several health-related measures related to diabetes, have a better understanding of diabetes and believe less in traditional but ineffective treatments.



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FUTURE DIRECTIONS



Psychologists are at the forefront of health disparities research. Working with collaborators in other disciplines, they play leading roles in defining the problem, developing solutions and evaluating the effectiveness of interventions. Here are some areas in which psychologists plan to direct their efforts in coming years:

Modeling cause and effect. Although researchers have learned a great deal about the causes of health disparities, they still lack a comprehensive model that captures all of the biological, psychological and environmental factors that contribute to disparities and how those factors interact. Psychologists, working in interdisciplinary teams, will develop and test models of this kind over the next decade.

Understanding within-group differences. Much of the research to date examines health outcomes in broad racial and ethnic groups (such as African Americans, Asian Americans, Latinos, Native Americans, and whites). But these groups are not homogenous. Psychologists will conduct more research that compares outcomes across subgroups and individuals within each of these broad groups. The results of this work may provide further clues about the underlying causes and persistence of health disparities.

Eliminating bias. Psychologists will continue to explore the role that both conscious and unconscious bias plays in medical treatment. And they will design interventions to eliminate or compensate for that bias.

Testing interventions. Most previous research has been too limited in scope and duration to fully determine the effectiveness of potential interventions. With appropriate funding, psychologists will be able to design and implement multi-site, long-term studies with large representative samples to test interventions aimed at reducing health disparities.

Cultural competence. Psychologists are at the forefront of research on cultural differences that may play a role in health care and interactions between patients and treatment providers. They will help design and implement programs that train health and mental health care workers in hospitals and community health centers to be more sensitive to the needs of people from different backgrounds.

Social policy. Psychologists will disseminate the results of their research to policymakers and the general public so that this knowledge can inform legislation and the development of programs that will reduce and eventually eliminate health disparities.



This booklet was written by Beth Azar.



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