

PERSPECTIVES

Why Do Providers Contribute to Disparities and What Can Be Done About It?

Diana J. Burgess, PhD, Steven S. Fu, MD, MSCE, Michelle van Ryn, PhD, MPH

This paper applies social cognition research to understanding and ameliorating the provider contribution to racial/ethnic disparities in health care. We discuss how fundamental cognitive mechanisms such as automatic, unconscious processes (e.g., stereotyping) can help explain provider bias. Even well-intentioned providers who are motivated to be nonprejudiced may stereotype racial/ethnic minority members, particularly under conditions of that diminish cognitive capacity. These conditions—time pressure, fatigue, and information overload—are frequently found in health care settings. We conclude with implications of the social-cognitive perspective for developing interventions to reduce provider bias.

KEY WORDS: provider behavior; disparities; race; ethnicity; social cognition.

J GEN INTERN MED 2004;19:1154–1159.

The medical profession is grappling with disturbing evidence of racial and ethnic disparities in health care. Although there are a number of factors contributing to disparities in care, there is increasing evidence of a provider contribution.¹ This paper discusses the implications of the extensive body of evidence from social cognition research regarding unconscious bias for understanding and ameliorating the unintentional provider bias, building upon previous work from van Ryn and colleagues.^{2–4}

The Strange Juxtaposition of Egalitarian Attitudes and Discriminatory Behavior

Racial bias persists in the United States despite the dramatic increase in the endorsement by whites of prin-

ciples of racial equality. Much research has attempted to explain this “disconnect.”^{5–11} This research provides several potential explanations for a discrepancy between clinicians’ behavior and their egalitarian attitudes.

1) Fundamental and universal human information-processing mechanisms lead to an unintentional “disconnect” between providers’ desire to provide equal treatment and the way their actual clinical decision making is influenced by patient race/ethnicity and socioeconomic status.

Research by cognitive psychologists and other scientists have shown that humans have two separate, interconnected learning and memory systems, described as *slow-learning* and *fast-binding*.¹² Information in the slow-learning system is extracted and applied effortlessly, extremely rapidly, and often unconsciously. This is a highly adaptive system that allows us to negotiate our complex world without having to stop and consciously process every stimulus. However, the system has its drawbacks when the general information associated with a category (stereotype) is inaccurately applied to a given instance of the category, or individual. We engage our fast-binding system when we are “thinking hard”—for example, during a decision-making process that requires a great deal of effort, such as a patient who presents with unusual symptoms—as opposed to the type of decisions we make routinely. Importantly, we only engage the fast-binding system when we are motivated to do so and when there are sufficient “cognitive resources” to do so—such as ample time for decision making and freedom from distraction.¹²

In general, the implications of this research on dual cognitive systems have had little impact on expectations of providers. Clinicians are generally expected, and expect themselves, to view each patient objectively and impartially,¹³ collect accurate and detailed information on patients’ unique clinical and social history, and to combine these with findings from the physical exam and test results in order to make a recommendation. However, evidence from the social cognition and provider decision-making literatures suggests that these expectations are highly unrealistic.

Providers, like all humans, are likely to unconsciously apply stereotypes when making sense of patients. Extensive evidence has demonstrated that when humans mentally categorize individuals as belonging to a particular class or group, the characteristics assigned to that group are

Received from the Center for Chronic Disease Outcomes Research, VA Health Services Research Center of Excellence (DJB, SSF, MVR), Section of General Internal Medicine (SSF), Minneapolis Veterans Affairs Medical Center; Department of Epidemiology, University of Minnesota School of Public Health (MVR); and Department of Internal Medicine, University of Minnesota (SSF, DJB), Minneapolis, Minn.

Address correspondence and requests for reprints to Dr. Burgess: Center for Chronic Disease Outcomes Research (CCDOR), VA Medical Center (1110), One Veterans Drive, Minneapolis, MN 55417 (e-mail: Diana.Burgess@med.va.gov).

unconsciously and automatically applied to the individual (stereotyping). This process has received considerable research attention in a number of domains. In health care, there is substantial evidence that patient categories such as race/ethnicity, gender, age, sexual orientation, and socioeconomic status influence provider beliefs about and expectations of patients. As an example of evidence of automatic stereotyping, providers in one study rated their black patients, on average, as less educated than their white patients and less likely to have demanding careers, regardless of the patients' actual level of education and/or occupation. Thus, individual patients were perceived by providers in ways that were stereotype consistent but personally inaccurate even though information about patients' education was in the medical record.¹⁴⁻³²

2) Attending to and processing individual information requires considerable cognitive resources.

Motivation to attend to individual information is necessary but not sufficient. Extensive evidence indicates that automatic, rather than conscious, effortful thoughts and feelings dominate when we are busy with other tasks, distracted, tired, or under time pressure, and when people are anxious.³³ Because these conditions are typical of many clinical settings, providers are likely to be influenced by automatic cognitions, regardless of level of motivation to pay attention to individual patient characteristics. Moreover, there is evidence that using automatic processes such as stereotypes actually conserves cognitive resources, enabling people to focus their attention on other tasks.³⁴

3) Providers' conscious beliefs may be inconsistent with their automatic, unconscious reactions to low-income and/or minority patients.

These unconscious reactions occur when automatically activated beliefs or attitudes from the slow-learning system are applied outside of conscious awareness—a process called “implicit” cognition. Moreover, these contents of the slow-learning system include emotions, feelings, and behavioral scripts that are not easily verbalized. For example, a number of studies have shown that white Americans' knowledge about blacks often includes emotions such as fear or distrust, as well as the behavioral expectations they associate with blacks, such as hostility and aggression.^{11,35-39} In contrast, information in the fast-binding system is accessible to conscious introspection and relatively easily verbalized. When we ask people directly about their feelings and beliefs about an issue, and they answer us honestly, we are accessing their conscious attitudes. This process is termed “explicit cognition.”

In the past, the contradiction between whites' often racist behavior and their simultaneous disavowal of racial prejudice, as expressed in public opinion surveys, was seen as evidence that whites were not being honest in their responses.⁶ However, new technologies that allow us to measure people's unconscious, automatic beliefs have demonstrated that many whites hold negative unconscious attitudes toward blacks while simultaneously having

egalitarian and nonprejudiced conscious beliefs about blacks.^{7,9-11,40,41} These unconscious and automatic negative racial beliefs are believed to be the product of early learning and constant exposure to the negative images of blacks that permeate American culture.^{7,9,10,42}

In one experiment that illustrates this phenomenon, whites' self-reported racial attitudes predicted their *verbal behavior* toward blacks (a relatively controllable behavior) and predicted how friendly they believed themselves to be. However, whites' unconscious racial attitudes predicted their nonverbal friendliness by observers (a less controllable behavior) and how friendly they were perceived by their black conversational partner.⁴³ Unfortunately, there is evidence that when the provider's verbal and nonverbal responses are inconsistent, patients and observers will be more likely to assume that the *nonverbal* response is indicative of the provider's “true attitude” because nonverbal responses are believed to be harder to “fake.”⁴⁴ This may explain why the majority of white physicians believe that the health care system does not discriminate against racial and ethnic minorities while fully half of all the black (56%) and Latino (51%) public believe that the health care system treats people unfairly based on race/ethnicity.^{45,46}

4) When providers must make complicated judgments quickly, with insufficient and imperfect information or little time to gather information, providers may “fill in the gaps” with beliefs associated with patients' social categories.

Stereotypes can serve as precomputed, preorganized frameworks that provide a potentially rich set of knowledge at the cost of relatively little effort (e.g., the patient is an elderly, low-income, black male).⁴⁷ Moreover, population statistics may function very much like stereotypes in provider clinical decision making. Research indicates that such population statistics are overapplied to individual patients⁴⁸ (in epidemiology this is called an ecological fallacy; in the clinical decision-making literature it may be described as use of base rates.)

Some have argued that it may be acceptable to use stereotypes if they are based on statistical evidence.⁴⁹ However, even “evidence-based” stereotypes are likely to contribute to disparities when providers fail to correctly incorporate individual data, and instead are swayed by their beliefs regarding the probabilities of individuals in a sociodemographic category having a given characteristic.⁵⁰

5) Providers, like all humans, may be more likely to rely on stereotypes for “outgroup members.”

Outgroup members are people who we see as “not like us,” a category that includes people who do not belong to our racial or ethnic group. In contrast, “ingroup members” are more likely to be perceived in terms of their individual characteristics. People also are more likely to see outgroup members as homogeneous, drawing fewer distinctions between them, whereas ingroup members are more likely seen as heterogeneous.^{2,33,51-54} This research suggests that white providers are more likely to perceive Hispanic or black patients in terms of their group stereotype and pay less attention to their individual characteristics.

6) Providers, like all humans, may unconsciously favor those they feel similar to regardless of their conscious egalitarian beliefs.

This “ingroup/outgroup” distinction is likely to be an important contributor to racial and ethnic bias. A vast amount of research on *intergroup bias* has shown that simply dividing people into “us” and “them” leads to “gut-level” biases in favor of the ingroup, independent of elaborate stereotypes.² Simply put, we like and are more motivated to help people we think are like us. People trust ingroup members more and tend to give them “the benefit of the doubt.”^{55,56} The implications of these findings are that a white provider may be more likely to attribute negative behavior by a white patient (such as failure to comply with provider instructions) to *situational* factors (e.g., the instructions were confusing), whereas that same behavior by a black patient may be more likely to be attributed to stable, dispositional factors (e.g., low education). Similarly, research has shown that negative outgroup behavior is described in more abstract terms than negative ingroup behavior, leading to attributions that the behavior will occur in future situations.⁵⁶⁻⁵⁹ For instance, a white provider may describe a black patient as “noncompliant,” fostering the assumption that the patient will be noncompliant in future situations, but may describe her white patient as having “missed a follow-up appointment.” Evidence suggests that these attributions are likely to lead to differential treatment. For example, in a vignette study, providers were more likely to provide highly active antiretroviral therapy to HIV/AIDS patients when they were perceived to be likely to be adherent to treatment—and black patients were less likely to be rated as adherent, independent of other factors.^{60,61} While all groups—whites, Hispanics, blacks, etc.—are biased in favor of their ingroup—at this point providers are predominantly white and almost all middle to upper class, setting the stage for ingroup biases that disadvantage low socioeconomic status patients and members of ethnic and racial minorities.⁶²

Importantly, research has shown that many intergroup biases are driven toward a bias that favors the ingroup rather than bias directed against the outgroup.⁵² A white provider does not have to treat a black patient poorly for racial disparities to emerge—simply treating the white patient more favorably will produce the same effect. Most providers will recognize the fact that some patients seem to elicit a willingness to make an extra effort; if this extra effort is made more often for white patients than black, the millions of provider-patient encounters are likely to result in differential outcomes.

7) Providers may unconsciously behave in ways that lead to confirmation of stereotypes.

A great deal of research on “behavioral confirmation” and doctor-patient interaction provides evidence that providers may interact with minority patients in a manner that leads the patient to confirm the provider’s initial stereotypes.^{63,64} A considerable body of research indicates that “perceivers” often behave in ways that result in support of

their preconceived beliefs about a “target.” This suggests that if a provider believes that blacks are less likely to want surgery or transplants, they may unintentionally confirm these beliefs through the questions they ask and do not ask. This example is supported by studies showing that intake behaviors in the emergency department, level and detail of information provided in encounters, and question asking and tone can be influenced by patient race/ethnicity, gender, and/or socioeconomic status.⁶⁵⁻⁶⁸ Patient behavior may well contribute to confirmation of prior expectations. Evidence shows that people in lower-power roles (such as patients) also tend to fall into an “acquiescence orientation,” defined as being more likely to answer positively than negatively to perceivers’ questions.⁶⁹

8) Unconsciously activated emotions may influence the tone of the encounter.

For example, in one study, subliminal exposure to photographs of blacks as opposed to photographs of whites caused naïve participants to unknowingly behave in a more hostile manner toward their partners in a subsequent word-guessing game. The white partners of these participants (who were also unaware of the experimental manipulation), in turn behaved in a more hostile manner.³⁵ If this study generalizes to clinical settings, it suggests that white providers may unknowingly feel and communicate more negative affect toward their black patients who will exhibit more negative affect in return. Because these processes occur below the level of awareness providers may then experience their minority patients as less friendly and less agreeable.

9) Stereotypes influence the way providers interpret identical behaviors and clinical findings.

The effect of stereotypes on providers’ diagnoses has been demonstrated by laboratory experiments in which providers are randomly exposed to different clinical vignettes. The vignettes are identical except for some characteristic of the patient, such as race or gender; resulting differences in interpretation and diagnosis can be attributed to stereotypes.^{16,19,20,70} In one such study, psychotherapists were more likely to rate identical behaviors depicted in a scenario as less clinically significant when the adolescent was said to be black compared to when the adolescent was said to be white.⁷¹

10) Even egalitarian white providers may be more uncomfortable interacting with minority or stigmatized patients than with white patients.

Researchers have found that white people who sincerely want to behave in a nonprejudiced manner often manifest anxiety and heightened levels of arousal when interacting with minority group members and members of stigmatized groups.⁷² This probably does not help the interaction much and ironically, may very well be interpreted as prejudice by patients.⁸ Research on provider-patient communication supports the idea that white providers are less comfortable interacting with members of other racial and ethnic groups. Patients’ characteristics have been found to be associated with provider interpersonal

behaviors such as nonverbal attention, empathy, courtesy, and information giving.⁷³ This may explain why blacks patients who were treated by black providers had higher levels of satisfaction, perceived the providers to be more respectful, accessible, better listeners, and better at explaining their medical problems.⁷⁴

Future Directions: Research and Intervention

Each of the headings above reflect the implications of the empirical evidence from social cognition research for the mechanisms through which provider behavior may unintentionally contribute to disparities. As such, they can be considered hypotheses to be tested. There have been few studies specifically designed to test the hypothesis that provider decision making or behavior contributes to disparities, and even fewer testing the mechanisms through which such contributions are made.¹ Such studies are necessary if we are to advance understanding of the mechanism contributing to disparities in care.

Tests of approaches to ameliorate disparities can be conducted in tandem with, or as part of, studies testing specific mechanisms contributing to disparities. The existing research suggests the possibility that interventions should be minimally demanding for providers. Because people have a limited amount of cognitive resources to devote to high-effort tasks, focusing intense mental effort on one task reduces the resources available for other cognitive tasks⁷⁵ and is generally stressful.⁷⁶ Thus, interventions demanding extensive resources on the part of the provider have the potential to backfire. The notion that “minimal” interventions may be more successful than more intensive interventions runs counter to common sense wisdom and current recommendations. Nevertheless, there is some evidence of efficacy of minimal interventions in reducing stereotyping and discrimination. For example, simply giving whites instructions to “imagine a day in the life of” a black person “looking at the world through his eyes and walking through the world in his shoes,” led to less implicit stereotyping and ingroup favoritism. This is promising, but long-term effects were not evaluated.⁷⁷ A recent research program testing mental imagery—a cognitive therapy technique with substantial empirical support—has shown some effect on unconscious and automatic stereotyping.⁷⁸ Another line of research has shown that people who are made aware of the influence of their stereotypes can be motivated to mentally “correct” their initial biased responses.⁷⁹ This suggests that if physicians are made aware of particular situations in which racial and ethnic minority group members receive inferior care, they may be motivated to reexamine their initial clinical decision for the possibility of bias and correct their decision accordingly. Other studies have undercut stereotyping by high-power perceivers by manipulating the interaction goals of the perceiver (e.g., instructing the perceiver to “get to know” the target) and target (e.g., instructing the target to gather information from the perceiver).^{80,81} These studies suggest

that structural changes that support providers in spending time getting to know patients, as well as patient activation interventions, may help to reduce disparities.

Most of the social-cognitive interventions were tested in carefully controlled laboratory settings using experimental designs. These must be tested in health care settings to determine whether these findings are generalizable. However, given their relatively low cost and ease of implementation, they are worth testing before higher-cost, more intensive interventions with greater potential for negative rebound are implemented.

That said, findings from the social cognition literature, patient-provider relationships literature, and quality of care literature all point to the importance of supporting provider skills in interpersonal interaction.^{25,26,82-96} Interpersonal skills such as active listening, relationship building, and communication skills are fundamental and necessary (but perhaps not sufficient) to the provision of high-quality and equitable health care.

Finally, this analysis also underscores the fact that stereotyping and bias is not simply a product of the individual provider but is caused by features of the health care setting that decrease cognitive capacity, such as fatigue, overload, and time pressure. Moreover, these conditions have been shown to be more prevalent in settings that predominantly treat minority patients. Structural changes are critical so that providers who are motivated to go beyond social categories and stereotypes have sufficient resources to do so.

REFERENCES

1. Smedley BD, Stith AY, Nelson AR, eds. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare*. Washington, DC: National Academies Press; 2003.
2. Brewer MB, Brown RJ. Intergroup relations. In: Gilbert DT, Fiske ST, Lindzey G, eds. *The Handbook of Social Psychology*. 4th ed. Boston, Mass: McGraw-Hill; 1998;2:554-94.
3. van Ryn M. Research on the provider contribution to race/ethnicity disparities in medical care. *Med Care*. 2002;40:1140-151.
4. van Ryn M, Fu SS. Paved with good intentions: do public health and human service providers contribute to racial/ethnic disparities in health? *Am J Public Health*. 2003;93:248-55.
5. McConahay JB. Modern racism, ambivalence, and the Modern Racism Scale. In: Dovidio JF, Gaertner S, eds. *Prejudice, Discrimination, and Racism*. San Diego, Calif: Academic Press; 1986:91-125.
6. Crosby F, Bromley S, Saxe L. Recent unobtrusive studies of black and white discrimination and prejudice: a literature review. *Psychol Bull*. 1980;87:546-63.
7. Devine PG, Monteith MJ. Automaticity and control in stereotyping. In: Chaiken S, Trope Y, eds. *Dual-process Theories in Social Psychology*. New York, NY: Guilford Press; 1999:339-60.
8. Devine PG, Vasquez KA. The rocky road to positive intergroup relations. In: Eberhardt JL, Fiske T, eds. *Confronting Racism: The Problem and the Response*. Thousand Oaks, Calif: Sage Publications; 1998:234-62.
9. Dovidio JF, Gaertner SL. On the nature of contemporary prejudice: the causes, consequences, and challenges of aversive racism. In: Eberhardt JL, Fiske T, eds. *Confronting Racism: The Problem and the Response*. Thousand Oaks, Calif: Sage Publications; 1998:3-32.
10. Dovidio JF, Kawakami K, Gaertner SL. Implicit and explicit prejudice and interracial interaction. *J Pers Soc Psychol*. 2002;82:62-8.

11. Fazio RH, Jackson JR, Dunton BC, Williams CJ. Variability in automatic activation as an unobtrusive measure of racial attitudes: a bona fide pipeline? *J Pers Soc Psychol.* 1995;69:1013-27.
12. Smith ER, DeCoster J. Dual-process models in social and cognitive psychology: conceptual integration and links to underlying memory systems. *Pers Soc Psychol Rev.* 2000;4:108-31.
13. Eisenberg JM. Sociologic influences on decision-making by clinicians. *Ann Intern Med.* 1979;90:957-64.
14. Lewis G, Croft-Jeffreys C, David A. Are British psychiatrists racist? *Br J Psychiatry.* 1990;157:410-5.
15. van Ryn M, Burke J. The effect of patient race and socio-economic status on physicians' perceptions of patients. *Soc Sci Med.* 2000;50:813-28.
16. Schulman KA, Berlin JA, Harless W, et al. The effect of race and sex on physicians' recommendations for cardiac catheterization. *N Engl J Med.* 1999;340:618-26.
17. Schneider AE, Davis RB, Phillips RS. Discussion of hormone replacement therapy between physicians and their patients. *Am J Med Qual.* 2000;15:143-7.
18. Shortt S. Venerable or vulnerable? Ageism in health care. *J Health Serv Res Policy.* 2001;6:1-2.
19. Stern M, Arenson E. Childhood cancer stereotype: impact on adult perceptions of children. *J Pediatr Psychol.* 1989;14:593-605.
20. Stern M, Moritzen SK, Carmel S, Olexa-Andrews M. The prematurity stereotype in Israeli health care providers. *Med Educ.* 2001;35:129-33.
21. Stern M, Ross S, Bielliss M. Medical students' perceptions of children: modifying a childhood cancer stereotype. *J Pediatr Psychol.* 1991;16:27-38.
22. Kelly CE. Bringing homophobia out of the closet: antigay bias within the patient-physician relationship. *Pharos Alpha Omega Alpha Honor Med Soc.* 1992;55:2-8.
23. Kelly JA, St Lawrence JS, Smith S Jr, Hood HV, Cook DJ. Stigmatization of AIDS patients by physicians. *Am J Public Health.* 1987;77:789-91.
24. Kelly JA, St Lawrence JS, Smith S, Hood HV, Cook DJ. Medical students' attitudes toward AIDS and homosexual patients. *J Med Educ.* 1987;62:549-56.
25. Bertakis KD, Callahan EJ, Helms LJ, Azari R, Robbins JA, Miller J. Physician practice styles and patient outcomes: differences between family practice and general internal medicine. *Med Care.* 1998;36:879-91.
26. Bertakis KD, Roter D, Putnam SM. The relationship of physician medical interview style to patient satisfaction. *J Fam Pract.* 1991;32:175-81.
27. Gerbert B. Perceived likeability and competence of simulated patients: influence on physicians' management plans. *Soc Sci Med.* 1984;18:1053-9.
28. Hall JA, Epstein AM, DeCiantis ML, McNeil BJ. Physicians' liking for their patients: more evidence for the role of affect in medical care. *Health Psychol.* 1993;12:140-6.
29. Kearney N, Miller M, Paul J, Smith K. Oncology healthcare professionals' attitudes toward elderly people. *Ann Oncol.* 2000;11:599-601.
30. Like R, Zyzanski SJ. Patient satisfaction with the clinical encounter: social psychological determinants. *Soc Sci Med.* 1987;24:351-7.
31. Porter JR, Beuf AH. The effect of a racially consonant medical context on adjustment of African-American patients to physical disability. *Med Anthropol.* 1994;16:1-16.
32. Revenson TA. Compassionate stereotyping of elderly patients by physicians: revising the social contact hypothesis. *Psychol Aging.* 1989;4:230-4.
33. Fiske ST. Stereotyping, prejudice, and discrimination. In: Gilbert DT, Fiske ST, Lindzey G, eds. *The Handbook of Social Psychology.* 4th ed. Boston, Mass: McGraw-Hill; 1998;2:357-411.
34. Macrae CN, Milne AB, Bodenhausen GV. Stereotypes as energy-saving devices: a peek inside the cognitive toolbox. *J Pers Soc Psychol.* 1994;66:33-47.
35. Chen M, Bargh JA. Nonconscious behavioral confirmation processes: the self-fulfilling consequences of automatic stereotype activation processes. *J Exp Soc Psychol.* 1997;33:541-60.
36. Devine PG. Stereotypes and prejudice: their automatic and controlled components. *J Pers Soc Psychol.* 1989;56:5-18.
37. Kawakami K, Dion KL, Dovidio JF. Racial prejudice and stereotype activation. *Pers Soc Psychol Bull.* 1998;24:407-16.
38. Fazio RH, Dunton BC. Categorization by race: the impact of automatic and controlled components of racial prejudice. *J Exp Soc Psychol.* 1997;33:451-70.
39. Wittenbrink B, Judd CM, Park B. Evidence for racial prejudice at the implicit level and its relationship with questionnaire measures. *J Pers Soc Psychol.* 1997;72:262-74.
40. Wilson TD, Lindsey S, Schooler TY. A model of dual attitudes. *Psychol Rev.* 2000;107:101-26.
41. Banaji M, Greenwald AG. Implicit stereotyping and prejudice. In: Zanna MP, Olson JM, eds. *The Psychology of Prejudice: The Ontario Symposium.* Hillsdale, NJ: Erlbaum; 1994;7:55-76.
42. Dovidio JF, Kawakami K, Gaertner SL. Implicit and explicit prejudice and interracial interaction. *J Pers Soc Psychol.* 2002;82:62-8.
43. Dovidio JF, Gaertner SL, Kawakami K, Hodson G. Why can't we just get along? Interpersonal biases and interracial distrust. *Cultur Divers Ethnic Minor Psychol.* 2002;8:88-102.
44. Depaulo BM, Friedman HS. Nonverbal communication. In: Gilbert DT, Fiske ST, Lindzey G, eds. *The Handbook of Social Psychology.* 4th ed. Boston, Mass: McGraw-Hill; 1998;2:3-40.
45. Race, Ethnicity and Medical Care: A Survey of Public Perceptions and Experiences. The Henry J. Kaiser Family Foundation; 1999. Available at: <http://www.kff.org/minorityhealth/1529-index.cfm>. Accessed September 2004.
46. National Survey of Physicians Part I: Doctors on Disparities in Medical Care: The Henry J. Kaiser Family Foundation; 2002. Available at: <http://www.kff.org/minorityhealth/20020321a-index.cfm>. Accessed September 2004.
47. Bodenhausen GV, Macrae CN, Sherman JS. On the dialectics of discrimination: dual processes in social stereotyping. In: Chaiken S, Trope Y, eds. *Dual-process Theories in Social Psychology.* New York, NY: Guilford Press; 1999:271-90.
48. Balsa AI, McGuire TG. Prejudice, clinical uncertainty and stereotyping as sources of health disparities. *J Health Econ.* 2003;22:89-116.
49. Judd CM, Park B. Definition and assessment of accuracy in social stereotypes. *Psychol Rev.* 1993;100:109-28.
50. McKinlay JB, Potter DA, Feldman HA. Non-medical influences on medical decision-making. *Soc Sci Med.* 1996;42:769-76.
51. Fiske ST. Stereotyping, prejudice, and discrimination at the seam between the centuries: evolution, culture, mind, and brain. *Eur J Soc Psychol.* 2000;30:299-322.
52. Fiske ST. What we know about bias and intergroup conflict: the problem of the century. *Curr Direct Psychol Sci.* 2002;11:123-8.
53. Linville PW, Fischer GW. Group variability and covariation: effects on intergroup judgment and behavior. In: Sedikides C, Insko CA, Schopler J, eds. *Intergroup Cognition and Intergroup Behavior.* Mahwah, NJ: Erlbaum, 1998:123-50.
54. Ryan CS, Judd CM, Park B. Effects of racial stereotypes on judgments of individuals: the moderating role of perceived group variability. *J Exp Soc Psychol.* 1996;32:71-103.
55. Chatman CM, von Hippel W. Attributional mediation of in-group bias. *J Exp Soc Psychol.* 2001;37:267-72.
56. Hilton JL, von Hippel W. Stereotypes. *Annu Rev Psychol.* 1996;47:237-71.
57. Maass A, Salvi D, Arcuri L, Semin G. Language use in intergroup contexts: the linguistic intergroup bias. *J Pers Soc Psychol.* 1989;57:981-93.
58. Wigboldus DH, Semin GR, Spears R. How do we communicate stereotypes? Linguistic bases and inferential consequences. *J Pers Soc Psychol.* 2000;78:5-18.
59. von Hippel W, Sekaquaptewa D, Vargas P. The linguistic intergroup

- bias as an implicit indicator of prejudice. *J Exp Soc Psychol.* 1997;33:490–509.
60. Bogart LM, Kelly JA, Catz SL, Sosman JM. Impact of medical and nonmedical factors on physician decision making for HIV/AIDS antiretroviral treatment. *J Acquir Immune Defic Syndr.* 2000;23:396–404.
61. Bogart LM, Catz SL, Kelly JA, Benotsch EG. Factors influencing physicians' judgments of adherence and treatment decisions for patients with HIV disease. *Med Decis Making.* 2001;21:28–36.
62. Operario D, Fiske ST. Racism equals power plus prejudice: a social psychological equation for racial oppression. In: Eberhardt JL, Fiske T, eds. *Confronting Racism: The Problem and the Response.* Thousand Oaks, Calif: Sage Publications; 1998:33–53.
63. Claire T, Fiske ST. A systemic view of behavioral confirmation: counterpoint to the individualist view. In: Sedikides C, Insko C, Schopler J, eds. *Intergroup Cognition and Behavior.* Hillsdale, NJ: Erlbaum; 1998:205–31.
64. Snyder M, Stukas AA Jr. Interpersonal processes: the interplay of cognitive, motivational, and behavioral activities in social interaction. *Annu Rev Psychol.* 1999;50:273–303.
65. Cooper LA, Roter D. Patient-provider communication: the effect of race and ethnicity on process and outcomes of healthcare. In: Smedley BD, Stith AY, Nelson AR, eds. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare.* Washington, DC: The National Academies Press; 2003:552–93.
66. Ashton CM, Haidet P, Paterniti DA, et al. Racial and ethnic disparities in the use of health services: bias, preferences, or poor communication? *J Gen Intern Med.* 2003;18:146–52.
67. Ferguson WJ, Candib LM. Culture, language, and the doctor-patient relationship. *Fam Med.* 2002;34:353–61.
68. Epstein AM, Taylor WC, Seage GR III. Effects of patients' socioeconomic status and physicians' training and practice on patient-doctor communication. *Am J Med.* 1985;78:101–6.
69. Zuckerman M, Knee CR, Hodgins HS, Miyake K. Hypothesis confirmation: the joint effect of positive test strategy and acquiescence response set. *J Pers Soc Psychol.* 1995;68:52–60.
70. Burk JP, Sher KJ. Labeling the child of an alcoholic: negative stereotyping by mental health professionals and peers. *J Stud Alcohol.* 1990;51:156–63.
71. Martin TW. White therapists' differing perceptions of black and white adolescents. *Adolescence.* 1993;28:281–9.
72. Blascovich J, Spencer SJ, Quinn D, et al. African Americans and high blood pressure: the role of stereotype threat. *Psychol Sci.* 2001;12:225–9.
73. Hooper EM, Comstock LM, Goodwin JM, Goodwin JS. Patient characteristics that influence physician behavior. *Med Care.* 1982;20:630–8.
74. Saha S, Komaromy M, Koepsell TD, Bindman AB. Patient-physician racial concordance and the perceived quality and use of health care. *Arch Intern Med.* 1999;159:997–1004.
75. Baumeister RF, Bratslavsky E, Muraven M, Tice DM. Ego depletion: is the active self a limited resource? *J Pers Soc Psychol.* 1998;74:1252–65.
76. Bierman AS, Lurie N, Collins KS, Eisenberg JM. Addressing racial and ethnic barriers to effective health care: the need for better data. *Health Aff (Millwood).* 2002;21:91–102.
77. Galinsky AD, Moskowitz GB. Perspective-taking: decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *J Pers Soc Psychol.* 2000;78:708–24.
78. Blair IV, Ma JE, Lenton AP. Imagining stereotypes away: the moderation of implicit stereotypes through mental imagery. *J Pers Soc Psychol.* 2001;81:828–41.
79. Wegener DT, Dunn M, Tokusato D. The flexible correction model: phenomenology and the use of naive theories in avoiding or removing bias. In: Moskowitz GB, ed. *Cognitive Social Psychology: The Princeton Symposium on the Legacy and Future of Social Cognition.* Mahwah, NJ: Lawrence Erlbaum. 2001:277–90.
80. Snyder M, Haugen JA. Why does behavioral confirmation occur? A functional perspective on the role of the perceiver. *J Exp Soc Psychol.* 1994;30:218–46.
81. Snyder M, Haugen JA. Why does behavioral confirmation occur? A functional perspective on the role of the target. *Pers Soc Psychol Bull.* 1995;21:963–74.
82. Adams RJ, Smith BJ, Ruffin RE. Impact of the physician's participatory style in asthma outcomes and patient satisfaction. *Ann Allergy Asthma Immunol.* 2001;86:263–71.
83. Bensing J. Doctor-patient communication and the quality of care. *Soc Sci Med.* 1991;32:1301–10.
84. Charles C, Gafni A, Whelan T. How to improve communication between doctors and patients. Learning more about the decision making context is important. *BMJ.* 2000;320:1220–1.
85. Cooper-Patrick L, Gallo JJ, Gonzales JJ, et al. Race, gender, and partnership in the patient-physician relationship. *JAMA.* 1999;282:583–9.
86. Curtis JR, Patrick DL, Caldwell E, Greenlee H, Collier AC. The quality of patient-doctor communication about end-of-life care: a study of patients with advanced AIDS and their primary care clinicians. *AIDS.* 1999;13:1123–31.
87. DiMatteo MR, Hays R. The significance of patients' perceptions of physician conduct: a study of patient satisfaction in a family practice center. *J Community Health.* 1980;6:18–34.
88. DiMatteo MR, Sherbourne CD, Hays RD, et al. Physicians' characteristics influence patients' adherence to medical treatment: results from the Medical Outcomes Study. *Health Psychol.* 1993;12:93–102.
89. Fox SA, Stein JA. The effect of physician-patient communication on mammography utilization by different ethnic groups. *Med Care.* 1991;29:1065–82.
90. Greenfield S, Kaplan S, Ware JE Jr. Expanding patient involvement in care. Effects on patient outcomes. *Ann Intern Med.* 1985;102:520–8.
91. Greenfield S, Kaplan SH, Ware JE Jr, Yano EM, Frank HJ. Patients' participation in medical care: effects on blood sugar control and quality of life in diabetes. *J Gen Intern Med.* 1988;3:448–57.
92. Greenlund KJ, Giles WH, Keenan NL, Croft JB, Mensah GA. Physician advice, patient actions, and health-related quality of life in secondary prevention of stroke through diet and exercise. *Stroke.* 2002;33:565–71.
93. Roter D. The enduring and evolving nature of the patient-physician relationship. *Patient Educ Couns.* 2000;39:5–15.
94. Roter DL, Hall JA. Studies of doctor-patient interaction. *Annu Rev Public Health.* 1989;10:163–80.
95. Roter D. The medical visit context of treatment decision-making and the therapeutic relationship. *Health Expect.* 2000;3:17–25.
96. Stewart D. The attitudes and attributions of student nurses: do they alter according to a person's diagnosis or sexuality and what is the effect of nurse training? *J Adv Nurs.* 1999;30:740–8.