Bridging the Gap

Understanding the Structure of Social Inequities in Childhood Obesity

Antronette K. Yancey, MD, MPH, Shiriki K. Kumanyika, PhD, MPH

The challenges of addressing childhood obesity include the need to close the gap in obesity rates between children and adolescents of ethnic minority and/or lower socioeconomic status (SES) backgrounds and their white or more affluent counterparts.[1–4] In low-income, urban, African-American and Latino communities, rates of overweight or obesity (using the Centers for Disease Control and Prevention 85th percentile cut-off) surpassing 40% of elementary school populations have been documented.[5] As noted in the Institute of Medicine (IOM) report assessing progress in childhood obesity prevention, some risk factors are relatively ubiquitous across all settings, but most are more concentrated in low-income communities of color.[2] This excess risk produces staggering disparities in obesity-related co-morbidities. For example, the lifetime odds of developing type 2 diabetes for Latinos or African Americans are nearly one in two at birth, twice that of white newborns.[6] Consequently, addressing the inequities underlying these disparities has become a priority within the Robert Wood Johnson Foundation's (RWJF) focus on childhood obesity. Their national research programs, such as Bridging the Gap, elucidate important links to needed solutions.

Several papers in this supplement to the *American Journal of Preventive Medicine* point to widespread environmental attributes that may be "obesogenic" for low-income and/or ethnic minority youth. The proportion of high-calorie–low-nutrient–density school food choices and fast-food restaurants was found to be higher in communities with higher poverty rates, lower household median incomes, and higher concentrations of ethnic minority residents.[7,8] Exposure to food-related television advertising was found to be 60% greater among African-American children, with fast food as the most frequent category, because of both targeted marketing and higher TV viewing rates.[9] In schools, lower rates of participation in varsity and intramural sports were observed among female, racial/ethnic minority and lower-income students, while revenues from "pouring rights" contracts and soft drink availability were highest in schools with proportionately more Latinos.[10,11] The contribution of under-resourced school environments to obesity is underscored by the finding that school SES and racial/ethnic composition are inversely correlated with body mass index (BMI) even after controlling for individual race/ethnicity and SES.[12]

Taken together, these studies tell a story about the ways in which the lives of children in ethnic minority and low-SES communities differ from those of other children. The findings point to reasons for the less favorable status of children in these communities on the established behavioral determinants of obesity—fruit and vegetable consumption, fast-food intake, breakfast frequency, soft drink and low-nutrient–density snack intake, television watching, sleep, physical activity frequency and intensity, sports participation, and time spent outdoors. But understanding the key lessons in this story is more complicated than these descriptive data reflect. When we ask **why** the environments of minority and low-income children are relatively less conducive to healthy eating and physical activity, we confront the all-too-familiar reality that people who are socially and politically disadvantaged with respect to the larger social structure are, in fact, socially and politically disadvantaged in many respects. We discover that food availability, food advertising, school policies, recreational facilities, and opportunities for safe, affordable, physical activity—environmental factors that directly and indirectly influence health and survival—are not exempt from the forces of racial or ethnic and economic stratification and that, in fact, they may help to define it.[13] The effective cost, economically and behaviorally, of healthy eating and active living is higher and the feasibility lower, in low-income or ethnic minority communities compared to others.

For example, crime rates and perceptions of danger are higher in low-income neighborhoods.[14] Unsafe neighborhoods deter walking to school and playing outdoors after school, at home, or in parks.[15] Less time spent outdoors not only displaces physical activity but also increases television viewing and, thereby, exposure

From the Department of Health Services (Yancey), Center to Eliminate Health Disparities, University of California Los Angeles, School of Public Health, Los Angeles, California; Department of Biostatistics and Epidemiology (Kumanyika), University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania

Address correspondence and reprint requests to: Antronette K. Yancey, MD, MPH, Professor, Department of Health Services, and Co-director, Center to Eliminate Health Disparities, UCLA School of Public Health, 650 Charles Young Drive South, Rm 31-235 CHS, Los Angeles CA 90095. E-mail: ayancey@ucla.edu.

0749-3797/07/$–see front matter
doi:10.1016/j.amepre.2007.07.013

to ethnically targeted commercials for fast food and fatty and/or sugary snacks. Neighborhood noise and discord, and the distress they produce, also may disrupt sleep. Low-income families with high costs for housing and other necessities may have little money left over to buy food.[16,17] Such financial challenges may promote reliance on inexpensive, but high-calorie food. Fast-food restaurants are much more accessible than full-service ones, just as convenience stores that sell high-calorie packaged or prepared foods are more prevalent than chain supermarkets that offer a healthier mix of foods including fresh fruits and vegetables. Longer working hours and commuting times may absorb precious parenting resources needed to shop for and prepare food, transport children to extracurricular active recreation, and pay registration fees and equipment costs.[15]

Environmental constraints limit choices, but the perceived range of choices and ability to find alternatives increase as economic and social capital increase.[18] Therefore, people with the most limited choices are also the most constrained by their immediate environments. This could mean that changes in the environment would have a bigger payoff for the highest-risk populations and, indeed, this is sometimes the case. For example, it was noted that lowering the price of fruit produced greater increases in consumption among students in an urban, socioeconomically and racially diverse school than among those in a suburban, middle-income, primarily white school.[19] On the other hand, to the extent that people—particularly in populations undergoing chronic ecologic stress—have adapted to their circumstances, isolated environmental changes cannot be expected to break longstanding eating and physical activity patterns conditioned by functioning and survival in generally adverse contexts. This is especially relevant when the very attitudes and behaviors targeted for change are those identified with heavily commercially marketed social status or prestige, important traditions, or emotional satisfaction. Cars are status symbols, with public transportation or walking only for those who can't afford cars. Being able to treat your children to a meal at a popular fast-food restaurant may be more meaningful to parents who have to work harder to afford this. Getting enough rest to recover from the stresses of the day may be seen as more important than going out to exercise.[20] Large heavy meals at church or celebrations may form the core of family or social interactions. High-fat and high-calorie "soul foods," for example, although part of the legacy of slavery, have taken on positive cultural connotations and help to define African-American ethnic identity.[21] In addition, some health advice perceived as coming from the majority culture may be met with distrust generalized from experiences with discrimination in other realms.[22]

In this sense, models for policy and environmental interventions that improve food intake and physical activity in the population at large may be too weak or insufficiently focused to curtail the obesity epidemic in African-American, Latino, or Native-American children. Even worse, one can imagine that efforts to attack obesity-promoting forces in the population at large may aggravate the situation in minority communities. For example, the targeted marketing of high-calorie, low-nutrient–density foods to black television audiences[23,24] might be aggravated by a decreasing demand for such foods in the general market, much as the tobacco industry has shifted its marketing efforts to ethnic minority communities domestically and to developing countries internationally.[25]

It is critical that findings such as those in this supplement be used to motivate studies within minority and low-income communities of how to create environments that support favorable health outcomes. How do we focus the thinking and priorities of key decision makers and gatekeepers at the systemic or structural level rather than at the more customary and seemingly more manageable individual level? How, particularly, do we make it easier in populations of color or low-SES communities to make the healthy choice and harder to make the unhealthy one, without making life harder or less satisfying? Applied intervention research can elucidate how people in high-risk communities actually are interacting with their environments so that the "mechanisms of action" of obesity-promoting factors can be better understood. In addition, and most critically for advancing solutions, future research can identify ways in which existing strengths and assets in minority and low-income communities can be leveraged to engender the social changes that are needed.[26] Embedding the collectivist values characterizing most communities of color in family-directed versus individually-directed intervention approaches, for instance, has improved recruitment, adherence, and retention among Latina mothers.[27]

Which changes will be most effective in reducing disparities is uncertain. Obviously, to be effective, changes must extend far beyond the settings frequented by youth, into many societal sectors.[2,28,29] Opportunities and options do not translate into behavior at an individual level unless the relevant cultural values and social norms support and embrace these actions. Nor do policy mandates manifest in institutional implementation unless organizational leadership, incentives, and resources align. Even capturing the data necessary to assess progress can be challenging, given the need for sufficient sample size to examine key issues with attention to gender, SES, and other sources of diversity **within** ethnic minority and low-income populations. These challenges must begin to be addressed by well-funded, broad-based solution-focused research[30] that builds upon these studies, in order to ensure that the promise of the Bridging the Gap initiative is fulfilled.

The authors wish to thank Dr. Christiaan Morrsink for his editorial assistance, and Danielle Osby for her assistance in preparing this manuscript for submission.

No financial disclosures were reported by the authors of this paper.

References

1. Freedman DS, Khan LK, Serdula MK, Ogden CL, Dietz WH. Racial and ethnic differences in secular trends for childhood BMI, weight, and height. Obesity (Silver Spring) 2006;14:301–8.
2. Institute of Medicine (IOM). Progress in preventing childhood obesity: how do we measure up? Washington DC: National Academies of Sciences, 2006.
3. IOM Committee on Prevention of Obesity in Children and Youth. Preventing childhood obesity: health in the balance. Washington DC: National Academies Press, 2005.
4. Ogden CL, Carroll MD, Curtin LR, Macdowell MA, Tabak CJ, Flegal KM. Prevalence of overweight and obesity in the United States, 1999–2004. JAMA 2006;295:1549–55.
5. Slusser WM, Neumann CG, Cumberland WG, Browdy BL. Overweight in urban, low-income, African-American and Hispanic children attending Los Angeles elementary schools: research stimulating action. Public Health Nutr 2005;8:141–8.
6. Urrutia-Rojas X, Menchaca J. Prevalence of risk for type 2 diabetes in school children. J Sch Health 2006;7:189–94.
7. Delva J, O'Malley PM, Johnston LD. Availability of more-healthy and less-healthy foods in American schools: A national study of grade, racial/ethnic, and socioeconomic differences. Am J Prev Med 2007;33(4S):S226–S239.
8. Powell LM, Chaloupka FJ, Bao Y. The availability of fast-food and full-service restaurants in the United States: associations with neighborhood characteristics. Am J Prev Med 2007;33(4S):S240–S245.
9. Powell LM, Szczypka G, Chaloupka FJ. Adolescent exposure to food advertising on television. Am J Prev Med 2007;33(4S):S251–S256.
10. Johnston LD, Delva J, O'Malley PM. Sports participation and physical education in American secondary schools: current levels and racial/ethnic and socioeconomic disparities. Am J Prev Med 2007;33(4S):S195–S208.
11. Johnston LD, Delva J, O'Malley PM. Soft drink availability, contracts, and revenues in American schools. Am J Prev Med 2007;33(4S):S209–S225.
12. O'Malley PM, Johnston LD, Delva J, Bachman JG, Schulenberg JE. Variation in obesity among American secondary school students by school and school characteristics. Am J Prev Med 2007;33(4S):S187–S194.
13. Kumanyika S, Grier S. Targeting interventions for ethnic minority and low-income populations. Future Child 2006;16:187–207.
14. Loukaitou-Sideris A, Eck JE. Crime prevention and active living. Am J Health Promot 2007;21(4 Suppl):380–389, iii.
15. Day K. Active living and social justice: planning for physical activity in low-income, black, and Latino communities. J Am Planning Assoc 2006; 72:88–99.
16. Bhattacharya J, DeLeire T, Heider S, Currie J. Heat or eat? Cold-weather shocks and nutrition in poor American families. Am J Public Health 2003; 93:1149–54.
17. Karp RJ, Cheng C, Meyers AF. The appearance of discretionary income: influence on the prevalence of under- and over-nutrition. Int J Equity Health 2005;4:10.
18. Cockerham WC, Rutten A, Abel T. Conceptualizing contemporary health lifestyles: moving beyond Weber. Sociol Q 1997;38:321–42.
19. French SA, Story M, Jeffery RW, et al. Pricing strategy to promote fruit and vegetable purchase in high school cafeterias. J Am Diet Assoc 1997;97: 1008–10.
20. Airhihenbuwa CO, Kumanyika S, Agurs TD, Lowe A. Perceptions and beliefs about exercise, rest, and health among African-Americans. Am J Health Promot 1995;9:426–9.
21. Airhihenbuwa CO, Kumanyika S, Agurs TD, Lowe A, Saunders D, Morssink CB. Cultural aspects of African American eating patterns. Ethn Health 1996;1:245–60.
22. McGary H. Distrust, social justice, and health care." Mt Sinai J Med 1999; 66:236–40.
23. Henderson VR, Kelly B. Food advertising in the age of obesity: content analysis of food advertising on general market and African American television. J Nutr Educ Behav 2005;37:191–6.
24. Balbach ED, Gasior RJ, Barbeau EM RJ. Reynolds' targeting of African Americans: 1988–2000. Am J Public Health 2003;93:822–7.
25. Connolly GN. Worldwide expansion of transnational tobacco industry. J Natl Cancer Inst Monogr 1992;(12):29–35.
26. Yancey AK, Ory MG, Davis SM. Dissemination of physical activity promotion interventions in underserved populations. Am J Prev Med 2006;31(4S): 82–91.
27. Yancey AK, Ortega AN, Kumanyika SK. Effective recruitment and retention of minority research participants. Annu Rev Public Health 2006;27:1–28.
28. Breslow L. Why health promotion lags knowledge about healthful behavior. Am J Health Promot 2001;15:388–90.
29. Lobstein T. Comment: preventing child obesity—an art and a science. Obes Rev 2006;7(suppl 1):1–5.
30. Robinson TN, Sirard JR. Preventing childhood obesity: a solution-oriented research paradigm. Am J Prev Med 2005;28(2S):S194–201.