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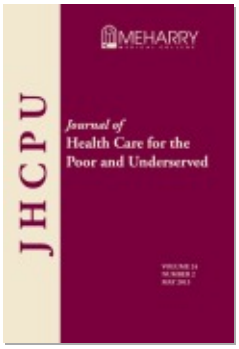

The Health Promise of Promise Neighborhoods

Christopher Masi, MD, PhD

Abstract: The Promise Neighborhoods initiative from the U.S. Department of Education offers grant funding to develop innovative educational and community support programs in distressed communities. Inspired by the success of the Harlem Children's Zone (HCZ), this initiative encourages similarly pioneering approaches to assist low-income children attain academic and social success. An increasing body of evidence suggests that health benefits accrue when youth are immersed in nurturing educational environments. This article summarizes key evidence for this phenomenon, as well as theories that suggest that Promise Neighborhoods can have as great an effect on health as they do on educational achievement.

Key words: Education, health, disparities, neighborhood, preschool.

Inspired by the academic success of children in the Harlem Children's Zone (HCZ), the U.S. Department of Education developed the Promise Neighborhoods initiative in 2010 to improve the educational opportunities of children in distressed communities. Of the 340 applicants in 2010, 21 were awarded one-year planning grants. In 2011, the Department received 662 letters of intent to submit applications: 501 for planning grants and 161 for three-to-five year implementation grants.[1] The large number of applicants over the past two years suggests significant interest in developing programs similar to those in the HCZ. While academic success is the primary goal of the Promise Neighborhoods initiative, an increasing body of evidence suggests that placing youth in nurturing educational environments leads to downstream health benefits as well. It is therefore important that emerging Promise Neighborhoods monitor not only academic achievement but also short- and long-term health outcomes.

The Harlem Children's Zone

The HCZ was created by longtime Harlem resident, Geoffrey Canada, to assist low-income children in making successful transitions to independent, healthy adulthood.[2] In 2000, central Harlem had significant socioeconomic challenges, including a median household income of $21,508, a 36% poverty rate among all residents, and a 66% high-school completion rate among adults.[3] Despite these obstacles, HCZ has achieved success through innovative programs that support children from conception through high

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school. These programs include a Baby College for expectant parents; Harlem Gems for pre-kindergarteners; the Promise Academy elementary, middle, and high schools; academic case management; and a health clinic in the Promise Academy middle school. The HCZ also includes community supports, such as the Family Development Program for mental health needs, the Family Support Center for crisis intervention, the Asthma Initiative, and the Obesity Initiative.[4]

Two of the HCZ's earliest programs were the Promise Academy kindergarten and middle schools. After conducting a lottery to determine which children would be admitted to these charter schools, each school began with one class in the fall of 2004. The ethnic mix of each class was 90% African American and 10% Hispanic.[2] By the end of their first year in the Promise Academy middle school in 2005, only 21% of sixth graders scored at or above grade level on the state English test and only 9% scored at or above grade level on the state math test.[2] By 2007, after three years in the middle school, 33% of the eighth graders scored at or above grade level in English and 70% scored at or above grade level in math.[2] Academic progress was even more impressive among the first cohort of kindergartners. When they took standardized tests in 2005, 64% scored below the national average in reading and only 36% scored above the national average in math. After three years in the Promise Academy, 93% tested at or above grade level in English and 100% tested at or above grade level in math, outperforming their third grade peers in the school district, city, and state.[5] Other academic programs, including the Knowledge is Power Program (KIPP) schools, have achieved similar success, but the HCZ is unique in its emphasis on early childhood development and its commitment to retaining students with behavioral issues.[2]

The Health Benefits of Preschool

The idea that early childhood education can improve long-term health is supported by prospective studies of interventions among low-income children. For example, the Perry Preschool experiment enrolled 123 three- and four-year-olds from Ypsilanti, Michigan in five waves between 1962 and 1967.[6] Children randomized to the intervention group participated in daily two-and-a-half hour classroom sessions on weekday mornings and weekly ninety-minute home visits by a teacher on weekday afternoons for 30 weeks in each of two years. Another intervention, the Chicago Child-Parent Center (CPC) and Expansion Program provided nine months of half-day preschool to over 900 low-income three- and four-year-olds beginning in 1967.[6] The CPC included health and social services, free meals, and parental assistance to facilitate school visits, home visits, and field trips. The CPC used a quasi-experimental design that included a comparison group of over 500 children matched on age, eligibility for intervention, and family socioeconomic status (SES).

Long-term follow-up indicates both interventions resulted in significant academic, economic, and health benefits. Of the original Perry participants, over 90% were interviewed at age 40. Compared with controls, those in the intervention group were more likely to be employed, to have higher incomes, and to be married. They were also less likely to experience teen pregnancy or utilize welfare benefits.[7,8] Similarly, over 90% of the original CPC participants were interviewed at age 24. Compared with the com-

parison group, those in the intervention group had lower rates of both substance abuse and depressive symptoms.[9] Those in the intervention group were also more likely to have either private or public health insurance and were less likely to have committed a crime.[9] Analysis of future earnings, crime rates, and social service usage indicates a cost-benefit ratio of 1:9 for the Perry program and 1:8 for CPC.[8]

A similar preschool program, the Abecedarian Project in Chapel Hill, N.C.,[10] was also associated with improved health later in life. Specifically, 105 of the original 111 participants were interviewed at age 21 and those in the intervention group had better composite scores on both health and health behaviors compared to controls. The health score reflected depression, overall health problems, and hospitalizations while the health behaviors score reflected seat belt use, drinking and driving, having a primary care physician, cocaine use, early use of alcohol, binge drinking, cigarette use, and marijuana use.[11]

Theories of Health Benefit

Economists such as James Heckman and others have argued that adolescent and adult health improves when individuals are exposed to supportive educational environments early in life.[12] They contend that such environments, which include high-quality instruction, supportive home and social experiences, and food security, enhance the development of cognitive and non-cognitive skills (including emotional security, motivation, risk aversion, self-esteem, and self-control), which are integral to long-term health.[12] Heckman argues that early academic and social success yields health benefits through "self-productivity" and "dynamic complementarity."[12] *Self-productivity* is a term for the positive effects of early education, which are thought to be self-reinforcing and cross-fertilizing. For example, emotional security can foster child exploration and more vigorous learning of cognitive and non-cognitive skills, which then serve as the foundation for additional enhancement of these skills. *Dynamic complementarity* is a term emerging from the view that capabilities developed early in life enhance the impact of educational investment later in life. These theories have at least two implications. The first is that the earlier a child is exposed to a nurturing social and educational environment, the greater the health impact that environment will have over the life-course. This may explain why the increases in standardized test scores among the third grade Promise Academy students was stellar while improvements among the eighth grade students was not quite as impressive. It may also explain the limited ability of adult education programs to enhance cognitive and non-cognitive skills.[12]

The second implication of Heckman's theories is that educational differences in childhood may contribute to SES-related health disparities later in life. Specifically, children who do not grow up in nurturing educational environments may not develop the cognitive and non-cognitive skills essential for optimal health. Cognitive skills affect health through health literacy, health behaviors, medication adherence, and decision-making.[13] Non-cognitive skills, such as perseverance, motivation, time preference, and self-esteem also influence health, possibly by permitting individuals to manage stress more effectively, follow medical advice, and care for themselves in the presence of illness or obstacles to health.[12] Differences in cognitive and non-cognitive skills may therefore

mediate the established inverse relationship between childhood SES and illness later in life.[14] Further studies are needed to test this notion, however.

Measuring Academic and Health Outcomes

Applicants who receive Promise Neighborhoods grants are expected to improve the day-to-day experiences of youth in distressed communities through novel educational, family, and community supports.[1] Currently, most of the outcomes reported by the HCZ are related to academic performance. If Heckman's ideas about early education are correct, HCZ and the emerging Promise Neighborhoods may enhance health as well as academic performance. As a result, Promise Neighborhoods grantees should monitor health metrics as closely as they measure academic achievement.

Both process and outcome health measures should be assessed. For process measures among young students, emphasis should be placed on the proportion who have primary care physicians, who are up-to-date with immunizations, and who are at their recommended weight. Among high school students, the Youth Risk Behavior Surveillance System (YRBSS) can be used to assess behaviors that contribute to unintentional injuries and violence, tobacco use, alcohol and other drug use, sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, unhealthy dietary behaviors, and physical inactivity.[15] For outcome measures, younger students can complete the Peds QL, which assesses physical, emotional, social, and school functioning[16] while high school students can be queried using the National Longitudinal Study of Adolescent Health survey, which measures physical and mental health outcomes.[17] For those who are followed into adulthood, the SF-36 can be used to monitor physical, mental, and emotional health outcomes.[18]

While improved health may not be the primary goal of the Promise Neighborhoods initiative, documenting improved health and lower health care costs may be the strongest argument for continued support of this program. Analysis of the Perry, CPC, and Abecedarian preschool experiments suggests that such programs can have significant health benefits. However, replicating the short- and long-term benefits of those programs will be needed to convince cash-strapped funders, including the federal government, that investment in early childhood education can be an effective strategy to improve health and control rising health care costs. Both the educational and health benefits of Promise Neighborhoods may be significant. It would be a shame to focus on the former and ignore the latter at a time when both education and health care desperately need attention.

Notes

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