ENCYCLOPEDIA on Early Childhood Development

Low Income and Its Impact on Psychosocial Child Development

[1]Michael Weitzman, MD, [2]Lily Lee

[1,2]New York University School of Medicine and [1]College of Global Public Health, USA & [2]Blooklyn College, USA

February 2017, 2e éd. rév.

Introduction

There is a voluminous body of literature to support the theory that family poverty adversely affects children's health, intellectual capabilities, academic achievement, and behaviour.[1-32] By contrast, a growing body of literature has demonstrated how various policies and interventions can attenuate poverty’s negative influence on child development.[33-58]

Subject

Most research in this field has focused on the following:

a. Examining statistical linkages between family poverty and psychosocial development in children
b. Adjusting these linkages for confounding factors
c. Identifying the mechanisms by which poverty exerts its negative influence

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d. Determining which clinical and public policy interventions are most likely to attenuate poverty's deleterious effects on children's psychosocial development.

Problems

The key problems in this area of investigation are as follows:

a. Determining the mechanisms and pathways by which poverty produces negative effects
b. Separating the effects of family poverty from the effects of living in impoverished communities
c. Distinguishing between the effects of poverty and its many associated confounders
d. Establishing the extent to which the intensity and duration of poverty respectively affect negative child psychosocial development
e. Identifying the long-term beneficial effects of policies and programs designed to attenuate poverty's negative effects on children.

Research Context

Research in this area has included cross-sectional and longitudinal observational studies on the effects of poverty, as well as the randomized assignment and investigation of short-term and (more importantly, but more difficult to ascertain) long-term outcomes of intervention. Obviously, the nature of the problem precludes the random assignment of test subject groups to conditions of poverty vs. non-poverty conditions, and animal studies cannot be used to corroborate, expand upon, or explicate findings from epidemiological studies.

Key Research Questions

The key research questions in this area are as follows:

a. What are the mechanisms and pathways by which poverty exerts a negative effect on child psychosocial development?
b. What programs and policies attenuate poverty's negative effects on child psychosocial development?

Recent Research Results

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Among the major confounders and pathways by which poverty exerts a negative influence on child psychosocial development, we found:

- community factors, such as schools, neighbourhoods, peer influences, paucity of job opportunities, cost of food and other essentials, and exposure to stress and violence;[16,36,38]
- single-parent households (the feminization of poverty, as well as the adverse psychosocial effects of divorce and of having only one adult oversee activities, day-in and day-out);
- young maternal age at birth of child;
- low maternal education;[2,3,7,15]
- increased family size;
- breastfeeding;
- maternal depression;[17,22,51]
- paternal depression;[31,32]
- obesity;[30]
- smoking,[21] and secondhand smoke exposure;[57]
- an authoritarian parenting style;
- lead poisoning in children;[54,55]
- frequent family moves, and or homelessness;
- low birthweight,[2,3,7,10,13,14] its complications and treatments, including the use of corticosteroids to prevent bronchopulmonary dysplasia;[5]
- undernutrition (or more generally, food insecurity),[9,24,27,28] failure to thrive (failure to gain weight at the anticipated rate during the first two years of life), and iron deficiency;[11,24,27,28]
- increased prevalence and severity of chronic health problems, such as asthma;[19,20]
- parental or adolescent incarceration;[29]
- psychoactive drug use, such as opiods;[26]
- post traumatic stress disorder.[25,58]

The neurocognitive effects of lead poisoning, of failure to thrive, and possibly, of iron deficiency and other early health problems in children appear to be largely or totally irreversible. All of

these factors build a strong case for instituting effective primary prevention strategies. Moreover, underprivileged children with low birthweight[18] and lead poisoning[54,55] appear to suffer from greater cognitive impairments than do low birthweight, lead-poisoned children from more economically privileged families. Indeed, these findings may apply to the effects of other chronic conditions as well.

Poverty has been shown to be independently associated with lower IQ;[2] early school failure, school retention, suspension, and dropout;[3] increased rates of behaviour problems;[7] and lack of access to mental health services when faced with behaviour problems. To date, associations between poverty, diminished intellectual capabilities and academic achievement have been more robustly demonstrated than have associations between poverty, increased rates of behaviour problems and mental health problems.[2] Also, long-term poverty is more damaging than short-term poverty, and poverty that occurs during infancy and preschool years appears to be more damaging than poverty experienced later in childhood.[2] Recent studies suggest that growing up in poverty leads to systematic changes in brain development. These changes involve the prefrontal cortex and affect so-called executive functions, such as self-regulation, planning, and emotional control.[51]

Evidence suggests that many clinical and public policies are effective in addressing factors associated with poverty that impair children's development. These policies include the provision of early intervention programs,[33-37,40,41,50] especially publicly funded, centre-based, and comprehensive early child development programs. These kind of programs have been shown to be effective in preventing developmental delay, improving grade retention and accelerating placement into special education. Nutrition support programs, such as food support programs for pregnant women and infants, and school nutrition programs, such as the school breakfast program, have been shown to reduce rates of low birthweight,[39] iron deficiency,[48,49,52] and school underachievement.[42] Nurse home visitation has been associated with improvements in various measures of the quality of the home environment and in child development outcomes.[44] They have been shown to reduce adverse maternal health-related behaviour and improve low birthweight, children's developmental status, and parental interaction with children.[52] Bright Future, created by the American Academy of Pediatrics, provides clinicians with guidelines and recommendations to support quality preventive care at all stages of childhood.[53,56] Housing subsidy programs for low-income families that provide rental vouchers for use in the private housing market allow families greater choice in where they choose to live, resulting in improved

neighbourhood safety and reduced exposure to violence.[36]

Conclusion

A large body of research has demonstrated the deleterious effects of family poverty on the multiple aspects of child psychosocial development. But while multiple pathways and confounders of poverty's influence on child development have been identified, much remains unknown. Moreover, the literature demonstrates the proven or likely benefits of public policies and clinical practices in the psychosocial development of children growing up in poverty.

Implications for Policy and Services

Interventions with demonstrated effectiveness for children in poverty include:

a. (USA) Head Start and early intervention programs for ex-premature babies and physically healthy preschoolers from low-income families. Policies that increase participation in and the quality of such services are likely to have beneficial effects on child development.
b. Food supplementation programs such as the (USA) Women, Infants and Children's Program (WIC) have been shown to reduce low birthweight and iron deficiency, and school nutrition programs, such as the school breakfast program, have been shown to improve scores on standardized tests of academic achievement.
c. Nurse home visitation has been shown to result in improvements in multiple measures of the quality of home environments.
d. Housing subsidy programs result in improved neighbourhood safety and reduced exposure to violence.
e. Policies that diminish children's exposure to lead-contaminated house dust promote healthy development.

While we have found no studies to corroborate the efficacy of the following services and policies in improving the psychosocial functioning in children, we contend that they are likely to have a variety of positive effects on child development:

a. Housing policies that diminish frequent moves for families or the homelessness of children benefit children physically and psychologically.

b. Smoking cessation services for pregnant women and parents, increased taxes on cigarettes, and bans on smoking in public areas, all reduce children's prenatal and passive exposure to tobacco smoke, which appears to be a potent neurotoxicant.

c. Improved access to quality health care is likely to have significant positive effects on the overall development of low-income children.

d. Improved integration of health and other child and family services ensures continuity in care. Often, the only human service sector that regularly interacts with low-income parents and their children in the early years of children's lives is the primary medical care system. Developing better clinical approaches and systems of care that result in early identification, triage, referral, and treatment of chronic physical health, nutrition, and developmental problems is likely to improve children's development.

e. Services aimed at the identification and treatment of parental depression and other mental health problems are likely to improve the mental health of both the parents and their children.

References

1. Baydar N, Brooks-Gunn J, Furstenberg FF Jr. Early warning signs of functional illiteracy: predictors in childhood and adolescence. *Child Development* 1993;64(3):815-829.
2. Brooks-Gunn J, Duncan GJ. The effects of poverty on children. *Future of Children* 1997;7(2):55-71.
3. Byrd RS, Weitzman ML. Predictors of early grade retention among children in the United States. *Pediatrics* 1994;93(3):481-487.
4. Children's Defense Fund (US). *Wasting American's future: the Children's Defense Fund report on the costs of child poverty*. Boston, MA: Beacon Press; 1994.
5. American Academy of Pediatrics Committee on Fetus and Newborn and the Canadian Paediatric Society Fetus and Newborn Committee, Postnatal corticosteroids to treat or prevent chronic lung disease in preterm infants. *Pediatrics* 2002;109(2):330-338.
6. Duncan GJ, Brooks-Gunn J, eds. *Consequences of growing up poor*. New York, NY: Russell Sage Foundation; 1997.
7. Duncan GJ, Brooks-Gunn J, Klebanov PK. Economic deprivation and early childhood development. *Child Development* 1994;65(2):296-318.
8. Goldberg D, Failure of birth data to predict early school difficulties among inner-city first graders. *Bulletin of the New York Academy of Medicine* 1995;72(1):153-154.
9. Gortmaker SL, Walker DK, Weitzman M, Sobol AM. Chronic conditions, socioeconomic risks, and behavioral problems in children and adolescents. *Pediatrics* 1990;85(3):267-276.
10. Gross D, Conrad B, Fogg L, Willis L, Garvey C. A longitudinal study of maternal depression and preschool children's mental health. *Nursing Research* 1995;44(2):96-101.

11. Hack M, Breslau N, Aram D, Weissman B, Klein N, Borawski-Clark E. The effect of very low birth weight and social risk on neurocognitive abilities at school age. *J Dev Behav Pediatr* 1992;13(6):412-420.

12. Halterman JS, Kaczorowski JM, Aligne CA, Auinger P, Szilagyi PG. Iron deficiency and cognitive achievement among school-aged children and adolescents in the United States. *Pediatrics* 2001;107(6):1381-1386.

13. Hertzman C. Population health and child development: a view from Canada. In: Income, socioeconomic status, and health: exploring the relationships. Auerbach JA, Krimgold BK, eds. Washington, D.C.: National Policy Association: Academy for Health Services Research and Health Policy; 2001:44-55.

14. Hollomon HA, Scott KG. Influence of birth weight on educational outcomes at age 9: the Miami site of the Infant Health and Development Program. *J Dev Behav Pediatr* 1998;19(6):404-410.

15. Klerman L. Alive and well: a research and policy review of health programs for poor young children? New York, NY: National Center for Children in Poverty, Columbia University School of Public Health; 1991.

16. Korenman S, Miller JE, Sjaastad JE. Long-term poverty and child development in the United States: results from the NLSY. *Children & Youth Services Review* 1995; 17(1-2):127-155.

17. Leventhal T, Brooks-Gunn J. The neighborhoods they live in: the effects of neighborhood residence on child and adolescent outcomes. *Psychol Bull* 2000;126(2):309-337.

18. Smith JR, Brooks-Gunn J, Klebanov PK. Consequences of living in poverty for young children's cognitive and verbal ability and early school achievement. In: Consequences of growing poor. Duncan GJ, Brooks-Gunn J, eds. New York, NY: Russell Sage Foundation; 1997:132-189.

19. Weitzman M, Byrd RS, Auinger P. Children in big cities in the United States: health and related needs and services. *Ambulatory Child Health* 1996;260(4):106-111.

20. Weitzman M, GortmakerD, Sobol A. Racial, social, and environmental risks for childhood asthma. *Am J Dis Child* 1990;44(11):1189-1194.

21. Weitzman M, et al. Maternal smoking and childhood asthma. *Pediatrics* 1990;85(4):505-511.

22. Grantham-McGregor S. A review of studies of the effect of severe malnutrition on mental development. *Journal of Nutrition* 1995;125(suppl 8):2233S-2238S.

23. Pyhala R, et al. Neurocognitive abilities in young adults with very low birth weight. *Neurology* 2011;77(23):2052-60.

24. Burke MP, et al., Severity of Household Food Insecurity Is Positively Associated with Mental Disorders among Children and Adolescents in the United States. *J Nutr*, 2016. 146(10): p. 2019-2026.

25. Chemtob CM, Gudino OG, Laraque D. Maternal posttraumatic stress disorder and depression in pediatric primary care: association with child maltreatment and frequency of child exposure to traumatic events. *JAMA Pediatr* 2013;167(11):1011-1018.

26. Dunn MG, et al. Origins and consequences of child neglect in substance abuse families. *Clinical Psychology Review*, 2002;22(7):1063-1090.

27. Meyers AF, Karp RJ, Kral JG. Poverty, food insecurity, and obesity in children. *Pediatrics*, 2006;118(5):2265-2266.

28. Whitaker RC, Phillips SM, Orzol SM. Food insecurity and the risks of depression and anxiety in mothers and behavior problems in their preschool-aged children. *Pediatrics* 2006;118(3):e859-e868.

29. Wilbur MB, et al. Socioemotional effects of fathers' incarceration on low-income, urban, school-aged children. *Pediatrics* 2007;120(3):e678-e685.

30. Pan L, et al. Incidence of obesity among young U.S. children living in low-income families, 2008-2011. *Pediatrics*, 2013;132(6):1006-1013.

31. Tichovolsky, M.H., et al., A Longitudinal Study of Fathers' and Young Children's Depressive Symptoms. *J Clin Child Adolesc Psychol*, 2016: p. 1-15.

32. Weitzman M, Rosenthal DG, Liu YH. Paternal depressive symptoms and child behavioral or emotional problems in the United States. *Pediatrics* 2011;128(6):1126-1134.

33. Anderson LM, et al. Community interventions to promote healthy social environments: early childhood development and family housing. A report on recommendations of the Task Force on Community Preventive Services. *MMWR Recomm Rep.* 2002;51(Rr-1):1-8.

34. Barnett WS, Escobar CM. Research on the cost effectiveness of early educational intervention: implications for research and policy. *Am J Community Psychol*, 1989;17(6):677-704.

35. Berlin LJ, et al. The effectiveness of early intervention: examining risk factors and pathways to enhanced development. *Prev Med* 1998;27(2): 238-245.

36. Brooks-Gunn J, et al. Early intervention in low-birth-weight premature infants. Results through age 5 years from the Infant Health and Development Program. *Jama*, 1994;272(16):1257-1262.

37. Currie J, Early childhood education programs. *Journal of Economic Perspectives* 2001;15(2):213-238.

38. Devaney BL, Ellwood MR, Love JM. Programs that mitigate the effects of poverty on children. *Future Child* 1997;7(2):88-112.

39. Karoly LA, et al. Investing in our children: what we know and don't know about the costs and benefits of early childhood interventions. Santa Monica, CA: Rand; 1998.

40. Kotelchuck M, et al. WIC participation and pregnancy outcomes: Massachusetts Statewide Evaluation Project. *Am J Public Health*, 1984;74(10):1086-1092.

41. Lee VE, et al. Are Head Start effects sustained? A longitudinal follow-up comparison of disadvantaged children attending Head Start, no preschool, and other preschool programs. *Child Dev* 1990;61(2):495-507.

42. McLellan F. Countering poverty's hindrance of neurodevelopment. *Lancet* 2002;359(9302):236.

43. Meyers AF, et al. School Breakfast Program and school performance. *Am J Dis Child*, 1989;143(10):1234-1239.

44. National Research Council Division of Behavioral Social, S.E. *Early Childhood Development and Learning: New Knowledge for Policy*. Washington (DC): National Academies Press (US); 2001.

45. Rush D, et al. The National WIC Evaluation: evaluation of the Special Supplemental Food Program for Women, Infants, and Children. VII. Study of food expenditures. *Am J Clin Nutr* 1988;48(2 Suppl):512-519.

46. Schweinhart LJ, Barnes HV, Weikart DP. *Significant benefits: The High/Scope Perry Preschool Study through age 27. Vol. 10.* Ypsilanti, MI: The High/Scope Press, Educational Research Foundation; 1993.

47. Shonkoff JP, Phillips DA. From neurons to neighborhoods: the science of early child development. Washington, D.C.: National Academy Press; 2000.

48. Shumacher R, Greenberg M, Lombardi J. State initiatives to promote early learning: next steps in coordinating subsidized child care, Head Start, and state prekindergarten. Policy Brief. Center for Laws and Social Policy; 2001.

49. Vazquez-Seoane P, Windom R, Pearson HA. Disappearance of iron-deficiency anemia in a high-risk infant population given supplemental iron. *N Engl J Med* 1985;313(19):1239-1240.

50. Weitzman M, et al. The effects of tobacco exposure on children's behavioral and cognitive functioning: implications for clinical and public health policy and future research. *Neurotoxicol Teratol* 2002;24(3):397-406.

51. McCormick MC, et al. Early intervention in low birth weight premature infants: results at 18 years of age for the Infant Health and Development Program. *Pediatrics*, 2006. 117(3):771-780.

52. Olds DL, et al. Effect of home visiting by nurses on maternal and child mortality: results of a 2-decade follow-up of a randomized clinical trial. *JAMA Pediatr* 2014;168(9):800-806.

53. 2015 Recommendations for Preventive Pediatric Health Care Committee on Practice and Ambulatory Medicine and Bright Futures Periodicity Schedule Workgroup. *Pediatrics*, 2015.

54. AAP Council on Environmental Health. Prevention of Childhood Lead Toxicity. *Pediatrics* 2016;138(1):e20161493.

55. Centers for Disease Control and Prevention, Lead Poisoning in Young Children. Atlanta, GA.: CDC; 2005.

56. Duncan P. *Bright futures: guidelines for health supervision of infants, children, and adolescents. Vol. 3*. American Academy of Pediatrics: Elk Grove Village, IL; 2007.

57. Halterman JS, et al. Screening for environmental tobacco smoke exposure among inner-city children with asthma. *Pediatrics* 2008;122(6):1277-1283.

58. Kessler RC, et al. Associations of housing mobility interventions for children in high-poverty neighborhoods with subsequent mental disorders during adolescence. *JAMA* 2014;311(9):937-948.