Opening Session

Why the Environment Matters More for Children in Poverty

Chairperson: Joan Lombardi
Presenter: Kathleen McCartney

Summary

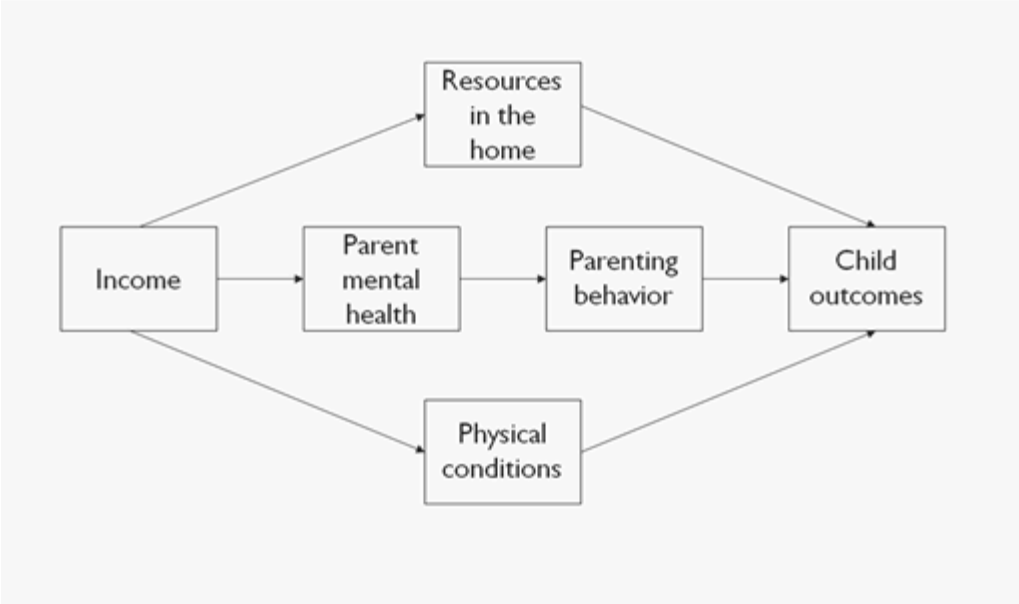
Head Start has focused on children living in poor families since the program's inception in 1965. During the past decade the population of children eligible by income status increased: nationwide, 19% of children live in poor families and 41% live in low-income families (families with less income than twice the federal poverty threshold). Furthermore, poverty rates are highest among the young children of the U.S., with 44% of those under 6 now living in low-income families (National Center for Children in Poverty, Nov. 2009). Research over the past several decades established the importance of poverty to early development by examining the developmental mechanisms linked to both family income and child outcomes (i.e., Richter, 2010).

McCartney and Berry (2009) established the notion of "functionally equivalent environments." This conceptualization suggests that, in spite of large differences in the actual environmental opportunities afforded children via schooling, community and family and cultural values, the majority of children will somehow use what is available in order to do well. Children generally do well across most environments. There is agreement, however, that not all environments are "functionally equivalent" and capable of contributing to development "because below some threshold there are insufficient opportunities for adequate, species-normal development to occur" (Scarr, 1993, p. 1338). Poverty and very low–income status often qualify as being below minimal threshold for optimum development. Environmental differences may "explain individual differences in developmental outcomes, but the effect is non–linear" (McCartney & Berry, 2009). Within any single given environmental context, genetic differences express themselves as children develop and move toward maturity.

As seen in the conceptual model presented in Figure 1, family income affects child outcomes in at least three ways, two direct and one a mediator. *Resources in the home*, such as books and the Internet, have direct

demonstrable effects, as do *physical conditions*, including safety and cleanliness of the home and immediate environment. A substantial body of research on parents demonstrates that parental mental health, which in turn affects parenting behavior, plays a mediating role in children's behavior and adjustment. Parental mental health problems are more prevalent in poor and low income families, and hence family health and living conditions are importantly linked to children's adjustment (McLeod and Shanahan, 1993).

Figure 1. Development Mechanisms Linking Income to Outcomes



From McCartney, Opening Session, Tenth Head Start Research Conference, June 2010, Washington, D.C.

How will quality of contexts interact with development to contribute to child outcomes? Careful review of the effects of child care centers identifies a differential effect for low-income versus middle-class families. "Children from low-income families benefit when they attend stimulating child care centers […] while children from more advantaged backgrounds do not consistently profit from child care in this way" (Lamb and Ahnert, 2006). These findings fit well with conclusions reached by Bronfenbrenner and Ceci (1994), which were concerned with heritability effects and socio-economic status (SES).

According to the Bronfenbrenner and Ceci bio-ecological model, heritability is the role in life-span development played by genetics. The role of heritability

increases as SES increases because experiences and resources encountered by higher SES children tend to support their genetic potential. However, the effects of heritability decrease as SES decreases because experiences encountered by children in lower SES environments do not support their genetic potential and, in fact, may undermine that potential. Exposure to the higher quality centers provides new resources for the low-income children: the genetic potential afforded by heritability is thereby approached. The higher quality centers are not necessarily an exceptional resource for the higher income children: they maintain the same high expression of their genetic potential. Thus, the title of this presentation is given further credibility: the environment matters more for children living in poverty.

This statement also receives confirmation from Turkheimer's IQ study (Turkheimer, Halay, Waldron, D'Onofrio & Gottesman, 2003). They found that the proportion of IQ variance attributable to heritability increased with increasing SES; while the role of 'shared environment' was higher at lower levels of SES.

There is good evidence based on a well-known national study that childcare quality and family income are both linked to academic achievement scores. Using data from the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (NICHD SECCYD), Dearing, McCartney and Taylor (2009) looked at the links of a family-income-to-needs measure to two academic indices: the Broad Math measure of quantitative performance and the Average Letter-Word measure of verbal performance from the Woodcock-Johnson PsychoEducational Battery-Revised (Woodcock & Johnson, 1989). Episodes of higher-quality care were then examined as a function of these school achievement measures (taken from third and fifth grades) and the family income-to-needs scale (the higher this number the better off the family's SES). The sample for the analyses included children who had a) 2 or more episodes of higher quality care or b) zero episodes of higher quality care.

Analyses considered the association between family income-to-needs and (a) Broad Math Scores and (b) Broad Reading Scores for children in either zero or two or more episodes of higher quality childcare during early childhood (Dearing, McCartney and Taylor, 2009). In both comparisons, it was evident that availability of two episodes of higher quality care was positively linked to academic achievement for children in families with low income-to-needs ratios but was not significantly linked for children in families with considerably higher income-to-needs ratios. Thus, again, low-income children appeared to benefit from exposure to high-quality childcare experience while higher income children, on average, performed well regardless of their child care experiences.

When one considers the importance of these theoretical notions, and the accompanying empirical evidence, to the Head Start children, one may draw from the recent volume by Zigler and Styfco (2009). To quote:

"Central to assessing Head Start's effectiveness is having a clear, realistic goal. In 1998 Congress decreed that improvements in children's school readiness is Head Start's goal. This is a worthy and achievable mission."

From where, then, can the Head Start community obtain a general framework and accompanying working principles that are based on the best theory and knowledge available today? One conceptual framework for early childhood education that is widely agreed upon has three basic tenets:

1. Gaps in student ability are already apparent by kindergarten
2. Education gaps are often difficult and costly to correct later on
3. Learning is cumulative - skill begets skill
   (Committee for Economic Development, 2006).

The value of supporting early childhood development can be demonstrated in multiple domains. An economist, David Deming (2009), using the National Longitudinal Survey of Youth, performed analyses on sibling pairs, one of whom reportedly participated in Head Start as a young child while the sibling had not. Through sophisticated data analyses, he found evidence that participation in Head Start was effective on several indices measured when the participants were young adults. Deming's data showed that Head Start closes about one-third of the gaps between young adults whose families were in the median quartile vs. in the bottom quartile of income during early childhood. Differences were reduced on such variables as high school graduation, college attendance, idleness (i.e., not in high school, no wages), criminal behavior, teen parenthood and health status. Deming's findings were previewed at the 2008 National Head Start Research Conference and received considerable attention.

Head Start's four and a half decades of providing programs for low-income families directly influences wide-ranging policy in the key domains of early childhood: health and health care, nutrition, family support, and educational opportunities for low-income people and preschool age children. Barnett and Hustedt (2003) make a strong case for the benefits of high-quality childhood education programs in their extensive review of the literature. They conclude that clear benefits are demonstrated in:

- Schooling – children are less likely to be retained a grade or placed in special education
- Welfare – children are more likely to obtain better paying jobs and earn more money

- Criminal Justice – children are less likely to break laws or engage in other delinquent behaviors

Dr. McCartney concluded that poor children involved in high quality early childhood environments (such as Head Start) gain from the experience in many ways and the effects are long-lasting, even decades later. She noted that it is imperative that we continue to base policy and practice on these important lessons and continue to look to new research to improve the lives of children.