

## **The Impact of Intergenerational Head Start Participation on Success Measures Among Adolescent Children**

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**ABSTRACT:** This study examines the influence of intergenerational Head Start participation on success outcomes among adolescent children of mother-adolescent pairs ( $N = 1,251$ ). Data come from the National Longitudinal Survey of Youth (NLSY79) and the National Longitudinal Survey's Child-Mother (NLSCM) files. Of 290 adolescents who participated in Head Start as children, one-third ( $n = 97$ ) had mothers who had also participated in Head Start when they were children. Graduates of Head Start appear roughly comparable to other adolescents in regard to highest grade completed, a sense of mastery, perceived health, and level of depressive symptoms. They do not attain the levels of achievements as other adolescents in regard to reading comprehension and years living above the poverty level.

**KEY WORDS:** adolescent achievement; early childhood education; Head Start.

This study examines the influence of intergenerational Head Start participation on the home environment, academic achievement, and other success measures among adolescent children of mother-child pairs. Retrospective information about Head Start participation collected from individuals participating in an existing large-scale, longitudinal data file is used. Currie (2001) recommends such an approach in light of the paucity of published studies following Head Start participants into adulthood. Findings are meant to shed light on Head Start's ability to enable its graduates to have comparable levels of reading comprehension, years of schooling, years living in families above the poverty line, and other measures of well-being as do adolescents who did not participate in Head Start.

Head Start children are generally at-risk for behavioral, language, cognitive, and other problems (Kaiser, Hancock, Cai, Foster, & Hester, 2000). The author of this study seeks to determine if second generation Head Starters are at even greater risk of poverty, less supportive home environments, lower academic achievement, and greater use of

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public assistance programs than either their contemporary first generation equivalents or non-Head Starters. To date, the author has identified no other study that addresses the influence of Head Start on two generations of program participants.

### Literature Review

#### *Background Information*

Head Start has served over 18.5 million children since it began in 1965. In 2001 it enrolled over 905,000 children. Of these, 54% were 4-year-olds and another 35% were 3-year-olds; 33.8% were black, 29.9% white, and 29.7% Hispanic. The average cost per child was \$6,633, for a total cost of nearly \$6.2 billion (Administration for Children and Families, 2002).

To ensure young children's physical, social, and mental development, Head Start provides comprehensive child welfare services, including health screening and immunizations for children and emphasizing the importance of nutrition. It also provides parental education and seeks parental involvement (Beatty, 1995; Zigler & Muenchow, 1992). The hope of Head Start is that it levels the playing field such that by making its participants school ready, they are more likely to obtain levels of cognitive and emotional skills, academic achievement, physical and emotional well-being, and socioeconomic status comparable to other children over the life course. Despite some evidence that Head Start children typically enter school "ready to learn" and that they can achieve academically at national norms (Ramey et al., 2000), longer-term objectives like achieving levels of socioeconomic status comparable to other children over the life course may be a high hope. It is widely acknowledged that Head Start "graduates" are significantly disadvantaged socially and economically relative to their elementary school peers and that greater resources may be needed for these families to escape poverty (Caputo, 1998; Lee, Schnur, & Brooks-Gunn, 1988).

Over the past several decades, scholars and others have devoted much attention to Head Start and other preschool interventions like the Perry Preschool Project and the Abecedarian Project (e.g., Campbell, Pungello, Miller-Johnson, Burchinal, & Ramey, 2000; Zigler & Styfco, 1994). Shokraii and Fagan (1998) noted, however, that much of the literature regarding Head Start consisted of program descriptions, anecdotal reports, and position papers and that the relatively few impact studies had methodological and sampling limitations.

*Outcome Studies of Head Start*

On the whole, the earlier literature pertaining to the effects of Head Start on children is extensive and sufficiently covered elsewhere (e.g., Grimmert & Garrett, 1989). What follows is a selective review of more recent literature that has a direct bearing on factors influencing outcomes related to Head Start and that provides the rationale for variables used in this study.

Currie (2001) summarized the results of studies of four Head Start programs. For the most part, these studies relied on nonrandomized treatment and control/comparison groups. Sample sizes for the treatment groups ranged from 182 to 1,915 and control groups from none to 3,502. A review of the evidence concluded that Head Start had significant short- and medium-term benefits and that the effects were greater for more disadvantaged children. Treatment groups outperformed control groups on achievement tests administered in lower elementary school grades, in proficiency skills test administered during adolescence, and in greater retention rates in elementary and high schools, with some variations by race/ethnicity.

Garces, Thomas, and Currie (2000), relying on data from the Panel Study of Income Dynamics, reported that compared to black Head Starters, white Head Starters were more likely to complete high school and attend college. White Head Starters also earned higher earnings in one's early twenties. In another Head Start study, Currie and Thomas (1995), relying on the 1979 cohort of the National Longitudinal Surveys of Youth (NLSY79), reported that the short-term cognitive gains among both whites and blacks were quickly lost among blacks. Additionally, Head Start significantly reduced the probability of repeating a grade for whites but not for blacks. Their findings showed no evidence that participation in Head Start affected nutritional and health status as measured by height-for-age, despite gains in access to preventive services. In a subsequent study, Currie and Thomas (1999) showed that Head Start closed at least one-fourth of the gap in standardized measures of reading recognition and mathematics scores between Hispanic and non-Hispanic white children, and two-thirds of the gap in the probability of grade repetition.

In another study that relied on NLSY79 data, Caputo (2003) compared Head Start and other preschool youth with adolescents who had not attended preschool on several life success measures. Findings suggested that Head Starters were comparable to non-preschoolers in regard to economic mobility, number of years the youth lived in families with incomes below official poverty thresholds, and number of years

the youth lived in families that received public cash assistance or food stamps. Head Start youth, however, had higher average annual income-to-poverty ratios than non-preschoolers.

Caputo (1998) noted that findings of empirical studies were mixed in regard to Head Start's enabling poor families to break the cycle of disadvantage. His study of the children of NLSY79 mothers indicated that Head Start children spent more time in persistent poverty than children from other poor families but that they did benefit from behavioral and emotional adjustments (also see Oden, Schweinhart, Weikart, Marcus, & Xie, 2000).

In a more recent meta-analysis of 35 studies, Gorey (2001) found large positive effects on standardized measures of academic achievement and intelligence, lasting after 5 to 10 years, and substantial lessening of personal and social problems like school drop out and welfare dependence by cumulative indices over a 10 to 25 year period for those who had attended preschool. All 35 studies assessed race, socioeconomic status, or other family background characteristics at pretest and accounted for them in some way in their analyses. Gorey noted that preschool programs like Head Start were generally placed at the low end of a continuum in terms of the amount of preschool intervention. His findings suggested that both short- and long-term benefits were associated primarily with the more intensive programs like the Perry Preschool and the Abecedarian Project. Hence, the public benefits from tax dollars supporting preschool interventions such as additional tax revenue and decreased social welfare expenditures, were attributable to these more intensive programs, not to Head Start (also see Garces, Thomas, & Currie, 2000).

Further, in their study of Head Start programs in Nashville, TN, Kaiser et al. (2000) underscored that the population of 259 three-year old children they examined was at elevated risk for behavior and language problems. To the extent Gorey (2001) and Kaiser et al. were correct, additional resources may be required for Head Start than might be the case for other preschool programs to obtain notable gains in social benefits.

#### *Related Literature and Issues*

The literature in regard to effects of family structure on the well-being of children and adolescents in general and on their education achievement in particular was abundant (e.g., Jeynes, 2002). For the most part, studies showed that time spent outside a two-parent struc-

ture adversely affected the educational attainment of children. Garasky (1995) showed that in addition to time spent living away from one's mother and/or father, which biological parent the child lives with and the age the child had the experience also mattered. Garasky's study also suggested that a mother's graduating from high school offset the negative effect of living in poverty. Magnuson & McGroder (2002), who studied welfare applicants and recipients, showed a positive association between maternal education and children's academic achievement. Family characteristics like mothers' educational level and family income were linked in general to what children knew and could do upon entering kindergarten (National Center for Education Statistics, 2000).

Some studies suggested that the effects of family structure on children's general well-being and academic attainment may be moderated by the nature of the home environment (e.g., see Lareau & Horvat, 1999). Head Start programs generally provided a range of social services to the parents of the children in an effort to improve home life. Such efforts had been shown to improve children's social competence (Webster-Stratton, 1998). Burriss (2001) reported that maternal parenting affects a child's cognitive competence, with involvement resulting, for example, in improved child memory, while full-time working mothers adversely affected their daughters' educational aspirations. In their examination of the effects of welfare and work policies, however, Morris, Knox, and Gennetian (2002) reported that programs increasing both parental employment and cash benefits to working recipients improved the academic achievement of their elementary school-age children. Promotion of work by itself, especially maternal employment, adversely affected academic achievement of adolescents. These youth were more likely to repeat a grade.

As noted, Head Start was seen as having a pivotal role in increasing human capital and thereby in leveling the playing field for academic achievement and socioeconomic success over the life course. At issue for purposes of this study was whether Head Start participation was sufficient to overcome structural and/or family-related barriers, like living in poverty and/or in high-risk family/home environments, over successive generations. Overcoming such barriers was seen as essential to improving poor children's readiness for school. To the extent Head Start participation increased the likelihood of overcoming structural and/or family-related barriers, then it may serve as a useful model for universal preschool. To the extent it did not, then Head Start may have to change accordingly.

In an effort to learn more about the impact of Head Start in general and on the children of two-generation Head Start families in particular, this study addressed the following questions:

1. To what extent do adolescents who participated in Head Start and whose mothers had also participated in Head Start vary from other youth in regard to poverty, supportive home environments, academic achievement, and use of public assistance programs?
2. To what extent does intergenerational Head Start participation affect poverty, supportive home environments, academic achievement, and use of public assistance programs when controlling for background, risk, and other factors?

Answers to these questions will enable policymakers and others interested in the effects of Head Start to assess its appropriateness as an intervention strategy to increase opportunities among program participants for later life success and perhaps to identify those who might face even greater risk than would have been the case otherwise.

## Methods

### *Sample*

The study sample was obtained from the NLSY79 and the National Longitudinal Survey's Child-Mother (NLSCM) files. The NLSY79 is a nationally representative sample of 12,686 noninstitutionalized individuals in the U.S. aged 14 to 21 as of December 31, 1978. Respondents were interviewed annually between 1979 and 1994, and again in 1996 and in 1998. Of the total number of original respondents, 6,283 were female. These women were aged 33–41 in 1998 when last surveyed, and 7,067 children were interviewed that year.

In 1986, the NLS began a separate survey of the children of the women of the NLSY79, the NLSCM. The children were subsequently interviewed every other year through 1998, the most recent year of data available for this study. A series of assessments was administered to measure the cognitive ability, perceived competence, and quality of home environment of the children. In survey year 1986, mothers were asked if they had ever participated in a Head Start program. Also in survey year 1986, and subsequently, mothers were asked if their children had ever participated in Head Start. Although participation in Head Start was not a specific focus of the NLS surveys, the NLSY79 and the NLSCM provided uniquely rich sources of longitudinal data that



served as a basis to compare the impact of Head Start on two-generation participants vis-à-vis one-generation and non-participants.

The study sample comprised 1,251 of the 2,424 children who were eligible for the Young Adult interviews in 1998. The youth in the study sample ranged from 14 to 21 years old. There were 754 mothers (497 mothers had more than one child eligible for the Young Adult interviews). Only those adolescents for whom all relevant information about them and their mothers was available were included in the study. It should be noted, however, that of the 1,251 adolescents in the study sample, 290 had missing values for high school grades. For these cases, the mean high school grades of all adolescents eligible for the 1998 survey by race/ethnicity/sex were used. Documentation about the national sample and offspring, as well as instrumentation of measures was available in the NLS Handbook 2000 (Center for Human Resource Research, 2000), the NLSY79 User's Guide 1999 (Center for Human Resource Research, 1999), the NLSY Child Handbook 1986–1990 (Center for Human Resource Research, 1993), and the NLSY 1992 Child Assessment Data Users Guide (Center for Human Resource Research, 1995).

### *Measures*

*Academic achievement.* Academic achievement of the children of the NLSY79 mothers was assessed by five measures: scholastic aptitude, mathematical ability, reading comprehension, highest grade completed, and, when appropriate, high school grades. The Peabody Picture Vocabulary Test is a standardized measure of an individual's receptive (hearing) vocabulary for standard American English and provided an estimate of verbal ability or scholastic aptitude. For information regarding norming procedures see Dunn and Dunn (1981). For information regarding studies of the Peabody Picture Vocabulary Test's reliability estimates from its standardized sample (4,200 children between two years, six months and eighteen years eleven months), of the Peabody Picture Vocabulary Test's demonstrated predictive validity with other achievement measures, and use of the Peabody Picture Vocabulary Test with NLSY data files see Center for Human Resource Research (1993). The Peabody Picture Vocabulary Test was used here as a short-term outcome measure and subsequently as a correlate when assessing longer-term outcomes such as highest grade completed as of the 1998 interview and last or most recent high school grades.

The Peabody Individual Achievement Test is a wide-range and commonly used standardized measure of academic achievement for children aged five and over (Dunn & Markwardt, 1970). For a discussion of its use over the years and with the NLSY sample and of tests for reliability and validity, see Center for Human Resource Research (1993). For purposes of this study, the normed standard scores of the Peabody Individual Achievement Test Mathematics and Reading Comprehension subtests are used (Mean = 100, SD = 15). The Peabody Individual Achievement Test Mathematics and Reading Comprehension scores from 1992 were used in this study. Highest grade completed represented a child's highest grade of completed education at the time of the 1998 survey interview. High school grade was a 12-point ordinal level measure and

signified the average grades children reported they received in most of their courses during their last or most recent year in high school. Keeping in mind that grades A–D included separate numerical scores of corresponding pluses and minuses, the permissible range for high school grade was from 1, mostly A's, to 12, mostly F's. This measure was also obtained from the 1998 survey.

*Home environment.* This study used two common measures that were component parts of the Home Observation for Measurement of the Environment-Short Form (Caldwell & Bradley, 1984, as cited in Center for Human Resource Research, 1993), obtained from the 1986 survey. The Home Observation for Measurement of the Environment-Short Form contained 27 items that provide an observational measure of the quality of the cognitive stimulation and emotional support provided by a child's family. Each item was given a score of 0 (indicating lack of stimulation) or 1 (indicating the presence of stimulation). The two general subscales were: emotional support and cognitive stimulation (Dubow & Luster, 1990). Standardized scores were used. These scores were internally normed on a single year of age basis, with a mean standard score of 100 (SD = 15). As continuous variables, cognitive and emotional stimulation scores were used here as short-term outcome measures in the ANOVA and multiple regression procedures for survey year 1986. They were used as correlates when assessing mid- and longer-term outcomes such as Peabody Individual Achievement Test Mathematics and Reading Comprehension in 1992, self-esteem in 1998, and last or most recent high school grades reported in 1998. As was the case with the scholastic ability, mathematics and reading comprehension measures, documentation regarding use, validity, and reliability of the home environment measure were found in Center for Human Resource Research (1993).

*Physical and emotional well-being.* Two health-related and two psychological outcome measures were included in this study. The first health-related variable, health, was a continuous measure of children's self reported responses to the question of how they would describe their present health at the time of interview in 1998 on a Likert scale ranging from 1 = poor to 5 = excellent. The second health-related variable, depression, was measured by a shortened version of the Center for Epidemiological Studies Depression Scale developed for use in studies of the epidemiology of such symptoms in the general population (Radloff, 1977; also see Center for Human Resource Research, 1999). Permissible scores ranged from 0 to 21, with higher scores signifying greater degrees of depressive symptoms (study sample alpha = .67). The two psychological variables measured self-esteem and a sense of mastery over one's life. The Rosenberg Self-Esteem Scale (Rosenberg, 1965) constituted the measure of self-esteem (study sample alpha = .87), while the Pearlin Mastery Scale (Pearlin, Lieberman, Menaghan, & Mullan, 1981) constituted the measure of mastery (study sample alpha = .74). Both scales were commonly used measures (See Center for Human Resource Research, 1999). The range of the Rosenberg Self-Esteem Scale was 10 to 40, with higher scores signifying a greater sense of self-esteem. The range of the Pearlin Mastery Scale was 7 to 28, with higher scores signifying greater sense of control over one's life.



*Poverty-related outcomes.* The measure years in poverty captured the number of years children lived with their mothers in families whose income fell below the official poverty thresholds. The measures years of income assistance and years of food stamps assistance respectively captured the number of years the adolescents in the study lived with their mothers who received either Aid to Families with Dependent Children/Temporary Assistance for Needy Families payments or food stamps. The dichotomous variable teen parent signified whether or not the adolescent has a child of his/her own outside of marriage. Teen parent was coded such that 1 = an adolescent who was a non-married parent and 0 = others.

*Correlates.* Mother-adolescent pairs comprised the main independent variables of concern in this study. They were categorized into four Head Start participation groups: 1) both mothers and adolescents who were Head Start participants, 2) mothers who were Head Start participants, adolescents who were not, 3) mothers who were not Head Start participants, adolescents who were, and 4) neither mothers nor adolescents who were Head Start participants. For purposes of the multivariate analyses described below, the first category, mothers who were Head Start participants and adolescents who were, was omitted and served as the reference. Repeat grade signified whether or not a child ever repeated a grade, while skipped grade indicated whether or not a child ever skipped a grade. Both were coded such that 1 = occurrence of the event, 0 = nonoccurrence.

Background measures serving as control variables included a variety of personal, familial, and sociodemographic characteristics thought to influence childhood development. Family structure reflected presence or absence of a child's father and was captured in a series of dummy variables regarding whether or not he never, always, or intermittently resided in the household through 1986, 1992, or 1998, as appropriate for respective outcome analyses. "Always" was the reference category. Mother's age at the time of the birth of the child was included as a background factor. In addition, the number of children in the mother's household in the initial survey year 1979 served as a factor affecting the time and attention she was likely to give any child at home (see Becker, 1981/1991). Likewise, the average annual number of hours mothers worked during those years when the adolescent lived with her was used as another factor affecting the time and attention mothers were likely to give their child.

Race/ethnicity/sex comprised a series of six dummy variables, signifying black, white, and Hispanic males and females respectively. Respondents who reported other racial/ethnic backgrounds were excluded from the study sample. White males served as the reference category. Other control variables included age of the adolescent, whether or not the mother completed high school by 1986, 1992, or 1998, as appropriate for respective outcome analyses, and mother's age. Finally, as noted, the 1986 home environment measures for cognitive and emotional stimulation, the 1992 academic achievement measures for reading and mathematical comprehension, repeating a grade, and skipping a grade were used as correlates of all outcomes assessed for survey year 1998.

### *Analyses*

ANOVAs were used to obtain descriptive information on ordinal and interval level outcome measures and correlates by Head Start participation group. When an ANOVA test was significant, the Duncan post hoc statistic was used to show differences in the rank order of the measure. When significant differences were found, OLS regression was used to determine if Head Start participation was a robust predictor of the outcome measure when controlling for a variety of background, risk, and other factors. Separate regression analyses were conducted for each of the ten ordinal and interval level outcome measures. All factors were entered into each of the ten regression models and standardized estimates were used to assess the relative influence of each predictor on the respective outcome measure. Logistic regression was used to determine the influence of factors affecting the likelihood of an adolescent becoming a teen parent in the absence of marriage.

### *Limitations*

The adolescents in this study were not necessarily representative of the children born to the 1979 cohort of the National Longitudinal Survey of Youth. This was so because only children of the females in the cohort were included in subsequent surveys. Further, the mothers of the study were drawn from only one cohort of youth in the U.S. and they may not be representative of other cohorts of youth and their children. For some information the study relied on retrospective data and it used statistical techniques to control for rather than directly manipulate factors thought to influence outcome measures. Finally, the study did not account for Head Start participants, whether mothers or adolescents, who may have benefited from transitional programs such as Follow Through and the National Head Start/Public School Transition Demonstration Project. Research on such programs indicated that many programs showed no differences between participants and non-participants (Kagan & Neuman, 1998).

## **Results**

White males, white females, and black females made up approximately 20% each of the 1,251 adolescents in the study sample, while Hispanic males and Hispanic females made up about 11% each. The youth averaged 16.6 years of age ( $SD = 1.6$ ) and had completed 9.6 years of education ( $SD = 1.5$ ) at the time of the 1998 survey. They scored an average of 4.0 (of 5.0 possible,  $SD = 0.9$ ) on the self-reported measure of health, signifying that they were in good to excellent health. And the youth exhibited relatively few symptoms of depression, with an average CES-D score of 4.8 (with 21.0 maximum,  $SD =$

3.5). They also had a good sense of mastery, with an average score on the Pearlin Mastery scale of 22.0 (with 28 maximum,  $SD = 3.0$ ). For the most part, the youth lived in families above the poverty line, reporting an average of 0.9 years in poverty ( $SD = 2.9$ ).

As can be seen in Table 1, mothers who were not Head Start participants and whose adolescents were not Head Start participants were comprised of 847 (67.7%) mother-adolescent pairs. Mothers who were not Head Start participants with adolescents who were Head Start participants were comprised of 193 (15.4%) mother-adolescent pairs. Mothers who were Head Start participants with adolescents who were not Head Start participants were comprised of 114 (9.1%) mother-adolescent pairs. And mothers who were Head Start participants with adolescents who were Head Start participants, that is, the intergenerational Head Start families, were comprised of 97 (7.6%) mother-adolescent pairs. Of 290 mother-adolescent pairs in which adolescents

**TABLE 1**  
**Nominal Level Study Measures by Head Start Mother-Child  
Pair Status, Percents**

Measures	Head Start mother-child pairs			
	Mother and adolescent in Head Start ( $N = 97$ )	Mother only in Head Start ( $N = 114$ )	Adolescent only in Head Start ( $N = 193$ )	Neither mother nor adolescent in Head Start ( $N = 847$ )
Teen parents	10.31	11.40	14.51	06.85
Family structure				
Fathers never present	30.93	22.81	24.35	10.04
Fathers always present	06.19	01.75	05.18	15.35
Fathers sometimes present	62.89	75.44	70.47	74.62
Race/ethnicity/sex				
White male	03.09	08.77	08.29	26.21
Black male	48.45	27.19	24.87	11.81
Hispanic male	04.12	07.89	10.36	12.04
White female	02.06	06.14	15.03	24.79
Black female	35.05	42.11	26.94	14.29
Hispanic female	07.22	07.89	14.51	10.86
Mothers high school grad	74.23	67.54	59.59	72.49
Repeat grade	43.30	26.32	33.16	21.02
Skipped grade	04.12	06.14	05.70	01.89

TABLE 2  
Ordinal and Interval Level Study Measures by Head Start Mother-Adolescent Pair Status: Means, ANOVA,  
and Duncan Post Hoc Results

Measures	Head Start mother-child pairs				F-value	Duncan post hoc
	Mother and adolescent in Head Start (N = 97) [1]	Mother only in Head Start (N = 114) [2]	Adolescent only in Head Start (N = 193) [3]	Neither mother nor adolescent in Head Start (N = 847) [4]		
<i>Adolescent Outcomes</i>						
Academic Achievement						
Highest grade completed	09.78	09.82	09.84	10.02	01.50	
High school grades	05.51	04.89	05.31	04.92	03.84**	1 > 4, 2; 1, 3, 4;
Math comprehension	93.11	95.57	95.47	99.60	13.31***	4 > 2, 3, 1
Reading comprehension	92.58	98.26	97.00	100.90	13.70***	4, 2 > 1; 4 > 3, 1; 2, 3
Scholastic aptitude	83.42	87.52	86.84	93.97	21.68***	4 > 2, 3, 1; 2 > 1
Home environment						
Emotional support	08.91	09.55	09.51	10.00	18.48***	4 > 2, 3 > 1
Cognitive support	09.17	09.59	09.45	09.95	12.17***	4 > 2, 3, 1; 2 > 1
Phys/Emotional Well-being						
Depressive symptoms	04.33	04.74	05.29	04.75	01.92	
Health status	03.92	04.03	03.83	03.97	01.40	
Mastery	21.82	21.62	21.65	22.10	01.80	
Self-esteem	32.15	32.11	31.85	32.73	02.93*	4, 1, 2, 3

Poverty-related									
Years of income aid	01.66	00.83	01.23	00.44	10.30***	1 > 2, 4; 3 > 4; 1, 3, 2			
Years of Food Stamps	02.05	01.25	01.72	00.73	07.59***	1, 3 > 4; 3, 2, 4			
Years of poverty	02.19	00.94	01.58	00.61	12.86***	1, 3 > 2, 4			
<i>Background/Control</i>									
Age of adolescent	16.74	16.46	16.77	16.61	01.10				
Age of mother	36.28	36.17	37.48	37.72	30.41***	4, 3 > 1, 2			
Age of mother at first birth	19.05	19.21	20.19	20.61	22.58***	4, 3 > 2, 1			
Mother work-annual hours	69.04	60.26	151.91	107.90	02.15 <sup>†</sup>	3 > 2; 3, 4, 1, 2			
Children in household - #	00.41	00.34	00.54	00.36	04.00**	3 > 2; 3, 1, 4, 2			

*Note.* Duncan post hoc tests are significant below the .05 level. The numbers in the post hoc column correspond to the designated Head Start mother-child pair columns. In regard to high school grades, for example, youth who participated in Head Start and whose mothers also participated in Head Start [1] had statistically significant higher grades than youth who did not participate in Head Start and whose mothers did not participate in Head Start [4], as well as youth who did not participate in Head Start but whose mothers did [2]. Youth who participated in Head Start and whose mothers also participated in Head Start had higher but roughly equivalent grades with youth who had participated in Head Start but whose mother did not. This last group of youth had roughly comparable grades to youth who did not participate in Head Start and whose mothers also did not participate in Head Start. Poverty-related and background/control measures (except the number of children in the mother's household in 1979) are those obtained in 1998.

<sup>†</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

participated in Head Start, 33.4% had mothers who participated in Head Start. Black males (48.5%) and females (35.1%) had the highest percentages of intergenerational Head Start families. White males (26.2%) and females (24.8%) had the highest percentages of mother-adolescent pairs in which neither mothers nor adolescents participated in Head Start. Intergenerational Head Start families had the highest percentages of mother-adolescent pairs where the child's father was never present (30.9%) and where adolescents had repeated grades (43.4%).

As can be seen from the ANOVA results in Table 2, differences by Head Start mother-adolescent pair groups were found on four of five academic achievement outcomes, both home environment measures, one of four physical/emotional well-being outcomes, and all three poverty-related measures. In regard to academic achievement, adolescents who attended Head Start with mothers who also participated in Head Start had the lowest scores on the standardized measures of scholastic aptitude and mathematical ability of all other mother-adolescent pairs. In addition they and those who did not participate in Head Start but whose mothers did had the lowest scores on reading comprehension. Keeping in mind that higher numbers signified lower grades, adolescents from intergenerational Head Start families had lower grades, on average between B- and C+, than youth in both mother-adolescent pairs where the adolescents did not participate in Head Start. These youth reported grades averaging between B and B+. Like adolescents from intergenerational Head Start families, youth who attended Head Start whose mothers did not, also had high school grades averaging between B- and C+. In regard to home environment, adolescents from intergenerational Head Start families had the least emotional support of all other mother-adolescent pairs. They also had lower cognitive support than children who did not participate in Head Start whose mothers also did not participate and youth who did not participate in Head Start but whose mothers did.

Significant differences among Head Start mother-adolescent pairs were found on all three poverty-related measures. Adolescents from intergenerational Head Start families as well as youth who attended Head Start but whose mothers did not spent more years living in poverty (2.19 and 1.58 years respectively) than did adolescents who did not participate in Head Start and whose mothers also did not participate (0.9 years). Both of these groups of Head Start adolescents also spent more years living in poverty than did adolescents whose moth-



ers participated in Head Start (0.6 years). Adolescents from intergenerational Head Start families spent more years living with their mothers when they received AFDC/TANF benefits (1.66 years) than children who did not participate in Head Start but whose mothers did (0.83 years). They also spent more years living with their mothers when they received AFDC/TANF benefits than adolescents who did not participate in Head Start and whose mothers also did not participate (0.44 years). Head Start adolescents whose mothers did not participate in Head Start spent more years living with their mothers when they received AFDC/TANF benefits (1.23 years) than youth who did not participate in Head Start and whose mothers also did not participate. Intergenerational Head Start adolescents and youth who attended Head Start whose mothers did not spent more years living with their mothers when they received food stamps (2.05 and 1.72 years respectively) than adolescents who did not participate in Head Start and whose mothers also did not participate (0.73 years).

Significant differences were also found on three of five background/control measures. Notably, adolescents from intergenerational Head Start families and youth who did not participate in Head Start but whose mothers did had mothers who were younger at the time of their first birth (19.1 and 19.2 years old respectively). They were also younger in age (36.3 and 36.2 years old) at the time of the 1998 survey than Head Start adolescents whose mothers did not participate in Head Start (20.2 and 37.5 years old respectively) and youth who did not participate in Head Start and whose mothers also did not participate (20.6 and 37.7 years old respectively).

Regression model results on those ordinal and interval level outcome measures found from the ANOVA's to be statistically significant appear in Table 3. Head Start participation remained a robust predictor when accounting for a variety of background/control measures for one academic achievement measure (reading comprehension) and two poverty-related measures (number of years adolescents lived with mothers who received food stamps and whose family income fell below official poverty thresholds). The study measures accounted for 87% of the variance for the two poverty-related outcomes and 20% for the reading comprehension outcome. The unusually high adjusted  $R^2$ 's for the years of food stamps and years of poverty regression models were invariably due to the strong correlation between years of receiving food stamps and of living in poverty ( $r = .90, p < .001$ ). These results were also reflected by years of food stamps contributing the most to

TABLE 3

OLS Regression Results: Parameter Estimates, (Standard Error), [Standardized Coefficients] by Academic Achievement, Emotional Well-Being, and Poverty-Related Outcomes

Measures	Home environment			Academic achievement				Well-being			Poverty-related		
	Cognitive support	Emotional support	Scholastic ability	Mathematical comp	Reading comp	High school grades	Self-esteem	Years income aid	Years Food Stamps	Years of poverty			
<i>Head Start Group<sup>A</sup></i>													
Mother only	26.2 (19.5) [.05]	36.9 (20.5) [.07]	01.1 (02.0) [.02]	00.7 (01.6) [.02]	03.0 (01.8) [.06]	-00.3 (00.3) [-.04]	-00.1 (00.1) [-.01]	-00.1 (00.1) [-.01]	00.4* (00.2) [.03]	-00.4** (00.1) [-.05]			
Adolescent only	05.8 (17.9) [.06]	23.9 (18.6) [.05]	00.1 (01.8) [.00]	00.8 (01.5) [.02]	02.3 (01.6) [.06]	-00.0 (00.3) [-.00]	00.1 (00.5) [.01]	-00.0 (00.1) [-.01]	00.2 (00.2) [.02]	-00.3* (00.1) [-.04]			
Neither mother nor adolescent	20.8 (16.2) [.06]	31.2 (17.0) [.09]	01.7 (01.6) [.05]	01.7 (01.3) [.06]	02.9* (01.5) [.10]	-00.2 (00.2) [-.05]	00.7 (00.5) [.08]	-00.1 (00.1) [-.01]	00.3 (00.2) [.04]	-00.4** (00.1) [-.07]			
Academic													
Scholastic aptitude	-	-	-	-	-	-00.0 (00.0) [-.02]	00.0*** (00.0) [.15]	-00.0 (00.0) [.01]	-00.0 (00.0) [.01]	00.0 (00.0) [.00]			
Mathematics comprehension	-	-	-	-	-	-00.0*** (00.0) [-.10]	00.0 (00.0) [.05]	0.00 (00.0) [.03]	-00.0* (00.0) [-.03]	00.0 (00.0) [.00]			
Reading comprehension	-	-	-	-	-	-00.0 (00.0) [-.03]	-00.0 (00.0) [-.02]	00.0 (00.0) [0.0]	00.0 (00.0) [0.0]	-00.0 (00.0) [-.00]			
Repeat grade	-	-	-	-	-	00.7*** (00.1) [-.14]	-01.6*** (00.3) [-.17]	-00.2** (00.1) [-.04]	00.3** (00.1) [.03]	00.0 (00.1) [.00]			
Skipped grade	-	-	-	-	-	-00.4 (00.3) [-.03]	00.1 (00.7) [.01]	00.3 (00.2) [.02]	-00.3 (00.2) [-.02]	00.0 (00.2) [.00]			
<i>Background/Control</i>													
Age of adolescent	-02.7 (07.8) [-.02]	11.9 (08.2) [.12]	00.1 (00.8) [.01]	00.2 (00.7) [.02]	00.4 (00.7) [.05]	00.2 (00.1) [.12]	00.3 (00.2) [.12]	00.1 (00.1) [.06]	-00.0 (00.1) [-.02]	-00.1 (00.1) [-.04]			
Age of mother	12.2 (07.7) [.17]	-04.2 (08.1) [-.06]	-00.0 (00.8) [-.00]	-00.8 (00.7) [-.13]	01.2 (00.7) [-.18]	-00.1 (00.1) [-.13]	-00.0 (00.2) [-.02]	-00.1 (00.1) [-.09]	00.0 (00.1) [.02]	00.1 (00.1) [.06]			
Family structure	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference			
Always	23.8	-45.4**	-03.0	-02.2	-03.1*	00.2	-01.3**	00.5***	-00.3	-00.0			
Never	(14.4) [.07]	(15.1) [-.13]	(01.6) [-.07]	(01.3) [-.07]	(01.4) [-.08]	(00.2) [.03]	(00.5) [-.11]	(00.1) [.07]	(00.2) [-.03]	(00.1) [-.00]			
Intermittent	29.7**	03.0	-03.0*	-00.9	-02.5*	00.2	-01.0**	00.1	00.1	-00.1			
	(11.5) [.10]	(12.1) [-.01]	(01.2) [-.08]	(01.0) [0.03]	(01.1) [-.08]	(00.2) [.04]	(00.4) [-.11]	(00.1) [.01]	(00.1) [.01]	(00.1) [-.01]			



<i>Home environment</i>											
Cognitive support	—	—	—	00.0***	00.0***	00.0***	00.0***	00.0	00.0	00.0	00.0
	(07.6) [-12]	(07.9) [11]	(00.0) [20]	(00.0) [15]	(00.0) [17]	(00.0) [00]	(00.0) [03]	(00.0) [00]	(00.0) [01]	(00.0) [01]	(00.0) [01]
Emotional support	—	—	00.0***	00.0***	00.0***	00.0***	00.0	00.0	00.0	00.0	00.0
	(07.6) [-12]	(07.9) [11]	(00.0) [20]	(00.0) [15]	(00.0) [17]	(00.0) [00]	(00.0) [03]	(00.0) [00]	(00.0) [01]	(00.0) [01]	(00.0) [01]
Mother's age at first birth	-07.5	07.4	00.6	01.2	01.7**	00.1	00.0	00.1	00.0	00.0	-00.1
	(07.6) [-12]	(07.9) [11]	(00.8) [08]	(00.6) [22]	(00.7) [29]	(00.1) [0.15]	(00.2) [0.1]	(00.1) [0.08]	(00.1) [0.00]	(00.1) [0.00]	(00.1) [-0.7]
Mother completed high school	61.9***	24.4*	05.0***	02.1**	02.6**	-00.2*	00.5+	00.2*	-00.2*	-00.2*	-00.0
	(09.2) [19]	(09.6) [07]	(00.9) [14]	(00.7) [08]	(00.8) [09]	(00.1) [-0.7]	(00.3) [0.5]	(00.1) [0.03]	(00.1) [-0.03]	(00.1) [-0.03]	(00.1) [-0.1]
Mother worked—annual hours	72.7***	46.2**	04.7**	02.3	02.7	00.2	-00.6	-00.6***	00.8***	00.8***	01.9***
	(14.6) [13]	(15.3) [08]	(01.8) [09]	(01.5) [06]	(01.6) [06]	(00.3) [0.03]	(00.5) [-0.05]	(00.1) [-0.08]	(00.2) [0.08]	(00.2) [0.08]	(00.1) [22]
Children in mother's home in 1979 - #	-14.9*	-10.8	-02.4***	-01.5**	-02.4***	00.1	-00.1	0.00	00.1*	00.1*	-00.1
	(06.8) [-0.7]	(07.1) [-0.5]	(00.7) [-1.0]	(00.6) [-0.8]	(00.6) [-1.2]	(00.1) [0.01]	(00.2) [-0.1]	(00.1) [0.00]	(00.1) [0.03]	(00.1) [0.03]	(00.1) [-0.1]
Teen parent	—	—	—	—	—	00.5*	00.2	00.3**	-00.1	-00.1	-00.1
	(06.8) [-0.7]	(07.1) [-0.5]	(00.7) [-1.0]	(00.6) [-0.8]	(00.6) [-1.2]	(00.1) [0.01]	(00.2) [-0.1]	(00.1) [0.00]	(00.1) [0.03]	(00.1) [0.03]	(00.1) [-0.1]
<i>Poverty-related</i>											
Years income aid	07.0	-04.5	00.3	00.8*	00.6	00.0	00.0	—	00.6***	00.6***	00.4***
	(05.6) [0.6]	(05.8) [-0.4]	(00.4) [0.4]	(00.3) [1.6]	(00.4) [1.0]	(00.1) [0.6]	(00.1) [0.2]	—	(00.0) [0.47]	(00.0) [0.47]	(00.0) [0.35]
Years Food Stamps	06.5	03.1	-00.6	-00.8**	-00.5	-00.1	-00.0	00.4***	—	—	00.4***
	(04.7) [0.7]	(05.0) [0.3]	(00.4) [-1.0]	(00.3) [-1.7]	(00.3) [-1.0]	(00.0) [-1.3]	(00.1) [-0.2]	(00.0) [0.55]	—	—	(00.0) [0.42]
Years of poverty	-15.5**	-08.6	-00.1	-00.0	-00.3	00.0	00.0	00.4***	00.5***	00.5***	—
	(05.2) [-1.7]	(05.5) [-0.9]	(00.4) [-0.2]	(00.4) [-0.1]	(00.4) [-0.5]	(00.1) [0.06]	(00.1) [0.03]	(00.0) [0.43]	(00.0) [0.44]	(00.0) [0.44]	—
<i>Race / ethnicity / sex<sup>b</sup></i>											
Black male	-73.2***	-78.7***	-07.1***	-03.2**	-03.9**	-00.2	01.9***	-00.1	00.0	00.0	00.1
	(14.3) [-18]	(15.0) [-19]	(01.5) [-16]	(01.2) [-10]	(01.3) [-11]	(00.2) [-0.3]	(00.4) [1.7]	(00.1) [-0.2]	(00.1) [0.00]	(00.1) [0.00]	(00.1) [0.1]
Hispanic male	-71.9***	-04.1	-06.1***	-04.5***	-03.6	-00.4	00.1	-00.1	-00.1	-00.1	00.2
	(15.0) [-14]	(15.7) [-0.1]	(01.5) [-11]	(01.3) [-11]	(01.4) [-0.5]	(00.2) [-0.5]	(00.4) [0.1]	(00.0) [-0.1]	(00.1) [-0.00]	(00.1) [-0.00]	(00.1) [0.2]
White female	14.6	05.5	00.4	-01.3	01.2	-01.0***	-01.1**	00.1	-00.1	-00.1	-00.1
	(12.5) [0.4]	(13.1) [0.1]	(01.3) [0.1]	(01.0) [-0.4]	(01.1) [0.3]	(00.2) [-0.19]	(00.1) [-0.11]	(00.1) [0.02]	(00.1) [-0.00]	(00.1) [-0.00]	(00.1) [-0.1]
Black female	-81.9***	-67.4***	-07.4***	-04.8***	-00.2	-01.3***	01.1**	-00.0	00.1	00.1	00.1
	(13.6) [-21]	(14.3) [-17]	(01.4) [-18]	(01.1) [-15]	(01.2) [-0.1]	(00.2) [-0.24]	(00.4) [1.1]	(00.1) [-0.01]	(00.1) [0.00]	(00.1) [0.00]	(00.1) [0.1]
Hispanic female	-67.3***	-44.7**	-06.0***	-05.3***	-00.3	-01.2***	-00.0	00.1	00.1	00.1	-00.0
	(15.1) [-14]	(15.8) [-0.9]	(01.5) [-11]	(01.3) [-13]	(01.4) [-0.1]	(00.2) [-0.18]	(00.4) [-0.00]	(00.1) [0.01]	(00.1) [0.00]	(00.1) [0.00]	(00.1) [-0.00]
Adjusted R <sup>2</sup>	0.19	0.15	0.30	0.20	0.20	0.12	0.11	0.84	0.87	0.87	0.87

Note. As noted in the text, the 1986 the home environment measures for emotional and cognitive support are used as predictors in the 1992 academic achievement models for scholastic ability, mathematics comprehension, and reading comprehension, while these measures and repeat grade and skipped grade were used as predictors of high school grades, self-esteem, and poverty-related outcomes (years of income and in-kind aid and years of poverty) assessed for survey year 1998. Years of income and in-kind aid and years of poverty are also used as predictors, respectively adjusted for survey year, in the home environment, academic achievement, and emotional well-being models.

<sup>a</sup> Reference category is "Youth and mothers both of whom had participated in Head Start."

<sup>b</sup> Reference category is "White males."

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

the variance in the years of poverty model (Beta = .42) and years of poverty accounting for the second greatest contribution to the variance in the years of food stamps model (Beta = .44).

Adolescents who did not participate in Head Start and whose mothers did not participate had statistically significant higher reading comprehension scores (Beta = .10,  $p < .05$ ) than did those from intergenerational Head Start families. Family structure also contributed to variation in reading comprehension scores. Adolescents whose fathers were never present in the home or present some of the time had lower scores (Beta = -.08,  $p < .05$ ) than those whose fathers were always present. Other factors that contributed to reading comprehension included cognitive (Beta = .17,  $p < .001$ ) and emotional support (Beta = .12,  $p < .001$ ), mother's age at the time of the birth of her first child (Beta = .29,  $p < .01$ ), mother having a high school degree (Beta = .09,  $p < .01$ ), number of children in the household in 1979 (Beta = -.12,  $p < .001$ ), and being a black male vs. a white male (Beta = -.11,  $p < .001$ ). Greater levels of cognitive and emotional support and older age of the mother at the time of the birth of her first child were associated with increases in reading comprehension. Greater number of children in the household in 1979 and being a black male vis-à-vis a white male were associated with lower reading comprehension scores.

Adolescents of mothers who participated in Head Start but who were not Head Start participants themselves spent more years living with their mothers as recipients of food stamps (Beta = .03,  $p < .05$ ) compared to youth from intergenerational Head Start families. Adolescents who repeated a grade spent fewer years living with their mothers as recipients of food stamps between 1986 and 1998 (Beta = -.03,  $p < .01$ ). Higher scores in mathematical ability were associated with fewer years in such families (Beta = -.03,  $p < .05$ ). Other measures contributing to variation in the number of years children lived with mothers as recipients of food stamps included whether or not mothers completed at least 12 years of schooling (Beta = -.03,  $p < .05$ ), average number of hours mothers worked (Beta = .08,  $p < .001$ ), number of children living in the family in 1979 (Beta = .03,  $p < .05$ ), number of years children lived with mothers as recipients of AFDC/TANF (Beta = .47,  $p < .001$ ), and number of years children lived with mother whose families were poor (Beta = .44,  $p < .001$ ).

Adolescents from intergenerational Head Start families spent more years in poor families compared to youth whose mothers who participated but were not Head Start participants themselves (Beta = -.05,  $p < .01$ ), adolescents who participated whose mothers did not (Beta =

-.04,  $p < .05$ ), and youth who did not participate in Head Start and whose mothers did not participate (Beta = -.07,  $p < .001$ ). Other factors contributing to variation in the number of years adolescents lived with mothers in poor families were number of years adolescents lived with mothers who worked (Beta = .22,  $p < .001$ ), number of years they lived with mothers as recipients of AFDC/TANF (Beta = .35,  $p < .001$ ), and number of years they lived with mothers as recipients of food stamps (Beta = .42,  $p < .001$ ). All these latter relationships were positive, signifying that the greater the number of years mothers worked and received AFDC/TANF, and food stamps while adolescents lived with them, the more years their families spent in poverty.

Also, as can be seen in Table 3, family structure was a good predictor of emotional support. Compared to adolescents whose fathers always lived with them, youth whose fathers never lived with them had lower levels of emotional support (Beta = -.13,  $p < .01$ ). Lower levels of support were also associated with black males (Beta = -.19,  $p < .001$ ), black females (Beta = -.17,  $p < .001$ ), and Hispanic females (Beta = -.09,  $p < .01$ ). Higher levels of emotional support were found the greater the number of years adolescents lived with working mothers (Beta = .08,  $p < .01$ ) and when mothers had completed at least 12 years of schooling (Beta = .07,  $p < .05$ ).

Finally, of 1,251 children in the study sample, 106 (8.5%) were unmarried parents. Logistic regression analysis indicated that Head Start participation was not a robust predictor of unmarried parenthood (table is not shown due to space limitations). Only two factors, namely being a black female (Beta = .21,  $p < .05$ ) and average annual hours mothers worked (Beta = .20,  $p < .01$ ) influenced the likelihood of becoming an unmarried parent.

## Discussion

Perhaps the most telling finding of this study is that one-third of the Head Start youth had parents who also participated in Head Start. It suggests that many of the next generation of Head Start participants are likely to have had parents who also participated in Head Start. This finding can be troublesome if viewed as too high a percentage of "failures" in getting poor children school ready. The finding might more appropriately be seen as an attempt by parents who participated in Head Start, especially inner city parents, to place their children in

a safe child care environment. Since such parents had prior experience with Head Start, they would know its benefits in this regard.

Findings of this study in regard to academic achievement, physical and emotional well-being, poverty-related outcomes, and other measures indicate that youth who had participated in Head Start are more similar than not compared to one another regardless of their mothers' participation. They also are more similar to adolescents who did not participate in Head Start but whose mothers did. Adolescents in intergenerational Head Start families, for example, are just as likely to live in poverty, receive food stamps, and repeat grades as youth who participated in Head Start but whose mothers did not. And adolescents from intergenerational Head Start families are as likely to have comparable mathematical ability, to have similar levels of self-esteem, to be an unmarried parent, to have mothers who completed high school, to have younger mothers at the time of the birth of their first child, and to have younger mothers in general as did youth who did not participate in Head Start but whose mothers did.

The most marked outcome differences are between adolescents from non-Head Start families and those from all other Head Start mother-adolescent pairs. Adolescents from non-Head Start families have the highest mathematical ability, the highest level of scholastic aptitude, the highest levels of emotional and cognitive support, the highest reading comprehension, and fewest years in poverty (except for youth who were not Head Start participants but whose mothers were). They are also the least likely to repeat a grade, to be an unmarried parent, and to have fathers who were never present. Bivariate findings in regard to reading comprehension and years living in poverty are quite robust. They remain significant when controlling for background and other factors. On the whole, such differences between non-Head Start families and all other Head Start mother-adolescent pairs suggest that graduates of Head Start do not attain comparable levels of reading comprehension nor are they as likely to reside in families above the poverty level as non-Head Starters.

Failure of Head Start graduates to achieve comparable levels of achievement on outcomes such as reading comprehension and residing in families above the poverty level suggests limitations of the Head Start program. To infer that the program is a failure on the whole, however, would be an overdrawn conclusion. After all, no differences among adolescents by Head Start mother-adolescent pairs are found on several other outcomes such as highest grade completed,



a sense of mastery, perceived health, and level of depressive symptoms. On these measures, adolescents who participate in Head Start sufficiently achieve comparability with non-Head Starters regardless of the Head Start participation of their mothers. These are no small achievements given the formidable obstacles that Head Start families face, and one could argue they are sufficient to ensure steady levels of funding and/or possible expansion of the Head Start program. To the extent Head Start families nonetheless spend more years in poverty than non-Head Start families, more direct efforts aimed specifically at eliminating poverty might be an appropriate focus of a new legislative agenda. The specifics of such an agenda go beyond the scope of this paper.

Findings also reveal that adolescents in intergenerational Head Start families have lower levels of emotional support than did adolescents who participated in Head Start but whose mothers did not. This finding suggests that mothers in intergenerational Head Start families may need additional attention in regard to parenting skills aimed at ensuring increased emotional support and at reducing the likelihood that their children will become parents during adolescence. Parents in intergenerational Head Start families in general may require parenting skill training on an as needed basis as their children develop through adolescence and young adulthood. It is possible that adolescents from intergenerational Head Start families received lower levels of emotional support because their mothers were at work or otherwise absent from the home. If that were the case, then other interventions would be necessary to ensure that whomever had responsibility for the children in the absence of the mother provided such support. Future research is needed to determine causes of the lack of emotional support found in intergenerational Head Start families so that appropriate interventions can be planned and implemented.

Findings in regard to the presence of fathers and, by extension, to family structure are mixed. Bivariate findings show that intergenerational Head Start families have a disproportionate percentage of never present fathers. Multivariate findings indicate that adolescents having a never present father had less emotionally supportive home environments, less reading comprehension, and lower levels of self-esteem and they spent more years with mothers who received public assistance payments, independently of their Head Start mother-adolescent pair group. Having a never present father, however, affects neither

cognitively supportive home environments, mathematical ability, high school grades, nor numbers of years adolescents lived with mothers in poverty or as recipients of food stamps.

These findings may provide *some*, albeit limited, support for policy makers and others extolling the benefits of marriage on children and youth, especially in regard to reauthorization of the 1996 Personal Responsibility and Work Opportunity Reconciliation Act (Bush, 2002). They suggest that the presence of fathers makes for a more emotionally supportive home environment and relates to increased reading comprehension and self-esteem of children as they reach young adulthood, but fathers' presence may be less influential in regard to how well adolescents do in school as measured by high school grades.

Further, contrary to the spirit of 1996 Personal Responsibility and Work Opportunity Reconciliation Act which equates increased dependency on welfare programs with diminished opportunities for academic and other types of success, the multivariate findings of this study suggest that time spent in families receiving public assistance payments is not a good predictor of either cognitive or emotional support in the home environment, scholastic aptitude, high school grades, or self-esteem. Additionally, the more time spent in families receiving public assistance payments, the greater an adolescent's mathematical ability and to a lesser extent reading comprehension, suggesting that concrete benefits such as cash income and food stamps make a positive difference.

This finding about public assistance payments is important in part because efforts to assess the effects of 1996 Personal Responsibility and Work Opportunity Reconciliation Act on children and youth suggest that parents' participation in its Temporary Assistance for Needy Families work-related programs adversely affect adolescents' school achievement (Morris et al., 2002). Such an adverse effect may be due to the child care problem associated with maternal employment. To the extent these mothers enroll their children in Head Start programs, then part of this problem may be attenuated. Extending welfare and related policies for marriage into the philosophy and practices of Head Start programs may have little or no effect on the academic achievement of the children.

In conclusion, this study finds that one-third of the youth who participated in Head Start programs had mothers who also participated in Head Start families. Findings suggest that graduates of Head Start may not attain comparable levels of reading comprehension nor reside as long in families above the poverty level as non-Head Starters.

Greater levels of comparability with non-Head Starters occur in regard to highest grade completed, a sense of mastery, perceived health, and level of depressive symptoms. In many ways, adolescents from intergenerational Head Start families are similar to youth who either attended Head Start or who did not but had mothers who did attend. Many adolescents who participated in Head Start remain in poor families, especially if their mothers had also participated in Head Start. The evidence nonetheless suggests that it would be incorrect to view Head Start as a failure since Head Starters successfully do achieve comparably with non-Head Starters on several of the outcome measures examined in the study.

Findings also suggest that parents and adolescents in intergenerational Head Start families can benefit by participating in on-going and as needed parent effectiveness training. The goal of such training should be to increase the likelihood of providing more cognitive and emotional support. Social service use by parents of adolescents who had participated in Head Start is unavailable in the NLSY79 data files and warrants additional study. Finally, the study suggests that a father's presence matters in regard to emotionally supportive home environments, reading comprehension, self-esteem, and receipt of public assistance payments. Provision of cash and food stamps also increases adolescent's mathematical ability. Future research should incorporate fathers of Head Starters to determine if findings from this study also apply. Further research is also needed to determine more specifically the effects of the Temporary Assistance for Needy Families program and Head Start participation on adolescents' academic achievements.

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