

Children at Risk: Effects of a Four-Year Head Start Transition Program on Special Education Identification

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Children in Head Start are at risk for school learning or behavioral problems. While Head Start has decreased special education placement, there has been little systematic data until recently on identification of children in disability categories following preschool. In this study, two cohorts of 6,162 children across 30 sites were followed through third grade. Approximately half of these children were provided transition assistance from kindergarten through third grade. This included school transition and curricular modifications, parent involvement activities, health screening or referrals, and family social services, all similar to those received in Head Start. They were compared to a similar group of Head Start children who did not receive such services beyond the Head Start experience. Special education eligibility was determined from school records in the spring of third grade. Only 0.89% of children in the transition group were identified in the mental retardation category compared to 1.26% in the non-transition group. In the category of emotional disturbance, these same figures were 1.21% and 1.65% respectively. Both differences were statistically significant, but an opposite

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effect was found in the category of speech or language impairment. Findings are discussed in relation to differences in disability categories and implications for early identification.

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Children identified as having disabilities eligible for special education comprise approximately 14% of all children in Head Start (O'Brien et al., 1997). This is considerably higher than special education identification in the general population (U.S. Department of Education, 1997); but children with Head Start or similar preschool experience have also been found to require significantly fewer special education placements on follow-up than children from low-income families without such experience (Lazar, Darlington, Murray, Royce, & Snipper, 1982). The identification of children with disabilities in the schools has changed substantially, however, since the original studies evaluating Head Start. This is especially the case for the largest and most controversial special education categories such as mental retardation (MR), learning disabilities (LD), speech or language impairments (SL), and emotional disturbance (ED) (U.S. Department of Education, 1997).

Identification of children with MR in special education has been steadily declining in recent years and is now at 1.1% of total school enrollment (U.S. Department of Education, 1997). This decline has primarily been at the expense of children with mild mental retardation, resulting from legal restrictions around use of IQ tests and overidentification of children of color (MacMillan & Forness, 1998). The category of LD continues to increase yearly and is now the largest category of special education at 5.4% of school enrollment, comprising more than half of all pupils with disabilities served under IDEA (U.S. Department of Education, 1997). Identification of children with LD in the preschool or primary grades, however, has been problematic since formal reading or mathematics skills may not be systematically taught until kindergarten or even first grade, and the required discrepancy between intelligence and measured achievement may not be readily apparent until middle elementary years (Hurford, 1994). Children with SL account for nearly two thirds of those identified for special education in Head Start (U.S. Department of Health and Human Services, 1992); but, during school years, children in this category are identified at a rate of only 2.2%, less than half the size of the LD population (U.S. Department of Education, 1997). Some speech or language impairments may well be precursors to learning disabilities; thus some shift in categorization might be expected as specific instruction in reading or related academic skills becomes more prominent in the early grades (Bowe, 1995; Snyder, Bailey, & Auer, 1994). Children with ED are identified at a rate of 0.9% (U.S. Department of Education, 1997), but there is evidence that these children are either underidentified or perhaps misidentified in other categories of special education, particularly in the early school years (Duncan, Forness, & Hartsough, 1995; Forness, Ramey et al., 1998; Lopez, Forness, Bocian, MacMillan, & Gresham, 1996).

In regard to this last category, the lack of support for mental health issues in Head Start has become a major concern (American Orthopsychiatric Association; 1994, Forness & Finn, 1993; Yoshikawa & Knitzer, 1997). Identification of children with ED has been problematic both during Head Start (Sinclair, 1993; Sinclair, Del'Homme, & Gonzalez, 1993) and upon follow up of Head Start children who appear to be at risk for emotional or behavioral disorders (Cluett, Ramey, Ramey, & Forness, 1997; Forness, Cluett et al., 1998). Referral of Head Start children to mental health or related agencies has likewise been inconsistent (O'Brien et al., 1997). Although Head Start and other early childhood programs emphasize involvement of families and referral of both families and children to related service agencies as part of early intervention, it is not always clear that such referrals are effective or that contact with service agencies is continued as these children progress through the elementary years (Forness, Kavale, MacMillan, Asarnow, & Duncan, 1996).

Concern about possible fading of Head Start effects after school entrance has led to renewed interest in continued intervention as these children complete primary education (Ramey & Ramey, 1994; Sameroff & McDonough, 1994). A longitudinal study to evaluate such transition assistance has been ongoing with a large national sample of Head Start children followed from kindergarten through third grade with emphasis on child, family, and community outcomes (Head Start Bureau, 1996; Ramey & Ramey, 1992). In this project, children and families were provided transition experiences from kindergarten through third grade that were similar to those normally provided only in Head Start. These included school transition and curricular modifications, parent-involvement activities, health screening or referral, and family social services. A comparison sample of Head Start graduates was also followed. These children presumably received a more traditional curriculum with no special effort to involve parents in their children's schooling or no special access to health or social services.

We examined identification rates for children in the major categories of special education and compared differences in these rates for children with and without a systematic Head Start transition experience by the third grade. It is not altogether clear if differential effects of the transition program will serve to accelerate referrals to special education, since individual children's needs are followed more closely, or whether the impact of these services will decrease the need for special education in a significant number of cases.

METHOD

Participants

There were 7,079 children, ages 3 to 5 at the beginning of the study, of whom 51.9% were male. Approximately half the children began kindergarten in 1992

(first cohort) and the remaining half in 1993 (second cohort). They were selected from 31 sites across the country that were chosen to be part of the National Head Start Early Childhood Transition Study (Head Start Bureau, 1996, 1999; Ramey & Ramey, 1992). This is an ongoing longitudinal project designed to evaluate the effectiveness of a multicomponent transition program on outcomes of children in Head Start. It involves the provision of developmentally appropriate curricula, screening or referral for health services, parent involvement, and family social services from kindergarten through third grade as a means to enhance further the Head Start experience. It should be noted that children from one site were omitted from this study because of problems in data collection so that only 30 sites were represented in the present analysis. Children with Head Start experience but without a transition program were also followed at each site. Total enrollment in the school districts in each site into which children were transitioned ranged, in the initial year of the project, from 203 to 939,638 (median = 3,658). By third grade, total number of classrooms into which children were transitioned ranged from 19 to 270 at each site (median = 59).

Ethnic identity of children of the 7,079 children in kindergarten was 40.7% Caucasian, 32.9% African American, 14.3% Hispanic or Latino, 2.1% Asian, 2.8% Native American, and 7.2% other (a category used primarily when children were identified with dual ethnicity). Language testing or interviews were done in the native language of the child or family when English proficiency was significantly limited. Some 17 of the 30 sites needed to make these language modifications: 17 in Spanish, 2 in Vietnamese, 2 in Hmong, 2 in Cambodian, 1 in Navajo, and 1 in Chinese and related Asian languages. Percentage of families below the poverty line according to federal criteria was 83.1%.

Instruments

School records for each child were searched in the spring of third grade, and findings were coded on the *School Archival Records Search (SARS)* (Walker, Block-Pedego, Todis, & Severson, 1991). The *SARS* allows information to be extracted and systematically coded from each child's school cumulative record in 11 archival areas, but only the following were used in the present study: Certification for Special Education, Out-of-school Referrals, Disciplinary Contacts, and Negative Narrative Comments.

In order to determine if children identified in each major special education category differed significantly between transition and non-transition groups, individual testing and teacher ratings for each subject were also conducted by project staff in the spring of third grade on the following instruments. Receptive language was assessed on the *Peabody Picture Vocabulary Test-Revised (PPVT-R)* (Dunn & Dunn, 1981). The *PPVT-R* was standardized on 5,028 children, has commercial versions in both Spanish and English, and has split-half reliability coefficients

ranging from 0.67 to 0.88. Results are expressed as a standard score with a mean of 100 and a standard deviation of 15. Academic achievement was assessed on the Reading cluster (Letter-word Identification and Passage Comprehension subtests) and Mathematics cluster (Calculation and Applied Problems subtests) of the *Woodcock-Johnson Psycho-Educational Battery-Revised* (WJ-R) (Woodcock & Johnson, 1989). The WJ-R was standardized on 6,359 children (21.4% ethnic minority representation); and its median reliability was 0.94 for the Reading cluster and 0.93 for the Mathematics cluster in the kindergarten to grade 12 range. Results are expressed by a standard score identical to that described above. Social skills and problem behaviors were rated on the teacher form of the *Social Skills Rating System* (SSRS) (Gresham & Elliott, 1990). The SSRS was standardized on 4,170 subjects (27% ethnic minority representation) and has 57 items on the teacher Social Skills subscale and 18 items on the teacher Problem Behavior subscale at the elementary (K-6) level used in the present study. Results are expressed as standard scores, but it should be noted that the *higher* the scores on Problem Behavior subscale, the more likely it is that psychopathology is present. Coefficient alpha reliabilities are 0.85 on the teacher Social Skills subscale and 0.84 on the teacher Problem Behavior subscale.

Procedures

Children from each Head Start site in the first cohort were selected in the spring of 1992 and randomly assigned to transition or non-transition classrooms for the kindergarten year beginning in September 1992. This was also done for the second cohort in the spring and fall, respectively, of 1993. The major components of the transition program will be briefly described here. These include school transition and curricular modifications, health services, parent involvement, and social services.

The school transition and curricular modifications involved development and implementation of procedures for transferring information about the child from Head Start to the kindergarten and later grades, meeting(s) with parents and teachers from each grade to the next in order to discuss each child's educational needs, ongoing informal assessment to determine the child's functional level and progress, enhanced opportunity for child-centered learning experiences in small groups or learning centers, classroom activities appropriate to various cultural groups represented at the site, and supportive services for children with limited English proficiency. Health services involved a program not only to assist parents and school staff to obtain access for each child to local health, mental health, and nutrition services but also to conduct a self-assessment of these services. Parent involvement included development and implementation of a plan to involve families in the design and operation of the overall transition program at each site, programs to assist parents and school staff to enhance developmental continuity between

Head Start and each of the later grades, individual family support plans detailing services needed and plans for providing or accessing these services, and home visits to help children and their families obtain the various health, social, and educational services for which they were eligible. Social services involved designation of an individual from local or state agencies to act as liaison to the program and provision of social services through this collaboration in employment, vocational rehabilitation, welfare, substance abuse, and the like.

Implementation of the four components depended primarily on family service coordinators at each site. Family service coordinators were usually bachelor's level staff members who reported to a master's level supervisor. They generally had a caseload of no more than 35 families. These coordinators provided teachers with access to developmentally appropriate classroom materials, prepared reports and/or meetings between parents and teachers from one grade level to the next, conducted health and related assessments for children and families, facilitated referrals to health or social service agencies, and in general coordinated most of the major daily classroom and family activities related to program implementation.

Data Collection and Analysis

Initial data on demographics and child characteristics was collected in the kindergarten year or at the child's initial entrance into the study and verified during the last data collection point in the spring of third grade for each cohort. The instruments noted above were administered in spring of 1996 and the spring of 1997, respectively, when children in both cohorts were completing third grade. These data thus reflect each child's experience over four years in either a transition or non-transition classroom. All testing was administered by research assistants, in most cases hired from the local communities, who were trained and supervised by local university evaluation teams under contract to the central research staff who received national training at University of Alabama at Birmingham (UAB) Civitan International Research Center (Head Start Bureau, 1996, 1999). All research assistants were trained according to uniform protocols developed by central project staff. Each site had a local university evaluator who received extensive training at UAB in each subsequent year of the project. East site evaluator was responsible for training of local research assistants whose performance was individually monitored throughout each phase of data collection.

Extensive data checks were conducted throughout each phase as well. Although all instruments were standardized, fidelity checks were nonetheless conducted during data collection to ascertain that standardized procedures were being followed. Data were subsequently recorded on uniform protocols at each of the local research sites for transmission to the Civitan Center where data preparation and statistical analyses were conducted. It should also be noted that a variety of

techniques were used at each site to keep families and teachers in both transition and comparison samples involved in annual data collection efforts. In addition to payment of a small fee for time involved in annual interviews and assessment forms, a number of formal and informal contacts were used by local evaluators to maintain contact with families and children in both transition and comparison classrooms each year.

Relative numbers of children identified in each category of special education were compared between transition and non-transition children and also compared with national identification rates for this age. Analyses were also done for gender or ethnic differences between children identified by category in each group. Finally, comparisons were made between children in the transition versus the non-transition group across the four major categories of special education (LD, SL, MR and ED) on psychoeducational, social skill, and school archival record variables.

RESULTS

There were 6,162 participants in the sample by the spring of third grade. They had a mean age of 8.74 years ($SD = 0.51$); and 52.1% were male. Ethnic identity was 40.6% Caucasian, 32.3% African American, 14.6% Hispanic or Latino, 2.1% Asian, 2.8% Native American, and 7.6% other. To determine whether these 6,162 participants were different from the children who were lost to the study through attrition, differences were analyzed by age, gender, and ethnicity between the remaining children and children lost from the original sample of 7,079 in kindergarten. No statistically significant differences were apparent in age or gender; thus, the sample was considered relatively representative for these two factors. There was a significant difference, however, by ethnicity. The chi-square value was 13.43 ($df = 5, p < .05$). Percentages in the remaining sample of 6,162 were 32.3% African American versus 32.9% in the original sample, and 14.6% Hispanic or Latino versus 14.3% in the original sample. Proportions of other ethnic identities remained almost identical. The loss was thus primarily in African-American participants offset with a proportionate gain in Hispanic or Latino participants, and it is possible that the sample was slightly less representative in these two ethnicity groups. The significance of such differences, where applicable, will be addressed in subsequent analyses; but it should be noted that rate of attrition did not differ by age, gender, or ethnicity between transition and non-transition groups.

In regard to psychoeducational test results and school archival record searches used to examine differences between transition and non-transition children, mean data for the entire sample ranged from mean standard scores of 88 for the *PPVT-R* and 106 for the *SSRS*: Problem Behavior subscale. Additionally, data from the *SARS* including Out-of-School referrals, Disciplinary Contacts, and Negative Comments were within the normative range. There is also a substantial range of scores for each measure.

Of the total sample of 6,162 in third grade, there were 3,221 children in the transition group and 2,941 in the non-transition group. The number of children from transition ($N = 2,800$) and non-transition ($N = 2,541$) groups for whom special education certification was recorded on the *SARS* are depicted in Table I by the various special education categories determined by school personnel. Note that the *SARS* includes the full range of eligible categories used under IDEA, along with categories likely to be used by individual states. As noted in the methods section and in the table, low-incidence physical or sensory disabilities as coded on the *SARS* were combined in this study into one category termed "physical impairments" (P) because of extremely low identification rates. On the *SARS*, designations of "noncategorical" (NC) and "developmental delay" (DD) were used in instances in which local or state school districts specifically used such broad-based categories of disability. The category of "other" was used when idiosyncratic local- or state-level categories could not be coded reliably in any other category; and, as noted in the table, there were a few children who had individual educational programs for special education but whose designated special education category was not recorded anywhere in the school record.

As shown in Table I, the percentage of children eligible for the SL category was significantly higher in the transition as compared to the non-transition group. In the MR and ED categories, there were significantly higher percentages in the on-transition group. Chi-squares were performed for each category examining identification rates by total sample, i.e., children identified versus not identified by transition versus comparison group for each category. The only statistically significant results were as follows. For SL, $X^2(1) = 4.72$, $p = .03$; for MR, $X^2(1) = 5.54$, $p = .02$; and for ED, $X^2(1) = 6.70$, $p = .01$. The comparison for

Table I. Children Identified in Special Categories Coded on *SARS* at End of Third Grade (Based on N of 2,800 Transition and 2,541 for Non-transition)

Category	Transition		Non-transition		Significance Levels
	<i>n</i>	%	<i>n</i>	%	
Learning Disability (LD)	159	5.68	118	4.65	NS
Speech-Language Impairment (SL)	146	5.21	79	3.11	$p = .03$
Mental Retardation (MR)	25	0.89	32	1.26	$p = .02$
Emotional Disturbance (ED)	34	1.21	42	1.65	$p = .01$
Physical Impairment (P) ^a	23	0.82	17	0.67	NS
Noncategorical (NC)	19	0.69	17	0.67	NS
Developmental Delay (DD)	5	0.18	3	0.12	NS
Other	119	4.25	64	2.52	$p = .052$
Total ^b	536	19.14	374	14.72	$p = .001$

^aPhysical impairment includes the categories of orthopedically handicapped, other health impairments, visual impairments, hearing impairments, multiple handicaps, and related low-incidence categories.

^bNote that totals include 6 children in transition group and 2 children in non-transition group who had individual educational plans (IEPs) but for whom *no* category was designated.

Table II. Percentage of Children Identified in Transition (T) and Non-transition (NT) Groups, and U.S. Children Identified (U.S.) by Third Grade in Major Categories of Special Education

Category	T	NT	U.S.
LD	5.68%	4.65%	1.11%
SL	5.21%	3.11%	1.62%
MR	0.89%	1.26%	0.28%
ED	1.21%	1.65%	0.16%

the “other” category approached significance, $X^2(1) = 3.86, p = .052$; but no further data were available on the breakdown of children in this category. Given these differences, the total percentage of children identified in the transition group was also significantly higher than it was in the non-transition group, $X^2(1) = 18.4, p = .001$.

To provide some perspective on the rates of eligibility obtained in this study, Table II presents the percentages for each of the four major special education categories in both groups, along with percentages for these categories from the concurrent IDEA annual report corresponding to the year in which the last cohort entered third grade (U.S. Department of Education, 1997). These data were obtained from Table AA6 of that report, in which the number of children with each disability identified in the nation’s schools is provided by age. The data then were converted to cumulative percentages of total school enrollment, corresponding to ages of children in the present study. These percentages are presented on a side-by-side basis for comparison among children in transition (T) and non-transition (NT) classrooms, and children identified across the United States (US). Data on other categories were not included in this table since comparable data in the annual IDEA report are not available. As shown in Table II, identification rates in this sample are much greater than the national average for third graders in each of the major categories.

Table III contains percentages of males and of children in each category of ethnicity for all 8 categories of special education. Note that there appears to be a predominance of males in the ED category in particular and a possible overrepresentation of African Americans in the MR category and underrepresentation of Hispanics and Asians in the MR and ED categories, even allowing for the slight attrition differences mentioned above for African American and Hispanic or Latino participants. It should be noted, however, that none of these figures differed significantly *between* transition and non-transition groups in any of the eight categories, except for a gender difference in the category of physical impairment in which there were significantly more males identified in the transition group, $X^2(1) = 4.68, p = .03$.

In order to determine if children identified for special education in the transition group differed from those identified in the non-transition group, pertinent

Table III. Gender and Ethnic Percentages by Disability Category^a

Category	Male	Cauc.	Ethnicity				Other
			Afro.	Hisp.	Asian	Nat. Amer.	
Learning disability	65.0	52.2	25.7	11.2	1.1	1.1	8.7
Speech-language impairment	64.0	40.4	34.7	15.1	2.2	1.8	5.8
Mental retardation	47.4	50.9	40.4	3.5	0.0	0.0	5.3
Emotional disturbance	84.2	56.6	31.6	2.6	0.0	1.3	7.9
Physical impairments	70.0	47.5	27.5	2.5	0.0	5.0	17.5
Non-categorical	55.6	75.0	13.9	2.8	0.0	0.0	8.3
Developmental delay	50.0	82.5	12.5	0.0	0.0	0.0	0.0
Other	60.7	49.7	18.6	21.9	0.0	4.4	5.4
Total	64.1	50.2	27.3	12.3	0.9	2.1	7.2

^aData on subjects from both transition and non-transition groups are combined in this table. The only difference between groups occurred in subjects with physical impairments in which there were more males in the transition group, significant at the .03 level (see text).

data were examined in four major categories of special education eligibility. Mean standard scores and numbers of related events from the psychoeducational testing, teacher ratings, and coding of school records for children identified as eligible for special education in the transition and non-transition groups were examined and none were significant for the LD, SL, and MR groups. However, as seen in Table IV, in the ED category, there were some differences between transition and non-transition groups in that non-transition students had significantly lower math calculation scores $t(60) = 2.437, p = .02$; and there was a tendency toward fewer discipline contacts and more negative narrative comments by their teachers, $t(13) = 1.90, p = .08$, for discipline contacts, and $t(16) = -1.65, p = .09$, for negative narrative comments.

Table IV. Psychoeducational Test Scores (*PPVT-R, WJ-R*), Teacher Ratings (*SSRS*), and Events Coded from School Records (*SARS*) for Transition ($N = 34$) and Non-Transition Subjects ($N = 42$) Identified as ED

Test or Instrument	Transition			Non-Transition		
	<i>N</i>	Mean	<i>SD</i>	<i>N</i>	Mean	<i>SD</i>
<i>PPVT-R</i>	30	84.4	14.2	38	86.1	17.4
<i>WJ-R</i> Letter-word	32	84.9	16.9	40	79.5	15.8
Comprehension	32	88.9	21.6	40	85.7	18.5
Calculation	31	86.7	22.7	39	74.0	20.3*
Applied Problems	32	89.9	21.0	39	87.2	18.5
<i>SSRS</i> Social Skills	30	84.0	13.7	40	79.8	11.9
Problem Behaviors	31	124.5	10.3	40	124.8	9.7
<i>SARS</i> Non-School Referrals	8	0.1	0.2	15	0.0	0.0
Disciplinary Contacts	14	6.2	11.0	21	0.5	1.2*
Negative Comments	8	0.4	1.1	16	4.8	10.5*

*Differences between groups significant at .02 level for Calculation, .08 for Disciplinary Contacts, and .09 for Negative Comments (see text).

DISCUSSION

Although major limitations in this study are attrition from the original Head Start sample at kindergarten entrance and missing data on various instruments in third grade, it nonetheless represents a significant opportunity to examine overall special education identification and to analyze possible effects of a transition intervention over the four years since Head Start. An important but expected finding was that children in the major categories of LD, SL, MR, and ED were identified, in both the transition and non-transition groups, at much higher proportions than the national average for children identified at this approximate age and grade. These are the four categories in which meaningful comparisons could be made with figures from the national IDEA report. The differences ranged from approximately 2 to 10 times the national average, which is to be expected in a group such as Head Start which, by definition, is at risk for higher rates of disability. The national child count for total disability identification during the Head Start years is approximately 14%, using Head Start's own definitions and criteria for disability (O'Brien et al., 1997). Across the entire special education spectrum, transition children in the present study were identified at a total rate of approximately 19.1% and non-transition children at 14.7%, a statistically significant difference.

Within the four major categories, however, there were slightly more transition children identified in the LD category, 5.68% compared to 4.65% in the non-transition group, a difference that was *not* statistically significant. The difference was significant in the SL category, with 5.21% identified in the transition group and 3.11% identified in the non-transition group. The figures for the MR category, on the other hand, were 0.89% in the transition group and 1.26% in the non-transition group and, for the ED category, were 1.21% and 1.65% respectively. Both the MR and ED differences were statistically significant.

Bear in mind that these four categories are generally considered to be primarily "judgmental" in nature, at least more so than other categories in special education, and often more controversial in relation to possible ethnic minority overrepresentation (MacMillan & Forness, 1998; MacMillan & Reschly, 1998). The category of speech or language impairment is also *the* most controversial during the Head Start year in that about two-thirds of all Head Start children with disabilities are identified in this one category (O'Brien et al., 1997; Forness & Finn, 1993). Preliminary data on subsamples of children in this study were also obtained in their first, second and third grade years without reference to their transition or comparison group status (Cluett et al., 1998; Cluett et al., 1999; Forness, Cluett et al., 1998; Forness, Ramey et al., 1998). These data suggest that the first two categories, LD and SL, tend to serve as possible triage categories. In all three years, children were assigned to research diagnostic categories based on annual individual testing and teacher ratings. These research categories were designed to indicate risk for each of the four major special education categories. Children were then followed to determine which, if any, category of special education they were

assigned by their respective public schools. During both the first and third grade years, there were substantial numbers of children considered to be primarily at risk for ED and MR who were identified by schools in either the LD or SL categories. In the second grade subsample, more than twice as many children considered to be primarily at risk for ED were actually placed in either the LD or SL categories by the schools rather than in the school ED category.

The question remains: Does a transition intervention program, such as the one described here, result in prevention of need for special education or does it serve to accelerate the detection or identification of children needing special education? In the case of the MR and ED categories, there does seem to be a prevention effect in that proportionately about 29% fewer children with MR and 27% fewer children with ED were found eligible for special education if they were in the transition group. It could be argued that children with these two disorders have a broad range of learning and social needs and that the provision of a somewhat more individualized curriculum and, possibly more importantly, screening and referral for a wide variety of health, mental health, and related family services was more likely to meet their needs than in the case of children with LD or SL. In LD and SL, disabilities are somewhat more limited in their impact to school situations, as opposed to the MR and ED categories in which disabilities tend to impact a much broader array of developmental areas at home and school. Unfortunately, it was not possible to disentangle the impact of each of the separate transition interventions, such as developmentally appropriate curricula versus access to outside agencies, on specific outcomes for each child, a limitation that is unfortunately also typical of other early childhood interventions (Johnson, LaMontagne, Elgas, & Bauer, 1998).

Although the LD differences were not statistically significant, children in the SL category appeared to need special education at significantly *higher* rates if they were in the transition group. Thus there seemed to be no prevention effect. Three hypotheses are plausible here. One is that even subtle speech or language difficulties may have been detected earlier by family service coordinators who worked closely with the transition children. Transition children were thus placed in greater numbers in this category as compared to non-transition children who did not receive such monitoring. A second hypothesis is that the transition program focused significantly on transfer of critical case information from Head Start to kindergarten and subsequently to each higher grade throughout the course of the project. Since almost two-thirds of Head Start children nationally who are identified as having a disability are determined to be eligible in the SL category, as noted in the introduction, family service coordinators and/or school staff who worked with transition children may have been hard pressed to ignore this initial determination. A third hypothesis relates to the above discussion on SL as a triage category. It may be that significant numbers of children initially determined to be eligible during Head Start in the SL, and to a certain extent in the LD, category were in

fact children primarily at risk for MR or ED whose broader learning or behavioral disorders were not recognized as such either by family service coordinators or by school staff or even parents. The perceived need of these children nonetheless led to greater special education identification, albeit in the wrong categories. A possible corollary hypothesis is that transition or other school staff may have been aware of possible learning or behavioral problems but were nonetheless loathe to label children in the MR and ED categories in which stigma has generally been viewed as more problematic than in other categories of special education (Forness & Kavale, 1997; Forness & Knitzer, 1992; MacMillan, Siperstein, & Gresham, 1996; Porter, 1999). These three hypotheses are not mutually exclusive, and other factors may have been operating as well. Although differences in the so-called minor categories such as physical impairment, noncategorical, and developmental delay were not statistically significant, the "other" category may have included significant numbers of children at risk for the major categories of LD, SL, MR, or ED. Since this is actually the third largest category in this sample, such numbers could have potentially affected significant differences in other categories. Tracking at individual sites did not allow more precise determination of which types of children were actually identified in this category. It should also be noted that gender or ethnic differences were, with one or two exceptions, not markedly different between identified children in transition versus non-transition groups but have been found in a combined subsample (including both groups) of these same Head Start children in their second grade-year (Forness, Cluett et al., 1998). Children identified as potentially at risk for the ED category in second grade tended to be Caucasian males, while females and some children of color considered to be at risk for emotional or behavioral disorders tended not to be identified in this category, especially if risk was determined primarily by parent-generated case data. Similar gender or ethnic variables may have been operating here in ways that led to misidentification. There were very few statistically significant differences on psychoeducational testing, teacher ratings, or other events between children identified in each of the four major special education categories in the transition group as compared to those identified in the non-transition group, except within the ED group.

In conclusion, the transition program, as described herein, did indeed appear to reduce the need for special education in the MR and ED categories but produced an opposite effect in the SL category and no significant differences in LD identification. That the LD and SL categories may have included significant numbers of children at risk for MR and ED is a possibility that may have either led to their higher detection in the transition group and/or to their mistaken identification in these categories. Children in the MR and ED categories in the transition group may have also benefited from family support and referrals to other agencies that served to prevent their need for special education, but numbers were too small to make a definitive analysis of the impact of these interventions. Subsequent papers

will examine possible family or related variables that may bear on rates of special education identification in this Head Start sample.

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