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Fourth Grade Outcomes of Children with a Preschool History of Developmental Disability

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Abstract: Special education outcomes were evaluated for 3,608 children (2,513 males) with a preschool history of developmental disability. Sixty-six percent of the children had an identified disability in fourth grade. The percentage of children with a disability at outcome varied across preschool disability categories from 54% to 96%. The consistency of classification at preschool and outcome was relatively high for children with trainable mental handicap/profound mental handicap (TMH/PMH), emotional handicap/severe emotional disturbance (EH/SED), specific learning disability (SLD), and autism (AT) and lower for children with educable mental handicap (EMH), speech and/or language impairment (SI/LI), and developmental delay (DD). Understanding the nature and course of developmental disabilities can inform early intervention services, service planning, and resource management.

Understanding the nature and course of developmental disabilities over time is both theoretically and clinically important. One way to improve our knowledge of developmental disabilities is to longitudinally monitor special education placement. Awareness of the future special education placement of preschoolers with disabilities can inform early intervention services, service planning, and resource management. Research in this area, however, has been largely limited to preschoolers with developmental delay and speech-language impairments.

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Developmental delay is an eligibility category that is only applicable to young children. As children mature, they must be identified with a more traditional disability to remain eligible for special education services. The majority of preschool children identified with developmental delay enter special education programs in elementary school (Bernheimer, Keogh, & Coots, 1993; Dale, Jenkins, Mills, & Cole, 2005; Delgado, Vagi, & Scott, 2006; Keogh, Coots, & Bernheimer, 1996; Mills, Dale, Cole, & Jenkins, 1995). The most common disability reclassifications for children with DD are learning handicaps, speech and language handicaps, and mild mental retardation (Bernheimer et al.; Delgado et al.; Keogh et al.).

Preschool speech-language disorders are associated with language and academic difficulties that persist throughout childhood and adolescence (Aram, Ekelman, & Nation, 1984; Beitchman, Wilson, Brownlie, Walters, & Lancee, 1996b; Johnson et al., 1999; Silva, McGee, & Williams, 1983; Stothard, Snowling, Bishop, Chipchase, & Kaplan, 1998; Young et al., 2002). A link between early speech-language impairments and later learning and reading disabilities has been well established (Catts, 1993; Leitão & Fletcher, 2004; Paul, 2000;

Silva et al., 1983; Silva, Williams, & McGee, 1987; Stothard et al.; Young et al.). Preschool speech-language impairments are also associated with later behavior problems (Beitchman et al., 1996a; Silva et al., 1987).

The long-term monitoring of preschool children with speech-language impairments has "helped speech-language pathologists to evaluate long-term prognoses, set realistic goals, develop suitable service models, and advocate appropriate social policies" (Johnson et al., 1999, p. 744). Similar benefits would be expected for the tracking of special education placements for young children with other disabilities. This study utilizes extant statewide datasets to expand our knowledge of the subsequent educational outcomes of preschool children with developmental disabilities.

Method

Database Integration

Data from the Children's Registry and Information System (CHRIS) database were integrated with Florida Department of Education public school records. Preschool disability status was obtained from CHRIS. CHRIS is a statewide database developed at the University of Miami in 1990 in response to the need to track children who receive services under IDEA, Part B. The CHRIS database contains referral, screening, evaluation, and eligibility information for preschool children throughout Florida. The data contained in CHRIS provide the Florida Department of Education with a means of documenting Child Find efforts to locate, evaluate, and provide necessary services to at-risk preschool-aged children. Outcome disability status was obtained from the Florida Department of Education public school record database. This database contains educational information (including primary exceptionality) for all children attending a Florida public school.

Database integration was accomplished using automated data linkage techniques whereby a child's unique record was identified in each database and joined across datasets to establish one record. This data linkage method was based on previously established techniques (Boussy & Scott, 1993; Newcombe, 1988; Redden, Mulvihill, Wallander, & Hovinga, 2000). Records were linked based on an exact match of a child's last name, first name, gender, and date of birth. If any of the matching variables differed, the pair was considered a non-match and was not included in the linked sample. All identifying information was removed immediately following the automated data linkage process and prior to data analysis to maintain confidentiality.

Diagnostic Criteria

Preschool disability status was defined as the primary exceptionality listed in the CHRIS database. Outcome disability status was defined as the primary exceptionality listed in the Florida public school record database. Primary exceptionality determination at both time points was based on the criteria specified in the Florida Statutes and State Board of Education Rules (2001). Criteria for eligibility vary by disability but typically involve the review of standardized assessments and other information (e.g., parent report or observations). All eligibility determinations were made at an eligibility staffing meeting and were based on Florida Statute.

Sample

The sample consisted of 3,608 children (2,513 males). The racial/ethnic distribution of the children was 59% White, 27% Black, 12% Hispanic, and 2% Other. The children were identified with one of the following developmental disabilities as a preschooler: autism (AT), developmental delay (DD), emotional handicap or severe emotional disturbance (EH/SED), educable mental handicap (EMH), speech and/or language impairment (SI/LI), specific learning disability (SLD), trainable mental handicap or profound mental handicap (TMH/PMH). All children were between the ages of 2 years, 6 months and 5 years at preschool diagnosis (average age 3 years, 11 months).

The children also attended fourth grade at a Florida public school. Outcome disability classification options were identical to those for preschool children with the exception of DD. Per Florida law, to remain eligible for special education services, all children with a DD classification must be reclassified with a

TABLE 1

Preschool disability classification by fourth grade disability classification (number of children)

	Fourth Grade Disability								
Preschool Disability	*SI/LI*	*SLD*	*EMH*	*EH/SED*	*TMH/PMH*	*AT*	*Other*	*None*	*Total*
SI/LI	437	371	46	82	9	18	134	948	2,045
SLD	12	132	12	16	6	4	10	34	226
EMH	5	24	89	5	26	8	7	12	176
EH/SED	3	17	0	66	0	6	4	18	114
TMH/PMH	0	1	12	0	60	14	7	5	99
AT	2	3	2	0	4	81	2	4	98
DD	83	233	133	69	36	48	52	196	850
Total	542	781	294	238	141	179	216	1217	3,608

traditional disability category by the age of 6 years (Florida Statutes, 2001). Preschool children with all other disability classifications studied could maintain the same classification in elementary school. At outcome, some children had primary exceptionality classifications that were not included in the preschool sample. These disabilities included orthopedically impaired, deaf or hard of hearing, visually impaired, gifted, hospital/homebound, traumatic brain injured, and other health impaired and were considered "Other" for analysis purposes.

Results

Overall results are presented in Table 1. Results which follow represent a prospective look at outcomes for preschoolers with developmental disabilities. It is also possible to examine the results retrospectively, looking from outcome back to preschool. These results will not be discussed but can be interpreted from Table 1.

Sixty-six percent of children with a preschool history of developmental disability were identified with a disability in fourth grade. The percentage of children with a disability at both the preschool and fourth grade time points varied across preschool disability categories: 54% for SI/LI, 77% for DD, 84% for EH/SED, 85% for SLD, 93% for EMH, 95% for TMH/PMH, and 96% for AT.

The distribution of outcome disability classifications by preschool disability classification are displayed in Figure 1. Children without an identified disability at outcome were not included in this figure to improve visual clarity. Therefore, the denominator for the percentages provided in the figure and referenced below was the number of children with a disability in preschool who also had a disability at outcome. The highest rates of consistency of classification were identified for children with AT. Eighty-seven percent of children identified with AT in preschool were also classified as AT in fourth grade. Consistency of classification rates for the other disabilities studied were 70% for SLD, 69% for EH/SED, 64% for TMH/PMH, 54% for EMH, and 40% for SI/LI. In Florida, DD is not available as a disability classification for children over the age of 5, and therefore, children with a preschool diagnosis of DD could not maintain the same disability classification at outcome.

The nature of changes in classification from preschool to fourth grade outcome are presented in Figure 1. Preschool children with DD, SI/LI, and EMH were the most likely to have been reclassified with another disability. For preschool children with DD who had a disability at outcome, SLD (35%) and EMH (20%) were the most common outcome classifications. Over one-third (34%) of preschool children with SI/LI who had a disability at outcome were reclassified as SLD. Preschool children with EMH who had a disability at outcome were most commonly reclassified as TMH/PMH (16%) or SLD (15%).

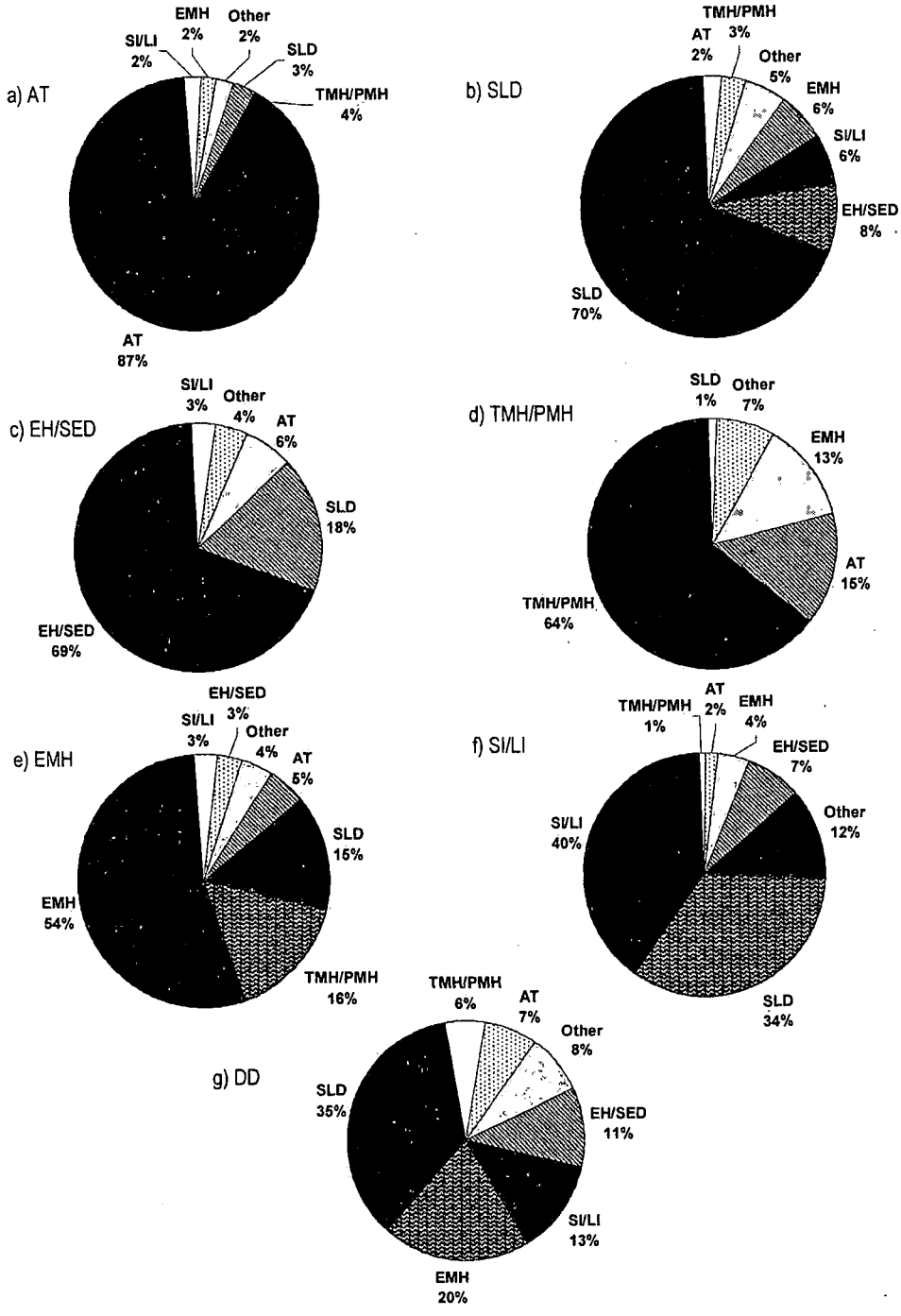

Figure 1. Distribution of outcome disabilities by preschool disability classification. For visual clarity, only children with an outcome disability are included in the pie charts. Children identified with a disability in preschool who were not identified with a disability in 4th grade are not included in this figure. AT = autism, SLD = specific learning disability, EH/SED = emotional handicap/severe emotional disturbance, TMH/PMH = trainable mental handicap/profound mental handicap, EMH = educable mental handicap, SI/LI = speech and/or language impairment, DD = developmental delay.

Discussion

The use of extant datasets enabled the longitudinal tracking of over 3,600 children with a preschool history of developmental disability. Results of the study concur with existing research in DD and SI/LI and expand our understanding of the long-term special education outcomes of children with AT, EH/SED, EMH, SLD, and TMH/PMH.

Early identification efforts are, for the most part, identifying children who will continue to meet criteria for special education services. The majority of children identified with a disability in preschool were also identified with a disability at outcome. With the exception of preschool children with SI/LI, over three-fourths of preschool children with a disability continued to have a disability at outcome. The greatest percentages were seen for the more severe disabilities, AT (96%) and TMH/PMH (95%); however, the rate for EMH (93%) was also high. Although the reason some children with a disability at preschool were not identified with a disability at outcome cannot be identified in this study, the potential role of early intervention efforts should be the focus of future research.

Although the majority of children continued to meet criteria for special education services, specific disability classifications often changed. Consistency of classification varied quite a bit across preschool disability categories.

DD is unique in that preschool children identified as DD were not able to maintain that classification at outcome. Per Florida law, all children with a preschool diagnosis of DD who continued in special education were reclassified with a traditional disability by 4th grade. The majority (77%) of children identified with DD in preschool remained in special education at outcome. The most common outcome disability classifications for preschool children with DD were SLD (35%), EMH (20%), and SI/LI (13%). These findings are consistent with previous research (Bernheimer et al., 1993; Dale et al., 2005; Delgado et al., 2006; Keogh et al., 1996; Mills et al., 1995).

Preschool classifications of SI/LI and EMH were associated with the greatest inconsistencies in disability classification at outcome. Children identified with SI/LI as preschoolers showed the lowest rates of continued special education in fourth grade (54%). Of those children identified with SI/LI in preschool who had a disability at outcome, 40% maintained the SI/LI classification and 34% were classified as SLD at outcome. The change in classification from SI/LI to SLD is consistent with previous research indicating that many children with SI/LI in preschool or kindergarten demonstrate learning and/or reading disabilities at later ages (Catts, 1993; Stothard et al., 1998). Preschool speech and language impairments have also been associated with later behavior problems and mild mental retardation (Aram et al., 1984; Beitchman et al., 1996a; Silva et al., 1987). These associations were identified in the present study with 7% of children with SI/LI in preschool who had a disability at outcome identified with EH/SED and 4% identified with EMH at outcome.

Interestingly, preschool children with EMH had one of the highest rates of continued special education in fourth grade (93%); however, only a little over half of the children who had a disability at outcome maintained the EMH classification. The remaining children were reclassified as TMH/PMH (16%), SLD (15%), AT (5%), Other (4%), EH/SED (3%), and SI/LI (3%). Although these children were identified early, changes in classification were common. Additional research is required to more fully understand the nature of the deficits of preschool children identified with EMH and the reasons for reclassification. Such research would inform and potentially improve early identification practices for EMH.

For the remainder of the disabilities studied, consistency between preschool and outcome classifications was quite high, 64% for TMH/PMH, 69% for EH/SED, 70% for SLD, and 87% for AT. The high consistency in classification for children with AT is not surprising as expression of autism symptoms is considered to be very stable (Eaves & Ho, 1996).

Although this study provides a foundation from which to build, it is important that future work examine changes in classification status in more detail to better determine which children will leave special education and which will stay as well as to determine the factors that result in changes in disability classifications.

Although the use of large, extant databases enables the tracking of large numbers of children, this method of research lacks important detail. Primary exceptionality information was available, but other information that undoubtedly plays a key role in outcomes for children with disabilities was unavailable. Additional research is needed to examine other factors important to disability outcome such as severity of impairment, exact nature of the impairment, IQ, secondary impairments, and the wide range of parent, family, and child factors that could influence child outcomes (Beitchman et al., 1996b; Catts, 1993; Eaves & Ho, 1996; O'Brien, 2001).

A better understanding of the future disabilities that children are likely to be assigned has numerous benefits. This information can assist school systems with planning and managing resources in order to provide services to these children. It can also inform early identification practices, prognostic accuracy, and the nature of the interventions provided to these children, further improving outcomes. In addition, such information can assist clinicians in making realistic plans, anticipating probable or possible difficulties, developing balanced expectations, and relaying information to parents.

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