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# Child Factors Associated With Enrollment in Part C Early Intervention Among Children Adopted From China

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The provision of services under Part C of the Individuals With Disabilities Education Act is built on a premise that children benefit from early intervention. This article presents findings from a study of children adopted from China. Given information obtained from a survey, the researchers grouped children as (a) those who received early intervention, (b) those who did not receive early intervention and whose parents had concerns about their behavior and development, and (c) those who did not receive early intervention and whose parents had no concerns about their behavior and development. Results showed that parental judgments of their children's behavior at the time of adoption best explained differences between the parents whose children received early intervention and parents who had no concerns about their children's behavior and who did not receive early intervention. The behavioral markers that differentiated the groups from one another were as follows: child affect, poor attention, eating and feeding difficulties, problems communicating, poor physical health, and social interaction problems. Findings indicate that parents' appraisals can be an important source of information for eligibility determination for this population of children.

Keywords: child behavior; parent appraisals; presumptive eligibility; Chinese adoptees

Enormous progress has been made in the past 30 years in the field of early childhood intervention (Trohanis, 2008). Both the United States and other countries have shown an increased awareness of the importance of children's early years by initiating, expanding, and improving services to those in need (Guralnick, 2008; Odom, Hanson, Blackman, & Kaul, 2003). As a result, more and more infants and toddlers are benefiting from the

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provision of supports and services aimed at helping them reach their potential. A critical prerequisite to the provision of early intervention is the use of valid and reliable identification, screening, and eligibility determination procedures for children in need of such services (Dunst, Trivette, Appl, & Bagnato, 2004; Guralnick, 2005, 2008).

In the United States, eligibility for early intervention for infants and toddlers under Part C of the Individuals With Disabilities Education Act (IDEA) is subject to state discretion; that is, each state determines its eligibility criteria for services (Dunst & Hamby, 2004; Shackelford, 2006). Although these criteria differ regarding the levels of delays, types of disabilities, and types of risk factors that qualify children for early intervention, states must have an expedient process of referral, identification, and enrollment of those who qualify for such services (Dunst et al., 2004; Gurlanick, 2008).

Referral practices for children suspected of needing early intervention have been improving and becoming more prevalent (Dunst & Gorman, 2006; Trivette & Dunst, 2007). Likewise, various developmental screening methods have proven useful for the identification of children who may need early intervention (cf. Drotar, Stancin, & Dworkin, 2008; Dunst & Trivette, 2004; Glascoe, 2003). After this initial step during the early identification process, eligibility decisions are made to determine if children qualify for services and meet the state criteria for eligibility. *Evaluation* is defined as procedures that qualified personnel use to determine children's initial and continuing eligibility for early intervention (IDEA, 2004). This component has been noted to be unnecessarily complex, often resulting in the delay of service delivery to eligible infants and toddlers (Appl, 2000) in part because of the length of time that it takes for a team evaluation to occur (Mott & Dunst, 2006).

Presumptive eligibility is one method that researchers have suggested as an alternative to the traditional multidisciplinary assessment approach to determining children's eligibility for services (Fevola, Bagnato, Matesa, & Lehman, 2006; Klein, 2003). Interventionists employing this eligibility procedure use available child or family information to determine children's potential eligibility for early intervention. In addition, children's risk factors and developmental status at the time of referral are employed in decision making. Researchers have developed an evidence-based decision-making algorithm for the use of presumptive eligibility for infants and toddlers to illustrate how entry into early intervention could be expedited for very young children (Dunst, 2006; Mott & Dunst, 2006). Rather than negate the need for a multidisciplinary assessment, this procedure allows individual family service plans to be developed and services to begin while an authentic multidisciplinary assessment process is conducted (Neisworth & Bagnato, 2004). The presumptive eligibility procedure also supports both the letter and the spirit of the IDEA in that interim individual family service plans are an allowed alternative to facilitate the provision of services when children have obvious immediate needs that are identified at the time of referral (IDEA, 2004).

One group of children for whom presumptive eligibility may facilitate enrollment into early intervention is those who are internationally adopted. Although not all internationally adopted children will qualify for early intervention, there is a much higher level of parent-reported concerns and special needs among adopted children, both nationally and internationally, compared to birth children (Howard, Smith, & Ryan, 2000). Many of the children adopted internationally resided in orphanages, and the day-to-day conditions in these settings are far from adequate for children's optimal growth and development (K. Johnson, Bangham, & Liyao, 1998). Characteristics associated with orphanages include poor health care, inadequate nutrition, exposure to infectious disease, restricted opportunities for language and cognitive stimulation, and rotating shifts of too few caregivers with limited or no training (Meese, 2005). These conditions have been linked to developmental delays (D. E. Johnson & Dole, 1999).

Researchers have shown that the length of time children spend in orphanages or other institutionalized care facilities is inversely related to positive outcomes on developmental measures (e.g., Miller, 2000; Miller & Hendrie, 2000; Rosenberg, Pajer, & Pancurello, 1992). For example, Marcovitch et al. (1997) examined children adopted from Romania and found that those who were in institutionalized care for longer periods showed less secure attachment to their adoptive parents. In another investigation, Weitzman and Avni-Singer (2005) showed that institutionalized children had less social–communicative behavior (e.g., signaling, gesturing) and less social engagement, compared to children who were never in an institutionalized setting.

Most internationally adopted children in the United States were born in China. From 1992 to 2009, American families adopted approximately 70,000 children, mostly girls. Many of these children have diverse socioemotional needs and developmental disabilities that require various types of services (Tan & Marfo, 2006; Tan, Marfo, & Dedrick, 2007). Miller and Hendrie (2000) found that of 192 children adopted from China, 75% had significant developmental delays in at least one of the following areas: gross motor, fine motor, cognitive, language, and socioemotional activities of daily living. Almost half the children (43%) had significant developmental delays in language. However, researchers have suggested that over time language delays can be remediated and children catch up with native English-speaking children of the same age (Geren, Snedeker, & Ax, 2005; Krakow, Tao, & Roberts, 2005; Roberts et al., 2005; Tan & Yang, 2005). In a large sample of preschool and school-age children adopted from China, Tan and Marfo (2006) found that Chinese girls had significantly better behavioral adjustment than that of U.S. normative samples, as based on the parental form of the Child Behavior Checklist (Tan, Dedrick, & Marfo 2007). About 5% of preschool-age children and 16% of school-age children in the sample scored in the clinical range for behavioral problems, which positively correlated with preadoption neglect and postadoption rejection behavior toward their adoptive parents.

The purpose for our study was to identify factors associated with enrollment in Part C early intervention among a group of children adopted from China. We developed a survey and tested two hypotheses. The first hypothesis was that parents of children enrolled in early intervention would report more child behavior-related problems when compared to parents with children not enrolled in early intervention and with limited or no concerns about their children's behavior. The second hypothesis was that parents of children enrolled in early intervention and parents of children not enrolled in early intervention but with concerns about their children's behavior would report similar types of child behavioral related problems.

# Method

#### **Participants**

Participants were recruited by posting an "invitation to participate" on 10 Yahoo! adoption discussion groups (all of which served a national audience) and by contacting adoption agencies and asking them to advertise the study on their e-mail Listserv or newsletter (e.g., "Families With Children From China"). In sum, 106 adoption agencies were contacted and 55 agreed to advertise the study. A letter was also posted on Yahoo! discussion and Listserv groups for adoptive parents from these agencies. The letter described the purpose of the study, the types of questions included on the survey, and an invitation to contact the investigators, by e-mail or phone, to participate in the study. A total of 415 surveys were requested and 318 surveys were returned, resulting in a response rate of 77% based on the number of parent requested surveys. Because we did not know how many parents knew about the study, we could not determine the exact sampling frame and overall response rate.

Of the 318 completed surveys, 118 (37%) were from parents whose children were receiving or had received early intervention, and 200 (63%) were from parents whose children did not receive early intervention. We divided the latter group into two groups based on whether the parents reported concerns about their children's behavior. Overall, 102 surveys (32%) were completed by parents whose children were not receiving early intervention but the parents had concerns about their children's behavior or development, and 98 surveys (31%) were completed by parents whose children were not receiving early intervention and they had no concerns about their children's behavior or development. We used these three groupings for all subsequent analyses.

Table 1 shows the background characteristics of the three groups of survey respondents. The participants in each group were similar as evidenced by percentage distributions on the background variables and nonsignificant chi-squares in all seven analyses. Half the participants were between 40 and 49 years of age and had bachelor's or master's degrees. The largest majority of the participants were married and worked outside the home either part-or full-time. Almost all the participants were White. About two thirds of the sample reported that they were Christians and about 12% reported having no formal religious affiliation. Eighty percent of the respondents reported family incomes at or above \$70,000 per year. The demographics of the survey sample were nearly identical to those reported in other studies of children adopted from China (e.g., Tan & Marfo, 2006; Tessler, Gammache, & Liu, 1999) and other countries (e.g., Hellerstedt et al., 2008; Lozano & Kossoudji, 2009).

## Survey

Study participants completed an investigator-developed survey designed to discern the background characteristics of children adopted from China and to obtain information on child behavioral markers at the time of adoption. The survey included a section asking for background information about the respondents (e.g., age, education, marital status) and other members of the family.

The survey items constituting the focus of the study included children's gender, age at adoption, the match between desired and actual adoption age, whether children were in

	Resp				
Variables	Early Intervention	Non-Early Intervention / Parent Concerns	Non–Early Intervention / No Parent Concerns	χ²	р
Parent age (years)					
3039	36	38	39		
40-49	54	58	54	2.55	.64
50+	10	4	7		
Parent education					
High school / some college	15	14	10		
Bachelor's degree	35	40	43	3.82	.70
Master's degree	32	34	33		
Doctorate	19	12	15		
Parent marital status	-				
Married	79	85	83		
Single / never married	17	12	13	1.85	.76
Other	4	3	4	1.02	
Parent work status		2	·		
Full-time	46	39	49		
Part-time	23	26	16	3.85	.43
Not working	31	35	35	5.05	. •5
Parent ethnicity		55			
Caucasian/White	92	89	98		
Asian	3	3	0	6.01	.20
Other	5	8	2	0.01	.40
Parent religion	¢.	0	-		
Protestant	29	40	39		
Catholic	29	22	32		
Christian (not specified)	11	15	17	14.99	.13
Judaism	10	9	2		
Other	6	4	2		
None	15	10	8		
Family income (yearly)	-		×*		
\$30,000-\$69,999	21	21	18		
\$70,000-\$109,999	37	37	42	2.28	.89
\$110,000-\$149,999	19	20	23		.07
\$150,000+	23	23	17		

# Table 1Background Characteristics of the ThreeGroups of Survey Respondents (in Percentages)

foster care before adoption, whether the children had a special need, and number of siblings. In addition, we investigated parental age, education, marital status, work status, ethnicity, religion, and family income, as well as the parents' ratings of the children's behavior at the time of adoption. We also asked the survey respondents about their concerns regarding their children's behavior and whether the children were enrolled in early intervention, and we used the answers to constitute the three groups of study participants described above. The child behavior markers on the survey were based on items from other surveys of parents who adopted children from China and other countries (e.g., Groze & Ileana, 1996; Tan, 2004; Tan & Marfo, 2006), the published literature on the behavior characteristics of adopted children (e.g., Glennen, 2005; Groza, 1999; Gunnar, van Dulmen, & International Adoption Project Team, 2007; Leve, Scaramella, & Fagot, 2001; Miller & Hendrie, 2000), and behaviors often used for early identification and presumptive eligibility determination (Bailey, Skinner, & Warren, 2005; D. E. Johnson & Dole, 1999; Judge, 1999; Scott, Lingaraju, Kilgo, Kregel, & Lazzari, 1993). We worded or reworded the items so that they all represented indicators of different behavioral constructs (e.g., behavioral control, attachment, social approach; Babbie, 2004). We field-tested the survey for clarity and completeness with parents and professionals, and we used feedback to make final changes to the survey items.

Survey participants rated 10 types of behavioral markers: adaptive behavior (e.g., child cooperates while dressing), affective behavior (e.g., child expresses affection toward the parent), attachment (e.g., child shows appropriate stranger anxiety), attention (e.g., child focuses on people and things), behavior control (e.g., child has uncontrolled crying episodes), communication (e.g., child attempts to communicate with others), physical development (e.g., child's height and weight), eating and feeding, social behavior (e.g., child seems to enjoy being around other people), and sleep patterns (e.g., child has difficulty sleeping). Respondents assessed each behavioral marker on a 5-point scale (1 = much worse than I expected, 5 = much better than I expected). Factor analyses of behavioral marker categories including 3 or 4 items all produced single-factor solutions. For our sample, coefficient alpha for the 10 types of behavioral markers ranged from .71 to .88, showing adequate internal consistency for subscales including only a few items (Nunnally, 1978). The average score of the items in each category was the dependent measure in the analyses (described below).

Inasmuch as the parents completed the surveys at varying times following the adoption of their children, we performed preliminary analyses to determine if parents' child behavioral marker ratings were related to how much time had passed since the children's adoption. We calculated the average amount of shared variance between time since adoption and each of the 10 sets of parents' ratings,  $r^2 = .01$  (SD = .01), and we conducted a multiple regression analysis between time since adoption and all 10 child behavior markers,  $R^2 = .06$ , F(10, 307) = 1.03, p = .42. As such, parents' ratings were not influenced by time since adoption.

#### Analysis

We determined the extent to which enrollment in early intervention and parents' concerns about their children's behavior and development were related to child background characteristics or behavior markers at the time of adoption, by conducting a series of between-group comparisons with the background and behavioral marker measures as the dependent variables. We assessed the relationship between the three groups of study participants and the child background characteristics using a series of chi-square analyses. We also assessed the relationship between study participant groups and the behavioral marker measures by a series of one-way analyses of variance. Following overall tests between groups, we assessed differences with two orthogonal contrasts. Specifically, we examined early intervention versus no early intervention but parent concerns and early intervention versus no early intervention and no parent concerns. We used Cohen's d effect sizes to determine the strength of the relationship for the orthogonal contrasts. Given that we performed multiple comparisons, we employed the Bonferroni method not only to decrease the likelihood of false-positive results (i.e., Type I error rate) but also to assess the between-group and orthogonal-contrasts significance at an adjusted alpha level. Specifically, for both the omnibus and orthogonal tests, we used an alpha of .05 divided by 10 comparisons (i.e., adjusted alpha level of .005).

# Results

#### **Background Measures**

Table 2 shows the results of the analyses of whether the children differed on their background characteristics. Child age at adoption was the only background variable that was significantly related to group membership: Children who were receiving early intervention were more likely to be adopted at a slightly older age (Cohen's d = .18).

### **Behavioral Markers**

Table 3 shows the findings from the 10 sets of analyses of the behavioral marker measures. Four behavioral marker measures were significantly related to overall between-group differences: attention, communication, physical development, and eating and feeding. The orthogonal contrasts showed that parents rated children receiving early intervention as having more difficulties in five areas, compared to children not receiving early intervention and for whom the parents had no concerns: child affect, attention, communication, physical development, and eating/feeding. In the five analyses, the parents of children receiving early intervention gave their children lower ratings indicative of more problems than did parents without early intervention and with no concerns. In contrast, we found only one significant difference, eating/sleeping, between the children receiving early intervention and the children not receiving early intervention but whose parents had concerns about their children's behavior.

Using effect size estimates as a metric for ascertaining the strength of the relationship among measures, we calculated the differences between children receiving early intervention and the children not receiving early intervention for whom parents had no concerns: eating/feeding (d = .64), attention (d = .51), communication (d = .48), and physical development (d = .48). The effect size estimates for affective behavior (d = .33), adaptive behavior (a = .24), and social behavior (d = .23) were modest but above Cohen's benchtrick ((1.68)) for a small effect, or .20. For cating feeding – the only significantly different behavioral marker measure between the children receiving early intervention and the hildren not receiving early intervention but for whom the parents had concerns – the effect size estimate was d = .33. Two other behavioral marker measures were at or slightly above Cohen's threshold of .20: physical development (d = .22) and communicatrick d = .20 metrics.

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Table 2 Background Characteristics of the Three Groups of Study Participants (in Percentages)

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The pattern of results supports our hypotheses. For several important behavioral markers, patents' ratings of their children's behavior differentiate children receiving carty intervention and children not receiving early intervention whose parents had no concerns about their children's behavior. In contrast, parents' ratings on multiple behavioral markers are their children's behavior. In contrast, parents' ratings on multiple behavioral markers are their children's behavior. In contrast, parents' ratings on multiple behavioral markers are their children's behavior. In contrast, parents' ratings on multiple behavioral markers are their children's behavior. In contrast, parents' ratings on multiple behavioral markers are their children's behavior. In contrast, parents' ratings on multiple behavioral to second the transfers are about to receiving early intervents intervents in the second to be the second to be and the second behavior at the second behavior to be the second to be behavior. In the second behavior to be the second behavior to behavior to be the second

Variables								Orthogonal Contrasts				
	EI		CON		NOC		Between-	EI vs. NOC		EI vs. CON		
	М	SD	M	SD	М	SD	Group ANOVA	ANOVA	d	ANOVA	d	
Adaptive behavior	2.91	0.94	3.02	0.60	3.13	0.64	1.23	2.46	.24	0.60	.12	
Affective behavior	3.15	0.96	3.24	0.95	3.53	0.88	4.44*	8.37*	.33	0.46	.08	
Attachment	3.25	0.97	3.31	0.97	3.38	0.86	0.53	1.06	.12	0.28	.06	
Attention	3.19	0.97	3.39	0.90	3.73	0.73	10.14***	20.12***	.51	2.89	.19	
Behavior control	3.08	1.01	3.21	0.96	3.30	0.85	1.39	2.72	.19	0.94	.11	
Communication	2.80	0.85	2.99	0.82	3.30	0.81	8.94**	17.82***	.48	2.94	.20	
Physical development	2.59	0.98	2.86	1.01	3.18	1.03	8.95***	17.90***	.48	4.00	.22	
Eating/feeding	2.74	1.36	3.24	1.37	3.74	1.06	16.32***	32.50***	.64	8.62*	.33	
Socialization behavior	3.05	0.84	3.23	0.87	3.28	0.74	2.40	4.06	.23	2.85	.19	
Sleep patterns	3.39	1.19	3.36	1.32	3.61	1.15	1.24	1.71	.15	0.03	.02	

 Table 3

 Means and Standard Deviations of the Child Behavioral

 Markers in the Three Groups of Study Participants

Note: E1 = early intervention; CON = non-early intervention / parent concerns; NOC = non-early intervention - no parent concerns; ANOVA = analysis of variance.

Bonferroni adjustment for multiple comparisons for 10 variables with adjusted alpha of .05/10 = .005. \*p < .005. \*\*p < .001.

early intervention and having with parents having concerns about their behavior. Indeed, for us, the number of concerned families who were not receiving early intervention is surprising. Moreover, the findings indicate that parents' judgments of their children's behavior may be important information for early identification and presumptive eligibility into early intervention (Trivette, O'Herin, & Dunst, 2009).

That parents of children enrolled in early intervention and parents of children not enrolled in early intervention but who had behavioral concerns are more similar on children's behavior ratings supports our hypotheses. Because both groups of parents reported concerns about their children's behavior at the time of adoption, we conducted a post hoc examination of the parents' descriptions of the circumstances surrounding their concerns, using other survey data that were responses to questions about what they did or did not do if they had concerns or whether someone pointed out concerns about the children's behaviors. We found that (a) the set of families not using early intervention did not seek any professional advice about a need for services or (b) the professionals who did come into contact with the children (e.g., physicians) did not raise any questions about the need for early intervention. One reason for this may be the fact that certain families and professionals have had experiences with internationally adopted children and subsequently employed a "wait and watch" approach to the children's adjustment and adaptation to the their newly enriched environmental, developmental, and health supports (e.g., nutrition, adequate clothing, attention, attachment) before seeking intervention. Indeed, researcher have cited adoption as an intervention of note (cf. van IJzendoorn, Juffer, & Poelhius, 2005). A second reason may be that families took advantage of several informal professional and family-to-family mechanisms on child adjustment and development available to them through the Internet or adoption agencies. A third reason may be that these families used time in the adoptive homes and the naturalistic interventions in homes or communities to resolve children's developmental or behavioral issues. And, of course, it may be a combination of all three that contributed to the fact that some families did not access formal interventions and supports after returning from China with their children. A major factor overall may be that the common family demographics (e.g., highly educated, relatively affluent older parents) of those who adopt from China contributed to their seeking alternative options to formal interventions and supports.

Researchers have primarily focused on differences in the language, communication, and attachment behavior of adopted children (e.g., Judge, 2004; Juffer & van IJzendoorn, 2005; Pollock & Price, 2005; Roberts, Pollock, & Krakow, 2005). Our study adds to extant research by demonstrating that parents may be able to detect behavioral and developmental difficulties of adopted children and that such difficulties appear to differentiate children who do and do not receive early intervention and whose parents do and do not have continued concerns. Specifically, we found parental ratings of problems communicating, eating and feeding difficulties, poor attention, and poor physical health among children receiving early intervention and whose parents did not have concerns about their children's behavior and development. In addition, differences for children receiving early intervention and children not receiving intervention but with parents who were concerned were less common (i.e., only for eating/feeding, or 1 of 10 behavioral markers). Whereas the use of parents as informants during the screening component of early intervention is not new (e.g., Diamond & Squires, 1993; Glascoe, 1998; Henderson & Meisels, 1994; Ireton & Glascoe, 1995), we are encouraged that families may contribute important information about their children's need for interventions and should be used as critical informants when a presumptive eligibility process is used for enrollment into early intervention (cf. Trivette et al., 2009). Dunst (2006) identified risk conditions, diagnoses, and conditions to be considered in presumptive eligibility decisions, and in a retrospective study of a group of children in North Carolina, Mott and Dunst (2006) documented that when presumptive eligibility decisions were not made, it took more than the 45 days allowed under IDEA to enroll many children into early intervention services. If presumptive eligibility had been used for this group of children, the delivery of early intervention services, supports, and resources may have been expedited and so increased the chances of their receiving services. We believe that the category of children who have been internationally adopted, combined with additional information from families, such as preadoptive placement (orphanage versus foster home) and age at adoption, should be added to a list of child factors employed to improve presumptive eligibility and thus used to expedite early intervention services.

As with all children who demonstrate delays, what is of most interest is the point at which is intervention warranted and what practices should be used to achieve optimal outcomes. The population of international adoptees is unique in many aspects. Most have experienced extreme environmental deprivation, biological insults to development both before and after birth (lack of nutrition, medical care), exposure to a language other than English, lack of connection or attachment to a caregiver or other children, and adoption into a family and home in which the circumstances (albeit improved) are radically different. It seems obvious that stress will occur for a period that is individual to each child and his or her family in regard to the necessary accommodations to these new and threatening circumstances (e.g., sleeping in a bed, travel on a plane, new faces and facial features to adapt to). Our study, combined with the information on the probability of remediation of this population's delays, suggests that a next line of inquiry should be the most optimal model of early intervention practices for adopted children from other countries. The families have begun to demonstrate accuracy of their judgment of their children's needs. One hopes that early interventionists, with high-quality individualized family services plans, could capitalize on family strengths and continue to build family competence and confidence with the children by implementing recommended early intervention practices that support the parents' role as the primary facilitators of their children's health, attachment, and development (cf. Bruder, 2001; Dunst, Bruder, Trivette, & Hamby, 2006; Dunst, Bruder, Trivette, Hamby, & Raab, 2001).

## Limitations and Implications for Future Research

As with most surveys, a limitation of this study is the fact that the families selected to participate in the survey or not. Hence, the reported return rate does not accurately portray the actual response rate, which is presumably much lower. However, the adoptive population is hard to identify and contact, and to our knowledge, no known database exists of families who have adopted from China; therefore, Listserv and Web postings were useful in recruiting parents for this study. In addition, the survey lacked specific, detailed information about why some children and families were not receiving early intervention. Future researchers should carefully investigate service utilization patterns of families who have concerns about their children's development and behavior but whose children are not receiving early intervention services. The survey questions were retrospective; as such, there is concern in terms of respondents' remembering past behavior. However, the retrospective assessments were about especially salient family events that parents are highly likely to remember, which may make their recall more accurate. Nevertheless, we recognize that a prospective longitudinal study will provide more informative data about families who adopt children from other nations. Our basic findings from this study indicate that parents' concerns about the behavior of their adopted children may be especially useful for professionals when they assess whether children are eligible for early intervention.

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