

National Academy of Sciences *Committee on Educational Interventions for Children with Autism*

Conclusion and Recommendations

(The following is an adapted excerpt from Chapter 16, Conclusions and Recommendations, (pp. 211-229), National Research Council (2001) *Educating Children with Autism*. Committee on Educational Interventions for Children with Autism. Catherine Lord and James P. McGee, eds., Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

Diagnosis, Assessment, and Prevalence

Conclusions

The committee concluded that autism, a developmental disorder of neurobiologic origin, is best viewed as a spectrum of disorders varying in symptom severity, age of onset, and association with other disorders.

“The large constellation of behaviors that define autistic spectrum disorders—generally representing deficits in social interaction, verbal and nonverbal communication, and restricted patterns of interest or behaviors—are clearly and reliably identifiable in very young children to experienced clinicians and educators. However, distinctions among classical autism and atypical autism, pervasive developmental disorder-not otherwise specified, and Asperger’s disorder can be arbitrary and are often associated with the presence or severity of handicaps, such as mental retardation and severe language impairment.”

Children with ASD require early identification; there is “some evidence that earlier initiation of specific services for autism spectrum disorders is associated with greater response to treatment.” The committee concludes that there are compelling reasons to identify children with ASD, even as young as two years of age and that well-intentioned efforts to avoid labeling the disability result in depriving children of needed specialized services.

Recommendations

1-1 Children with an autism spectrum disorder should be eligible for special education services within the category of *autistic spectrum disorders*, as opposed to other terminology used by school systems, such as other health impaired, social emotionally maladjusted, significantly developmentally delayed, or neurologically impaired.

1-2 A multidisciplinary evaluation, conducted by a team of professionals experienced in ASD, is recommended for the assessment of social behavior,

language and nonverbal communication, adaptive behavior, motor skills, atypical behaviors, and cognitive status.

1-3 Early intervention teams charged with the identification of very young children with special needs should be trained in identifying the “red flags of autistic spectrum disorders” as well as in referring for a comprehensive diagnostic evaluation.

Role of Families

Conclusions

Families should be involved in the education of young children with ASD as both advocates and as participating partners in and agents of their child’s education. Educators should implement a family-oriented orientation that considers the needs and strengths of the family as a unit. “Nearly all empirically supported treatments reviewed by the committee included a parent component, and most research programs used a parent-training approach.” (p. 215)

Recommendations

2-1 “Parents’ concerns and perspectives should actively help to shape educational planning.” The IEP team should provide parents, at the outset of the assessment process, written information on the characteristics of ASD, “best practice” alternatives in early intervention, sources of funding and support, as well as their child’s rights.

2-2 Early intervention programs serving children from birth to age 3, should be provided with training so that they learn strategies for teaching their child new skills and reducing challenging behaviors. In addition to training sessions, there should be ongoing consultation to problem-solve with the family.

2-3 Families who experience stress related to raising their children with ASD should be offered mental health support services; such services should be extended to include the families at least until their children reach age 8 years.

Goals for Educational Services

Conclusions

“The appropriate goals for educational services are the same as those for other children: personal independence and social responsibility.” (p. 216)

“Studies have reported substantial changes in large numbers of children in intervention studies and longitudinal studies in which children received a variety of interventions. Even in the treatment studies that have show the strongest gains, children’s outcomes are variable, with some children making substantial

progress and others showing very slow gains. The needs and strengths of young children with autistic spectrum disorders are very heterogeneous. Although there is evidence that many interventions lead to improvements and that some children shift in specific diagnosis along the autism spectrum during the preschool years, there does not appear to be a simple relationship between any particular intervention and 'recovery' from autistic spectrum disorders. Thus, while substantial evidence exists that treatments can reach short-term specific goals in many areas, gaps remain in addressing larger questions of the relationships between particular techniques, child characteristics, and outcomes." (p. 217)

Recommendations

- 3-1 Educational objectives should include the following:
- a. social skills to enhance participation in family, school, and community;
 - b. expressive verbal language, receptive language, and nonverbal communication skills;
 - c. a functional symbolic communication system;
 - d. increased engagement and flexibility in developmentally appropriate tasks and play, including the ability to attend to the environment and respond to an appropriate motivational system;
 - e. fine and gross motor skills used for age appropriate functional activities, as needed;
 - f. cognitive skills, including symbolic play and basic concepts, as well as academic skills;
 - g. replacement of problem behaviors with more conventional and appropriate behaviors; and
 - h. independent organizational skills and other behaviors that underlie success in regular education classrooms (e.g., completing a task independently, following instructions in a group, asking for help) (p. 218)
- 3-2 It is recommended that educators conduct ongoing measurement of progress toward objectives, with adjustments made as needed.

Characteristics of Effective Interventions

Conclusions

"Characteristics of the most appropriate intervention for a given child must be tied to that child's and family's needs." (p. 218)

Primarily for preschool programs, the committee concluded that the following features are critical:

- entry into intervention programs as soon as an autism spectrum diagnosis is seriously considered;
- active engagement in intensive instructional programming for a minimum of the equivalent of a full school day, 5 days (at least 25 hours) a week, with full year programming varied according to the child's chronological age and developmental level;

- repeated, planned teaching opportunities generally organized around relatively brief periods of time for the youngest children (e.g., 15-20 minute intervals), including sufficient amounts of adult attention in one-to-one and very small group instruction to meet individualized goals;
- inclusion of a family component, including parent training;
- low student/teacher ratios (no more than two young children with autism spectrum disorders per adult in the classroom); and
- mechanisms for ongoing program evaluation and assessments of individual children's progress, with results translated into adjustments in programming.

A number of strategies from a variety of programs are recognized--discrete trials, incidental teaching, structured teaching, "floor time", and individualized environmental modifications, including schedules. The critical element is that the environmental and educational strategies allow implementation of appropriate goals.

Recommendations

The committee's examination of empirical results, data from representative programs, and information in general educational and developmental literature, yielded the following recommendations:

4-1 Based on a set of individualized, specialized objectives and plans that are systematically implemented, educational services should begin as soon as a child is suspected of having an autistic spectrum disorder. Educational services should include a minimum of 25 hours a week, 12 months a year, in which the child is engaged in systematically-planned, developmentally appropriate educational activities aimed toward identified objectives. Where this activity takes place and the content of the activity should be determined on an individual basis, depending on characteristics of both the child and the family.

4-2 A child must receive sufficient individualized attention on a daily basis so that individual objectives can be effectively implemented; individualized attention should include individual therapies, developmentally appropriate small group instruction, and direct one-to-one contact with teaching staff.

4-3 Assessment of a child's progress in meeting objectives should be used on an ongoing basis to further refine the IEP. Lack of objectively documentable progress over a 3 month period should be taken to indicate a need to increase intensity by lowering student/teacher ratios, increasing programming time, reformulating curricula, or providing additional training and consultation.

4-4 To the extent that it leads to the specified educational goals (e.g., peer interaction skills, independent participation in regular education), children should receive specialized instruction in settings in which ongoing interactions occur with typically developing children.

- 4-5 Six kinds of interventions should have priority:
- a. Functional, spontaneous communication should be the primary focus of early education. For very young children, programming should be based on the assumption that most children can learn to speak. Effective teaching techniques for both verbal language and alternative modes of functional communication, drawn from the empirical and theoretical literature, should be vigorously applied across settings.
 - b. Social instruction should be delivered throughout the day in various settings, using specific activities and interventions planned to meet age-appropriate, individualized social goals (e.g., with very young children, response to maternal imitation; with preschool children, cooperative activities with peers).
 - c. The teaching of play skills should focus on play with peers, with additional instruction in appropriate use of toys and other materials.
 - d. Other instruction aimed at goals for cognitive development should also be carried out in the context in which skills are expected to be used, with generalization and maintenance in natural contexts as important as the acquisition of new skills. Because new skills have to be learned before they can be generalized, the documentation of rates of acquisition is an important first step. Methods of introduction of new skills may differ from teaching strategies to support generalization and maintenance.
 - e. Intervention strategies that address problem behaviors should incorporate information about the contexts in which the behaviors occur; positive, proactive approaches; and the range of techniques that have empirical support (e.g., functional assessment, functional communication training, reinforcement of alternative behaviors).
 - f. Functional academic skills should be taught when appropriate to the skills and needs of a child.

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