Executive Summary:

Evidence-Based Practices for Children, Youth, and Young Adults with Autism

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The National Clearinghouse on Autism Evidence and Practice (NCAEP) conducted the third iteration of a systematic review that examined the autism intervention literature, extending the coverage to articles published between 1990 and 2017. This report describes a set of practices that have clear evidence of positive effects with autistic children and youth. The intervention practices examined had to be behavioral, clinical, developmental, and/or educational in nature. We also provide information about the study designs, participant characteristics, associated outcomes and implementation characteristics of the interventions.

Key Findings

These findings are based on synthesis of 545 new studies combined with 427 studies from the previous review, yielding a total of 972 articles focused on intervention practices for individuals with autism between birth and 22 years of age.

- The classification of these 972 articles led to 28 evidence-based practice categories.
- There are five new EBP categories in this review: Augmentative and Alternative Communication, Ayres Sensory Integration®. Behavior Momentum Intervention, Direct Instruction, and Music-Mediated Intervention.
- A set of manualized interventions grouped within established EBP categories now themselves have sufficient evidence to be classified as evidence-based: PECS®, PRT, JASPER, Milieu Training, Project ImPACT, Stepping Stones/Triple P, Social Stories™, PEERS®, Mindreading, and FaceSay®.

An earlier version of this report referred to Ayres Sensory Integration® (ASI®) as Sensory Integration® (SI). To clarify the practice for which our review found evidence, we have updated the terminology in this report to ASI®.

National Clearinghouse on Autism Evidence and Practice Review Team

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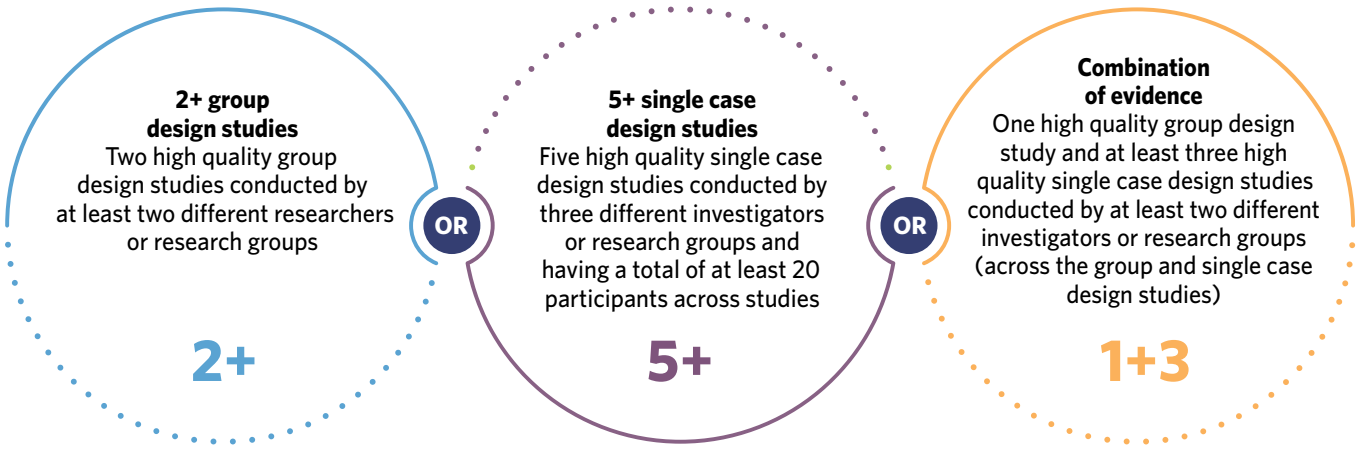
The National Clearinghouse on Autism Evidence & Practice
NCAEP • BRIDGING SCIENCE AND PRACTICE

Evidence-Based Practices

- Antecedent-Based Interventions
- Augmentative and Alternative Communication
- Ayres Sensory Integration®
- Behavioral Momentum Intervention
- Cognitive Behavioral/Instructional Strategies
- Differential Reinforcement of Alternative, Incompatible, or Other Behavior
- Direct Instruction
- Discrete Trial Training
- Exercise and Movement
- Extinction
- Functional Behavioral Assessment
- Functional Communication Training
- Modeling
- Music-Mediated Intervention
- Naturalistic Intervention
- Parent-Implemented Intervention
- Peer-Based Instruction and Intervention
- Prompting
- Reinforcement
- Response Interruption/Redirection
- Self-Management
- Social Narratives
- Social Skills Training
- Task Analysis
- Technology-Aided Instruction and Intervention
- Time Delay
- Video Modeling
- Visual Supports

Find the EBP definitions at http://go.unc.edu/2020EBPs.

Figure 1. Criteria for qualification as an evidence-based practice



Study Design: Single case design studies made up 83% of the articles and group design studies made up 17% of the 972 articles. The percentage of group studies was higher for the recent review period, comprising 23% of the articles compared to only 9% of the articles in the previous review.

Participant Age: Most studies across review periods were conducted with 3-5-year-olds and 6-11-year-olds. However, in the more recent review period, there were substantial increases in studies conducted with 12-14-year-olds and 15-18-year-olds. Fewer studies were conducted with participants from birth-35 months and 19-22-year-olds.

Figure 2. Age of participants across review periods

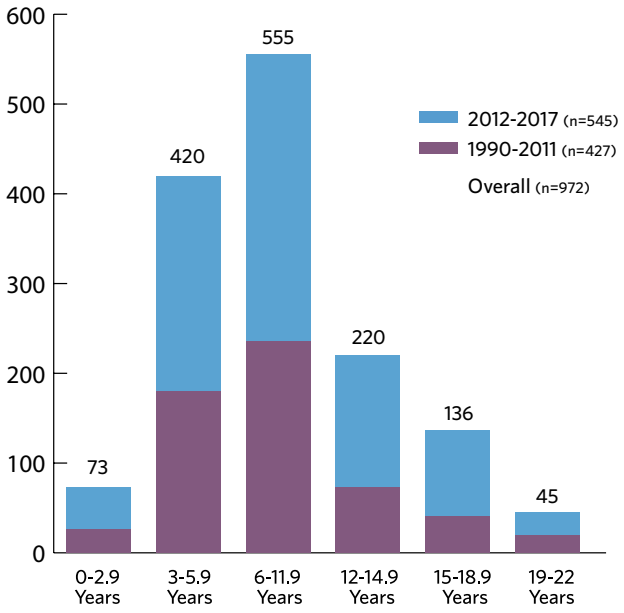
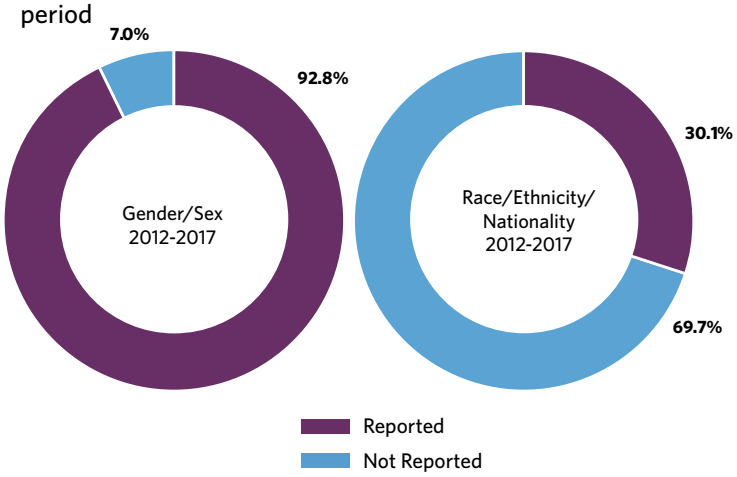


Figure 3. Percentage of studies reporting gender/sex and race/ethnicity/nationality data in 2012-2017 review period



Participant Gender: Data on the gender or sex of the participants were reported in 93% of studies in the 2012-2017 review period. In studies that reported this data, 84% of participants were male.

Participant Race/Ethnicity/Nationality: Less than 1/3 of all studies in the 2012-2017 review period reported data on race/ethnicity/nationality. For studies that reported data, about 6 out of every 10 participants were White and 1 out of every 10 participants were Black. All other groups had less than 10% representation among participants.

Participant Outcomes: There were 13 different types of outcomes reported in this review. Target skills relating to communication, social skills, and challenging behaviors were the most frequently reported outcomes. When examining differences between the two review periods, there were notable increases in studies that successfully targeted academic/pre-academic skills, vocational skills, and mental health.

- Communication
- Social
- Joint attention
- Play

- Cognitive
- School readiness
- Academic/ Pre-academic

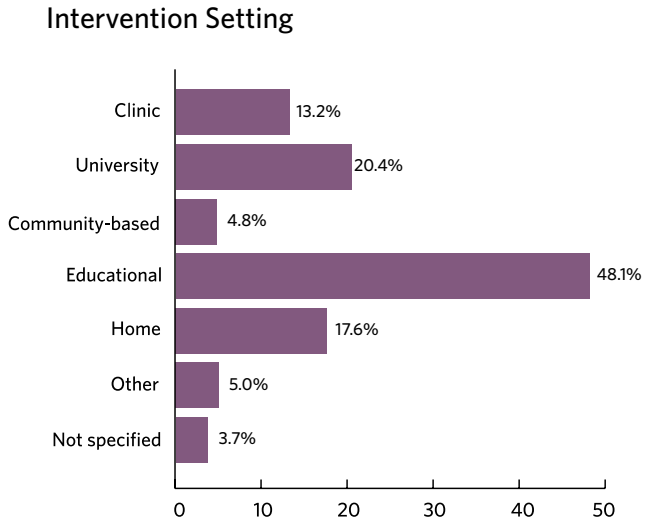
- Adaptive/self-help
- Challenging behavior
- Vocational
- Motor

- Mental health
- Self-determination

Intervention Implementers: Implementers were primarily research staff, serving as interventionists in 52% of studies and coaches in 10% of studies. Educators and related service providers were each identified as implementers in 20% of studies, and parents were noted as implementers in 10% of studies.

Intervention Settings: About half of all studies occurred in educational settings, with fewer numbers occurring in clinic, university, community-based, and home settings. Nearly 4 out of every 5 studies were conducted in individual sessions (i.e., one-on-one).

Figure 4. Percentage of studies by intervention setting in 2012-2017 review period



Moving from Research to Practice: For families or practitioners interested in using the identified evidenced-based practices, the Autism Focused Intervention Resources and Modules (AFIRM) website has free eLearning modules that describe EBP procedures, steps for implementing the practices, fidelity checklists and more (**https://afirm.fpg.unc.edu**). The new information from this review will be used to update the modules to reflect the most current scientific information about focused intervention practices.

AFIRM Autism Focused Intervention Resources & Modules

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