Evidence-Based Communication Interventions for Persons with Severe Disabilities
National Joint Committee for the Communication Needs of Persons with Severe Disabilities (NJC)

What is the evidence base for communication interventions for school-age individuals with severe disabilities?

Method

Electronic Databases Searched:

- CINAHL
- Combined Health Information Database
- ERIC
- Education Abstracts
- Exceptional Child Education Resources
- Health Source: Nursing
- Linguistics and Language Behaviour Abstracts
- PsycARTICLES
- PsycINFO
- PubMed
- Science Citation Index
- ScienceDirect
- Social Science Citation Index

Search Criteria:

- English language only
- Date of publication 1975 to 2006
- No case studies
- Intervention studies only
- Participants having a severe disability- including persons with severe to profound mental retardation, autism, and other disorders that result in severe socio-communication and cognitive communication impairments

Search terms included:

Augmentative or Alternative Communication (AAC); Augmentative Communication; Communication; Emergent communication; Nonsymbolic communication; presymbolic communication; Emergent symbolic communication; Intentional communication; Speech Generating Devices (SGDs); Mental Retardation; Autism; Autistic Spectrum Disorders (ASD); Pervasive Developmental Disorders (PDD, PDD-NOS); Rett’s Syndrome; Childhood Disintegrative Disorder; Developmental Disabilities; Handicap; Traumatic Brain Injury; Cognitive impairment; Severe disabilities; Severe and/or profound disabilities; Multiple disabilities; Sociocommunication; cognitive communication impairment; Early intervention; Literacy; Language – verbal, nonverbal, expressive, receptive, written…
47 studies that met above criteria and that had at least one participant of school age (birth to 21) were reviewed for this poster

- An annotated bibliography for all 47 articles is available from the ASHA website.

**Article review procedures**

- Each committee member reviewed 5 articles and entered results into Zoomerang© Survey Software.
- Reliability established for 20% articles using consensus procedures

**Results**

**When were the studies published?**

- 5 between 1975-1985
- 16 between 1986-1995
- 26 between 1996-2006

**Chronological ages**

- Birth - 5 years
- 6 years - 11 years
- 12 years - 17 years
- 18 - 21 years
- 21 years and older

**Type of Disability** (note these categories are not exclusive)

- Developmental delay (for 0 - 8 range)
- Severe / Profound intellectual disability (mental retardation)
- Cerebral Palsy
- Autism
- Emotional or behavioral disorders
- Traumatic brain injuries
- Sensory impairments
- Multiple disabilities
- Other, please specify

**What were the intervention goals?**

- Improvement in expressive communication
- Improvement in interaction or conversation
- Improvement in communication comprehension
- Spontaneous communication
- Other, please specify

Six articles also measured conversational goals such as initiating questions, turn taking or maintenance of interaction

**Expressive Goals**

- 1-word/symbol
- Multiword/symbol
- Prelinguistic

**Communication forms targeted** (not exclusive categories)

- Gesture
- Speech
- Vocalizations
- PECS
- Sign
- Eye gaze
- Graphic symbol
- VOCA
- Other, please specify
Communication functions targeted

- Regulate the behavior of others (request, protest, etc)
- Engage another in social interaction (greet, initiate social routine, etc)
- Establish joint attention (comment, direct attention to something of interest, etc)

What were the characteristics of the interventions?

- Instructional methods
  - ABA, discrete trial instruction
  - Instruction embedded in ongoing activities

Who provided intervention?

- Experimenter
- Teacher
- Other, please specify
- Parent
- Peer
- Sibling
- Paraprofessional
- SLP

Where did intervention take place?

- Classroom
- Therapy room
- Home
- Community

Examples of "other" included cafeteria, playground, hallway and bathroom

How often was intervention provided?

- 2 or more times daily, 7 days/week
- 2 or more times daily, Mon - Fri
- Less than once a week
- Once a week
- 2 - 4 times per week
- Once daily
- More than once a week

What was the length of intervention?

- Less than one month
- 1 - 2 months
- 2 - 6 months
- More than 2 years
- 1 - 2 years
- 6 months
- 1 year

*Other* included a number of sessions or trials to criterion without a corresponding calendar length.
Study Design Elements

- 91% studies reported inter and/or intra rater reliability
- 20% studies measured social or ecological validity
- 33% studies measured fidelity of treatment

What is the quality of evidence according to National Research Council Standards (National Research Council, 2001)?

### Internal Validity: Control for factors such as maturation, expectancy, experimenter artifacts

- Prospective study comparing the intervention to an alternative intervention or placebo in which evaluators of outcome are blind to treatment status
- Multiple baseline, ABAB design, or reversal/withdrawal with measurement of outcome blind to treatment status or blind to treatment with independent evaluation
- Prospective or historical design or multiple baseline, ABAB, reversal/withdrawal not blind to treatment conditions
- Other, Please Specify

### External Validity/Selection Biases

- Random assignment of well-defined cohorts and adequate sample size for comparisons
- Nonrandom assignment, but well-defined cohorts with inclusion/exclusion criteria and documentation of attrition/failures; additionally, adequate sample size for group designs or replication across three or more subjects in a single-subject design
- Well-defined population of three or more subjects in single-subject designs or sample of adequate size in group designs
- Other, Please Specify

### Generalization

- Documented changes in at least one natural setting outside of treatment setting (includes social validity measures)
- Generalization to one other setting or maintenance beyond experimental intervention in natural setting or maintenance beyond intervention baseline
- Intervention occurred in natural setting or use of outcome measures with documented relationship to functional outcome
- Not addressed or Other (If "other", specify)

"Other" included generalization to another teacher in same setting
Summary and Conclusions

- In this sample, most participants were under 11, male and had severe to profound disabilities and/or autism.
- Interventions were usually provided: in the classroom, by an experimenter or teacher, between 2-5 days per week, over a course of 1-6 months.
- Intervention targets were typically single word, sign or symbol responses and rarely focused on linguistic productions.
- Inter- or intra- reliability was typically reported but social validation and generalization data typically were not reported.
- The majority of studies used single subject designs with well-defined populations of 3 or more participants, but did not specify that measures were obtained from individuals blind to treatment conditions.
- This partial review suggests a need for intervention studies that include measures from blind observers and better controls for threats to internal and external validity, and that address generalization and maintenance of targeted communication responses.
- Further review of extant literature is needed to identify, describe, and compare effective interventions for persons with severe disabilities.

References


For more information about the NJC including products available, please visit

www.asha.org/njc/