**Sign Language Intervention for Children with Autism**

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**Autism as a Diagnosis**

**GENERAL DESCRIPTION**
- Presence of abnormal or impaired development in social interaction and communication, as well as a restricted repertoire of activity and interests (DSM-IV, 2000).
- Autism is an extremely variable disorder; diagnosis places individuals on a continuum from low to high functioning.

**SPECIFIC IMPAIRMENT OF SOCIO-COGNITIVE AREAS**
- Verbal communication
  - Approximately 50% develop little to no oral language
- Nonverbal communication
  - Deficits in producing and reading facial expressions, body postures, eye gaze

**Facial Expressions**
- Means by which emotions are conveyed
- Important for overall social functioning (i.e., expressing emotion, understanding emotion, empathy)

**Impairment in Reading Facial Expressions**
- Cognitive Deficits
  - Difficulty with imitation and matching
  - Inability to infer meaning from social behaviors
- Hipo-reactivity to environmental stimuli
- Autistic children often display flat and/or inappropriate affect.
- During interactions, facial expressions are less salient to children with autism.
- Children with autism are better able to perceive and recognize facial expressions when they are presented in a slow, exaggerated manner.

**Present Interventions for Communication and Social Cognition**

**Pragmatic:**
- Child-centered
- Naturalistic teaching
- No set curriculum
- Encourages play with typical children to learn social skills
- Intrinsic motivation rather than objectified reinforcement

**Didactic:**
- Adult-centered
- Discrete trial instruction
- Strict curriculum
- Task analysis
- Theories of behaviorism
- Progress is closely tracked and documented
- Detailed methods of reinforcement (e.g., contingency systems)

**Current Pragmatic Interventions:**
- Floortime Relationship Development Intervention
- Augmentative & Alternative Communication
  - Sign language
  - Picture Exchange Communication System

**Current Didactic Interventions:**
- Applied Behavior Analysis (ABA)
  - Behaviors treated as observable, measurable and controllable entities
  - Metircous analysis of environmental conditions

**American Sign Language (ASL) as an Intervention**

**American Sign Language (ASL)**
- Involves a complex system of communicative gestures coupled with dynamic facial expressions, eye movements, and spatial changes to indicate varying degrees of emotion.
- Both spoken and signed systems entail activation of the left cerebral hemisphere, indicating similarity in neural processing.

**Sign Language Intervention**
- Sign communication skills are retained longer than verbal communication skills.
- Visual processing is an area of strength for individuals with autism.
- For autistic children, communicating meaning through a spatial language might be more effective than relying solely on oral language.

**Research Objectives**

**GOAL OF THE STUDY:** To examine whether sign language interventions foster social cognitive growth in children with moderate to severe autism.

**HYPOTHESIS:** Sign language intervention will improve social cognitive skills in children with autism.

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**Participants**
- 50 children and their special education teachers and teaching assistants.
- All children will have been diagnosed with low functioning autism and low verbal ability.

- Low functioning autism: Composite score above 37 on the Childhood Autism Rating Scale (CARS) or a nonverbal IQ between 50 and 85.
- Low verbal ability: Score of 3 or 4 on the verbal communication item of the Childhood Autism Rating Scale (CARS).
- Participants will be recruited from non-ABA specialized schools for children with autism in NYC and surrounding areas.

**Procedure**
- 12 month curriculum / 6 hours per week of instruction
- Total communication (sign and spoken word)
- Video recording and analysis of sessions
- Documentation of signs used and progress
- Task analysis
- Objective measures of sign language proficiency

**Measures**
- Child psychiatrists will assess the children pre and post sign language intervention
- Childhood Autism Rating Scale (CARS)
- Social Responsiveness Scale (SRS)

**Potential Findings & Implications**
- Autism intervention programs are constantly evolving. There is yet to be just one that proves to be overwhelmingly effective.

**Benefits of Sign Language Intervention Programs:**
- Documented to benefit communication skills
- Potential to improve social cognitive skills in children with moderate to severe autism because of the use of dynamic facial expression
- Potential to be generalized for all spectrum individuals

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