Evidence Based Practice in Children with Autism Spectrum Disorders

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Picture Exchange Communication System

Picture Exchange Communication System (PECS)

- A visually based exchange system used for requests
- Teaching functional communication within a social context (e.g., requesting) using inherent non-social rewards (e.g., getting the item requested) (Bondy & Frost, 1994; 2001).
    - The child exchanges a picture for a desired object or action
    - Represents the communicative act physically and visually

Picture Exchange Communication System (PECS)

- Grounded in ABA principles
  - Using effective reinforcers through the application of request situations rather than labeling situations
  - Beginning with spontaneous communication
  - Avoiding prompt dependency
  - Doesn't require extensive training prior to the initiation of the system

  (Bondy & Frost, 1998).

Picture Exchange Communication System Phases

Phase I Behaviorally based program

- Physically assisted to independent exchange started from child's initiation

Phase II

- Seek out pictures and partners

Phase III

- Teaches discrimination of pictures in selecting the picture that represents the item they want.

Phase IV simple sentences to describing

- Teaches child to use sentence structure "I want _____."

Phase V

- Teaches child to respond to the question "What do you want?"

Phase VI

- Teaches students to comment about things in their environment both spontaneously and in response to a question like "What do you see?"

(adapted from Frost & Bondy, 2002)

PECs

- **Effectiveness**
  - Case study of a nonverbal 36-month-old & a 7 year old boy with ASD who began using speech in conjunction with PECS during the fourth month of intervention at Phase VI (Bondy & Frost, 1994)
  - Observations of 66 preschool children who used PECS for at least a year; 25 children used a combination of speech and pictures or a printed system while 41 used speech alone; 76% of the children trained in their program developed speech & use it as their sole communication modality or augment their speech with a picture-based system
  - Frequency of spontaneous language (both verbal and pictorial) and the duration of social interaction with peers increased for one child with autism (6 years of age) using PECS (Kravitz, Kamps, Kemmerer & Potucek, 2002
  - Use of PECS with 20 children with autism and other learning difficulties found that all but one learned to use PECS to request; 11 children learned to use sentence strips between 4-15 months; 9 of the 20 children had increased their verbalizations following the introduction of PECS, with 7 of these children using words (Liddle, 2001)

PECs

- **Effectiveness**
  - Rate of acquisition of functional communication using PECS for 31 children (3 to 6 years of age), 16 with ASD, in the children's classrooms resulted in all 31 children learning to communicate using PECS with various partners within 3 to 28 months (Schwartz et al., 1998)
  - PECS used with 6 children (55 to 70 months, 5 with ASD); all learned to use the system (through Phase VI) within 6 months & exhibited gains in spoken language with and without the use of the pictures; children also increased eye contact and use of each other's names (Webb, 2000)
  - PECS used with a 14 year-old boy with ASD who had been using FC; results indicated the student's preferred communication modality was PECS with 90% to 100% accuracy in message delivery (Simon, Whitehair, & Toll (1996)
  - 3 children with ASD mastered PECS rapidly & > their words & complexity of grammar (Ganz & Simpson, 2004)
  - 2 students with ASD participated in a study comparing PECS & sign language training; results indicated acquisition depends on the individual characteristics of the participants (Tincani, 2004)

PECs

- Valuable for those children with ASD who have little to no speech and for whom the social rewards of functional communication are lacking.