A Biobehavioral Approach to Functional Assessment with Individuals with Autism

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What is a Biobehavioral Approach?

- Popular catch phrase in science and medicine
- Refers to an array of biological, psychobehavioral, environmental factors that affect disease states (e.g., headaches, irritable bowel syndrome, obesity, cancer-related fatigue)
- If you think about it, everything is “biobehavioral”
How does this fit with a Functional Assessment Approach?

- Takes functional assessment one step further - to look beyond the environmental factors
- Looks at how biology can interact with environment at all points along the continuum from setting events to consequences
Setting Events

- Role of biological setting events (also called motivating operations)
- Affect the efficacy of reinforcement for both problem and adaptive behavior
Biological Setting Events for problem behavior

Most common setting events that can affect problem behavior:

- Illness/pain
- Genetic condition
- Medical condition
- Medication (side effects)
- Psychiatric condition
Biological Setting Events

- Pain due to:
  - Otitis Media
  - Headaches
  - Gastroesophageal Reflux Disease or other GI problems
  - Menstrual Pain
- Illness (chronic conditions or acute illness)
Health Issues and Problem Behavior

Critical part of every FBA to rule out unidentified or undiagnosed health issues:

- A routine physical examination
- Health screen
- Medication assessment
Health Issues and Problem Behavior

By evaluating these issues you decrease the need for more intensive intervention approaches.

To help this process have caregivers track:
- medical symptoms
- food diary
- sleep diary
- visible symptoms of discomfort
Functional Assessment and Behavioral Phenotypes

- Behavioral phenotype are characteristics commonly associated with a syndrome or condition that can help in diagnosis or in development of intervention plan.
- Can inform diagnosis and intervention (both medical and behavioral).
Behavioral Phenotypes

Behavioral phenotype associated with a genetic disorder are similar to physical phenotype – there is a high likelihood that it will be expressed, but not true in 100% of individuals.
Behavioral Phenotypes

Can impact intervention plan on many levels:

- Certain reinforcers are more or less effective
- More predisposed to certain behaviors and response patterns
- Also impacts types of interventions chosen
The Behavioral Phenotype of Autism

- ASD definitely has a genetic component
- But there is a lot of variability in behavioral phenotype
- Multiple phenotypes?
  - Individuals with severe autism (males vs females)
  - PDD-NOS
  - Asperger syndrome
Functional Assessment with Individuals with Autism

Must take into account autism-specific characteristics:

- Sensory issues
- Food selectivity, neophobia
- Communication difficulties
- Interruption of perseverative activities
- Access to perseverative activities/toys
Autism-specific Function of Disruptive Behavior

- Conducted a study with children with autism coming into diagnostic clinic
- Completed Functional Assessment Interview with caregivers of the children.
- Two categories of “functions” or possible reinforcers for problem behavior that parents were asked about:
  - “standard” reinforcers and
  - reinforcers more likely related to autism.

Reese et al., 2003
Comparison of “typical” versus autism-related functions

Standard FA Reinforcers:
- Gain attention
- Gain access to toys, activities
- Escape demands

Autism-Related:
- Gain access to perseverative activities or toys
- Escape demands when engaged in perseverative activities
- Escape sensory stimulation
Gender Differences in Autism: Problem Behavior

- Males with autism are:
  - more likely to engage in stereotypic play;
  - more likely to have problem behavior when stereotypy interrupted, and
  - less likely to find attention from caregivers reinforcing.

- Females are more likely to find attention reinforcing

- Extended study to compare males and females
Males versus Females with Autism

Completed Functional Assessment Interview Form with families in clinic:

- 17 males; 6 females
- 3 to 6 year olds
- Males age (m = 40 months)
- Females age (m = 48 months)
Additional Research

- FA of “insistence on sameness” in an 11-year old with Asperger (Ollington, et al., 2012)
- FA of arranging and ordering by individuals with an autism spectrum disorder (Rodriguez et al, 2012).
- FCT to treat challenging behavior maintained by terminations of activity interruptions (Falcomata et al, 2012)
- Assessment and treatment of foot-shoe fetish displayed by a man with autism (Dozier et al, 2011).
Problems with Intervention Based on Behavioral Phenotypes

- Not all individuals with certain syndrome fit the phenotype (e.g., not all kids with autism have sensory issues)
- May result in overlooking critical variables that are not related to phenotype (e.g., illness)
Growing evidence that environmental factors and history of reinforcement can “override” behavioral phenotype

- Skin picking in a child with PWS reduced using reinforcement program for keeping bandage on
- FA demonstrated that children with Angelman syndrome were more likely to laugh and smile in social situations but not across all situations (Oliver et al., 2002); Northup ADHD studies
Mental Health Issues

People with autism are subject to the same mental health problems as others and may be more susceptible to:

- depressive disorder
- anxiety disorders
- schizophrenia and other psychosis
- conduct disorders
Presence of Psychiatric Diagnosis (Dual Diagnosis)

Several problems with diagnosing psychiatric conditions in individuals with ASD and ID due to:

- language impairments (difficulty of self-report)
- cognitive impairments
- required use of caregiver report
- diagnostic overshadowing
Tools for Assessment

To help assess impairment associated with or diagnosis of psychiatric disorder.

Look for recent changes in:

- Eating patterns
- Sleep patterns
- Tics, abnormal movements
- Mood
- Behavior problems
- General health evaluation (to rule out illness)
Relationship between Problem Behavior and Psychiatric Diagnosis

- Primary relation – problem behavior directly related to diagnosis
  - excessive hand washing and OCD
- Secondary relation – problem behavior indirectly related
  - panic attack => aggression
- Consequential relation – problem behavior initially a symptom that gets reinforced and goes from involuntary to operant
  - faking a seizure to get attention
Behavioral Interventions

How does having a mental health disorder affect the behavioral intervention you choose?

- Type of reinforcement used
- Level of motivation; likely setting events
- Target behaviors selected (e.g., defiant disorder versus noncompliance)
- Choice of replacement behaviors
Biobehavioral Interaction

- Medical conditions can be affected by environment
- Behavior with clear reinforcement function can be affected by biological factors
- This is often a place where medication/medical treatment and environmental interventions intertwine
Guidelines for Functional Assessment Process

- Get a complete medical evaluation of possible biological factors
- Collect data on presence/absence of these factors and frequency of problem behavior
- Use this information to inform FBA process and hypothesized function of problem behavior
- Use of multidisciplinary approach and collaboration
Guidelines for Developing Behavioral Interventions

- Measure medications – both behavioral effects and side effects
- Modifying setting events
  - Modify/improve diet, sleep, time of day
- Modify antecedents
  - Sensory issues
- Modify reinforcers
  - Food as reinforcement at times likely to be hungry
  - Minimize social reinforcement for kids with autism
Guidelines to consider

Without taking these issues into consideration, interventions are not likely to be successful.
Resources

More information:

- KIPBS.org: Module on Emotional & Behavioral Health and on FA process
- webMD for info on medications, medical and genetic conditions

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