Assessment and Treatment of Severe Problem Behavior

Joanna Lomas Mevers, PhD, BCBA-D
Program Manager-Severe Behavior Clinics
Assistant Professor
Division of Autism and Related Disorders
Emory School of Medicine

Introduction to Problem Behavior in Children with ASD

Autism & Problem Behavior

- Problem behavior is not a core symptom of autism

- What are the core symptoms of autism?

Core Symptoms of Autism

- Autism Spectrum Disorder
  - Deficits in Social Communication and Interactions
  - Restricted and Repetitive Patterns of Behavior and/or Interests

  Subtypes
  - With Cognitive Impairment
  - With Language Impairment

How ASD relates to Problem Behavior

<table>
<thead>
<tr>
<th>Poor Peer Relations</th>
<th>Problem Behavior to Avoid Social Interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty Asking for a Break</td>
<td>Problem Behavior Related to Demands</td>
</tr>
<tr>
<td>Repetitive Interests</td>
<td>Problem Behavior When these Interests are Interrupted</td>
</tr>
<tr>
<td>Stereotyped Motor Behaviors</td>
<td>Repetitive Behaviors can become Self-Injurious</td>
</tr>
<tr>
<td>Stereotyped Verbal Behaviors</td>
<td>Can become Disruptive to Other Students</td>
</tr>
</tbody>
</table>

Problem Behavior: What are we talking about

- Aggression (hitting, kicking, biting, etc.)
- Self-injurious behavior (head hitting, biting self, hand mouthing)
- Disruption (crying, yelling, squatting)
- Property Destruction (throwing materials, breaking things)
- Elopement (running away or leaving supervision)
- Stereotypy (hand flapping, body rocking, spinning objects)
- Pica (eating inedible objects)
- Rumination (regurgitating food)
Factors Sometimes Used to Determine Treatment

• Diagnosis
  • Example: Autism vs Down Syndrome

• Topography
  • Hitting other vs disruptive behavior

• Function
  • Access to attention vs escape from work

Vignette: Tim

• Tim has autism
• He doesn’t have much communication
• Tim hits his parent
• Sometimes he hits them when they make him turn off the television
• Sometimes he hits them when they tell him he has to brush his teeth

Relationship between Diagnosis and Treatment

• Not the same as medicine
  • In medicine, Diagnosis X = Treatment Y
  • Example: if you have a particular type of cancer then you need a certain kind of chemotherapy
  • Treatments for problem behavior do not entirely depend on diagnosis
  • Different treatments are often developed for kids with the same diagnosis
**Relationship between Topography and Treatment**

- Topography is less relevant than most people think
- Topographically prescribed treatments:
  - Problem behavior X = treatment Y
  - Example: biting = time out
  - Every time a child bites you should put him in time out

**Factors Sometimes Used to Determine Treatment**

- Diagnosis
- Topography
- Function

**Function of Problem Behavior**

Function = the reinforcers that maintain a response = Why problem behavior occurs

- **Function X**
  - **Treatment Y**
  - **Attention Function**
  - **Ignoring**

**Cycle of Problem Behavior**

- **Mom asks Tim to brush his teeth**
- **Tim stops hitting**
- **Tim hits mom**
- **Tim learns that hitting gets him out of things**
- **Mom stops asking Tim to brush his teeth**

**Vignette: Tim**

- **Topographically Prescribed Treatment:**
  - Hitting = time out
  - When Tim hits his parents after his parents turn off the television he goes to time out
    - “When I hit, not only do I not get to watch television, I don’t get to do anything!”
  - When Tim hits his parents after being told to brush his teeth he goes to time out
    - “When I hit I don’t have to brush my teeth. YAY!!!”

- **Function-based Treatment:**
  - Hitting maintained by access to preferred activities = time out
  - When Tim hits his parents after his parents turn off the television he goes to time out
    - “When I hit, not only do I not get to watch television, I don’t get to do anything!”
  - When Tim hits his parents after being told to brush his teeth they follow through and make sure he brushes his teeth
    - “When I hit I still have to brush my teeth”
How to Identify the Function of Problem Behavior

- Functional Behavior Assessment: Procedures to identify the function of problem behavior

- Major categories of FBA:
  1. Non Experimental (2 Types)
     - Indirect: no observation (questionnaires, interviews)
     - Descriptive: passive observation
  2. Experimental Functional Analysis (Analog)
     - Direct observation controlling what happens before and after problem behavior (antecedents and consequences)

Factors that Affect Function

- Antecedents (what happens before the behavior)
- Consequences (what happens after the behavior)

Communication and Problem Behavior

- Challenging behavior can be a very effective way for individuals to communicate
- Challenging behavior usually serves a purpose for the individual
- Functional Analysis is an assessment to determine what the individual is trying to communicate with problem behavior

“Experimental” Functional Analysis

- “Experimental” or “Analog” Functional Analysis
  - Experimental: environment is changed so only one thing changes at a time
  - Analog: analog to the natural environment
- The “gold-standard” for functional behavioral assessments
  - Treatments based on functional analyses are more effective than those that are not

"Attention", "Toy Play", "Tangible", "Escape", "Ignore"

"Attention", "Toy Play", "Tangible", "Escape", "Ignore"
Treatment of Severe Problem Behavior

**Common Treatments**

- **Functional Communication Training**
  - Teaching alternative way to access the functional reinforcer via communication (e.g., teach child to ask for favorite toy)
  - *Example FCT*

  [Carr and Durrant, 1985]

- **Differential Reinforcement of Alternative Behaviors**
  - Reinforcement of a more appropriate replacement behavior (e.g., compliance)
  - *Example DRA Compliance*

  [Petscher, Rey, & Bailey, 2009]

- **Differential Reinforcement of Other Behavior**
  - Reinforcement is delivered when the target behavior has not occurred for a specific period of time (e.g., child has to go a set amount of time without engaging in the target behavior to receive reinforcement)
  - **Token Economics**
    - Earn tokens that are exchangeable for back-up reinforcers

  [Homer and Peterson, 1980]
  [Hackenburg, 2009]

**Extinction**

- No longer providing reinforcement for a behavior
  - Extinction of responses maintained by...
    - **Positive reinforcement**: do not allow the child to have the item, food, activity, or interaction
      - *Example Tangible Extinction*
    - **Negative reinforcement**: do not allow the child to get out of doing a task or avoid something he/she doesn’t like
      - *Example Escape Extinction*

  [Lerman, Iwata, & Wallace, 1999]

**Side Effects of Extinction**

- Extinction bursts
  - Around 40% of the time there will be a temporary increase in the intensity or variability of responding before there is a decrease
  - Potential for intermittent schedules of reinforcement
    - Reinforcing some but not all responses will result in higher rate behaviors that are even harder to extinguish
  - Problem behavior temporarily comes back

  [Lerman, Iwata, & Wallace, 1999]
Example of FCT

Next Steps

- Teaching the individual to tolerate when they can’t have what they want
- Generalization to the natural environment (e.g., home and community settings)
- Caregiver Training

Teaching the individual to tolerate not getting what they want

- Discriminative Stimuli
  - Teach using a stimulus when reinforcement is and is not available
- Schedule Thinning
  - Increasing the number of responses or the duration before reinforcement can be accessed

Increasing Social Validity

- Generalization: spreading the effects of reinforcement across stimulus conditions
  - Across people
  - Across settings
  - To additional problem behaviors
- Expand the number/variety of alternative behaviors: to establish access to a greater variety of reinforcers and a larger community of listeners

Outcomes for Behavioral Treatments

- Effect size of behavioral intervention for pica\(^1\):
  
  $1.8$

- Effect size of behavioral intervention for elopement\(^2\):
  
  $2.1$

\(^1\)Call, Simeone, Lomas Mevers, & Alvarez, 2015

\(^2\)Call, Alvarez, & Lomas Mevers, under review