Management of Behavioral Issues in Children with Autism Spectrum Disorders

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Outline

• General approach to behavior issues:
  – Figuring out the purpose of a behavior: behavior analysis
  – Prevention strategies

• Common behavioral issues
  – Sleep
  – Toilet-training
  – Ritualistic, repetitive, or obsessive/compulsive behaviors
  – Anxiety/depression
  – Overactivity, impulsivity, Inattention, distractibility
  – Self-Injury/Aggression

• Approach to office visits
Characteristics of children with autism that can lead to behavior issues

• Delayed communication skills/ poor auditory processing skills
• Literal interpretation of language
• Poor understanding of social expectations and cues
• Poor perspective-taking
• Short attention span, distractibility
• High activity level
• Sensory issues- difficulty tuning out environmental stimuli
• Low frustration tolerance
• Anxiety

It is important to establish the function of behavior

Behavior = Communication !!!

• To obtain something
• To seek attention
• Avoidance
• Escape: behavior (e.g. tantrum) serves to remove a demand placed on the child
• To overcome boredom
Functional Behavioral Assessment

- The process of gathering information to figure out the function of a behavior, and the factors that serve to maintain it, in order to develop and implement intervention.

- **A-B-C Model:**
  - **Antecedent**- the time of day, setting, and people involved
  - **Behavior**- what happens (describe specifically, eg hitting a peer, rather than "aggression"
  - **Consequence** – how people react, what happens afterward

- Look for patterns of behavior (certain time of day, settings, or with certain people)

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**Case**

Jonathan, age 4, has PDD-NOS, and an expressive language delay, and is having difficulty with aggression toward staff and peers at his developmental preschool. He hits other children at least daily, and recently bit a little girl who was playing near him.
Case: results of FBA

- 6 incidents of aggression in one week
- **Antecedents**: occurred in the late morning, during choice time (when other children were very close to him, or the room was loud) or tabletop work
- **Behavior**: hit staff; pushed, hit and bit peers
- **Consequences**: He was removed from the activity, to a quiet corner with pillows and his favorite stuffed animal from home

**Intervention 1: Prevention**

Organize the environment to reduce the likelihood that the child will encounter situations that trigger the difficult behavior

- **Stimulation level**:
  - Avoid over-stimulating activities,
  - Provide calming activities,
  - “Sensory diet,”
  - Self-monitoring (How Does Your Engine Run)

- **Communication**
  - Use visual strategies
  - Clear, concise language
  - Clear expectations- Social Stories
Visual Strategies/Supports

• 55% of communication is visual
• Makes communication non-transient
• Can help overcome problems with receptive language or attention
• Can involve visual schedules, calendars, choice boards, list of rules or tasks, photos, PECS, international NO symbol,

Augmentative Communication

• PECS (Picture Exchange Communication System)
• Aug. Communication Evaluation
  – Some speech therapists
  – Pine Tree Society (Bath)
• Electronic Communication Devices-Dynavox, Vantage
• iPad resources (Autism Speaks website)
• Different from “facilitated communication”
Social Stories

- **Social Stories** (Carol Gray) are written explanations of an event or new experience. They explain what will happen and how the person is expected to respond. They are also used to address problematic behaviors. For some children, the printed word is much more easily processed than a verbal explanation. It is helpful to illustrate them (or have the child do it) or have photos on each page with brief text

- [www.thegraycenter.org](http://www.thegraycenter.org)

Comic Strip Conversations (Carol Gray)

- **Comic Strip Conversations** are simple line drawings that show a conversation between 2 or more people, including thoughts as well as spoken words, to help process and understand social situations

- [www.thegraycenter.org](http://www.thegraycenter.org)
Think Social: Michelle Garcia Winner

- “Social thinking is required before the development of social skills. Successful social thinkers consider the points of view, emotions, thoughts, beliefs, prior knowledge and intentions of others (perspective taking).”
- **Four steps of communication:**
  1. Thinking about others and what they are thinking about us
  2. Establishing a physical presence
  3. Thinking with our eyes
  4. Using language to relate to others

  [www.socialthinking.com](http://www.socialthinking.com)

Cognitive Behavioral Therapy (CBT)

- May be helpful for older, higher-functioning children
- Based on the idea that our *thoughts* cause our feelings and behaviors, not external things, like people and situations, so we can change the way we think to feel / act better even if the situation does not change.
- Time- limited (average # of sessions = 16)
- Highly instructive
- Homework assignments
- Exposure/response-prevention

  [www.nacbt.org](http://www.nacbt.org)
Intervention 2: Teaching appropriate ways to obtain the same goal

Functional Communication Training: teach a communicative behavior that is functionally equivalent to the maladaptive behavior. Shown to be effective for self-injury, aggression, and stereotypic behaviors

- Requesting items
- Requesting permission
- Requesting a break
- Requesting a delay
- Expressing emotions
- Negotiation skills

Intervention 3: Reinforcement

- Reinforce desired behavior: social reinforcement, sensory, activities, rewards, token systems
- Is a response (e.g. praise) truly reinforcing for the child?
- Is an undesired behavior being inadvertently reinforced by adult attention (even if it is negative)?
Intervention 4: Consequences

- Ignore
- Redirect
- Warning
- Time-out from activity
- Time out from group
- Contingent task
- Reinforce other students’ good behavior

Sleep
Daytime Sleepiness in Children

Daytime Sleepiness

Neurobehavioral Deficits  Mood Disturbance

Performance Deficits:

Academic Failure
Impaired Social Functioning
Behavioral Dyscontrol

• Studies vary but between 53-78% of children with an ASD present with sleep issues
• This compares to 26-32% for typically developing children
• Increased incidence is by parent report but has also been confirmed in studies using actigraphy and polysomnography
• Children with ASDs may have increased sensitivity to noise and short sleep duration
• Not a clear association with having a diagnosis of intellectual disability
Most common sleep issues in ASD

- **Sleep onset**
- **Sleep maintenance**
  - Children with ASDs may not wake more frequently, but are awake for longer (up to 2-3 hours) and engage in more disruptive behavior while awake
  - Parasomnias such as night terrors, confusional arousals, and sleep walking may be more common
- **Sleep duration**
- Decreased REM sleep compared to typical and developmentally delayed children
- Issues can be caused by less than ideal bedtime routines or bedtime associations so need to consider standard sleep hygiene recommendations

- **Obstructive Sleep Apnea/hypopneas** should be considered- less clear data on prevalence with ASD
- Must keep in mind the bidirectional influence of co-morbidities such as ADHD, anxiety, depression, and seizure disorders
- Also need to recognize the toll that a child with poor sleep takes on the entire family
BEARS

• 5 question screening tool
• Yields significantly more information about sleep than standard sleep prompt “Does your child have any sleep problems?”
• Therefore increases likelihood of identifying sleep problems

BEARS

• B = Bedtime problems
• E = Excessive daytime sleepiness
• A = Awakenings during the night
• R = Regularity and duration of sleep
• S = Snoring
Sleep Case

• Sally is a nearly 3 year old girl with PDD-NOS. While she is making progress with her skills with intensive interventions she has very disordered sleep and the family is exhausted and out of ideas on how to deal with her sleep. Parents called ahead about their concern and have brought in a sleep diary for you to review.

BEARS

• B = Bedtime problems
  – Bedtime varies between 7:30 and after midnight according to when she asks for a bedtime
  – Drinks a bottle and snuggles with parent before falling asleep

• E = Excessive daytime sleepiness
  – Often cranky and tired during the day

• A = Awakenings during the night
  – Often, and often up for day between 3 and 5 AM

• R = Regularity and duration of sleep
  – Naps occur “whenever she requests” and so not consistent

• S = Snoring
  – None
Case Solution

- Social story for both nap and bedtime with order of routine, clear signal of having lunch before nap and quiet routine before bedtime- sleep time no longer “whenever she requests”
- Naps limited to 90 minutes with gentle waking
- Sleep consolidated by slightly later but regular bedtime of 8:30 PM
- Wean bottle and parent to fall asleep
- No electronics with early or middle of the night waking, returned to bed if prior to 5 AM

Medication for sleep

- Melatonin: neurohormone that organizes circadian physiology- sleep-wake cycle and core body temperature rhythms
- Primarily regulated by light/dark but meals and social cues may reinforce this effect
- May also be a true genetic difference in the secretion of melatonin in patients with ASDs.
- May be helpful for children with a true circadian rhythm disturbance but behavioral intervention and strategies should be attempted first
Medication for sleep (continued)

**Melatonin**
- Dosing 0.5 mg-3 mg
  - Lower dosing may be more effective
  - Give 1 to 2 hours before desired sleep onset
- 2 actions of sedating and adjusting clock so may take up to 2 weeks to fully trial a dose
- Theoretical side effects of effect on puberty and decreased sz threshold but well-tolerated in actual use
- Evidence for efficacy in children with ASDs (meta-analysis Rosignal and Frye 2011) for sleep onset, duration and improved daytime behavior
- Possibly better evidence than for other sedative/hypnotics

**Clonidine:** alpha agonist with side effect of sedation, also helps impulsivity, hyperactivity. Can cause nightmares, constipation, headaches, bradycardia, hypotension

Toilet-training

- Cognitive and language delays as well as decreased imitation and social modeling skills can delay the training process.
- Tips
  - Monitor readiness signals but do not wait too late to start the process
  - Regular daily sitting times (upon awakening, after meals)
  - Break the process up into steps if possible
  - Do sitting with diaper on to start if too stressful
  - Low threshold to treat for constipation
  - Use positive incentives (stickers, small treats, take advantage of hyperfocused interests) –can be challenging to find
Stereotypical, repetitive, or obsessive/compulsive behaviors
(Matson and Dempsey)

- Repetitive “self-stimulatory” behaviors are core diagnostic features of ASDs
- Debate about the relationship of ASDs and OCD
- “Sameness” behaviors more common in ASDs than OCD, and less likely to ameliorate with age
- Ordering, hoarding and touching more common in ASDs, while cleaning, checking and counting more common in OCD

Behavioral intervention for stereotypies and repetitive behavior

- Functional assessment
- How “interfering” is the behavior?
- For physical stereotypies: label the behavior, teach a replacement behavior, give hand fidget, reinforce alternative behavior or decreased target behavior, allow set times to ‘stim.”
- For sameness behaviors: build variation into daily schedule
- CBT (Cognitive-Behavioral Therapy): exposure and response-prevention, for higher-functioning children
Medication for stereotypies, etc

- SSRIs are often used – may be more helpful if the behavior seems anxiety-driven, and if there are broader anxiety issues
- Evidence: (most studies open-label except 4 RCT) generally showed improvement in global functioning and in symptoms associated with anxiety and repetitive behaviors. Side effects were generally mild, but increased activation and agitation occurred in some subjects (Kolevzon).
- One negative NIMH sponsored RCT of citalopram: 6 sites, 149 children, no improvement over placebo (King et al, June 2009)

Anxiety

- Children with ASDs generally prefer predictability, and can be quite rigid, with high levels of anxiety
- Causes of anxiety
  - Change in routine
  - Not getting what they want
  - Sensory overload
  - Social situations
  - Specific phobias: bugs, fire-alarms
Addressing anxiety

- Advance warning of upcoming events or schedule changes
  - Visual schedules
  - Sensory supports
- Allow downtime (? time for self-stim)
- Balance need for structure with practicing flexibility
- Cognitive Behavioral Therapy
- Omega 3 fatty acids
- Medication: SSRIs, atypical neuroleptics

Cognitive Behavioral Therapy (CBT)

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- Time- limited (average # of sessions = 16)
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- [www.nacbt.org](http://www.nacbt.org)
Depression and mood disorders

- Common in older and higher-functioning children; diagnosis can be difficult due to flat affect, little expression of emotion
- Consider family history
- Look for a change from baseline, or change in functioning
- Consider seasonal affective and PMS/PMDD issues
- Counseling if higher-functioning
- Omega 3s
- Medication: SSRIs, wellbutrin, possibly tricylics or atypical neuroleptics

Overactive, impulsive, inattentive, and distractible behavior

- Over half of children with ASDs have ADHD symptoms
- Impairment in functioning (academic, ADLs, social) may be due in part to ADHD symptoms and executive dysfunction, as well as to autism
- If possible, do ADHD assessment with standardized questionnaires (eg Conners or Vanderbilts) esp. if higher functioning
Treatment of ADHD symptoms (Aman)

- Consider classroom placement/supports
- Treat as would any child with ADHD
- Collect data before and after from teachers
- Best evidence for stimulants, Atomoxetine, risperidone, and alpha-agonists
- Psychostimulants
  - In studies of psychostimulants, around 50% of subjects with PDD have shown positive clinical responses (not significantly lower than non-autistic children with ADHD)
  - Side effects included irritability, emotional outbursts, and initial insomnia, with social withdrawal at higher doses
  - Overall, may be a decreased response rate and increased chance of side effects compared to children with ADHD's autism
- Atomoxetine (Strattera):
  One PCT of 13 children, 9 of whom responded (56%), with 25% placebo response. Low rate of side effects

Self-injurious behavior (Minshawi)

- Most common forms: self-hitting or banging of head or face, and self-biting
- Can markedly impact adaptive functioning, interfere with normal activities, lead to a more restrictive environment, and result in injury
- More common in autism than other developmental disabilities
- Inversely correlated with intellectual functioning (4% mild MR, 7% mod, 16% severe, 25% profound)
- More common in individuals in residential settings (estimated 17% vs 1.7% for community)
Why does self-injurious behavior (SIB) occur?

- Lack of environmental stimulation (boredom)
- Reinforced by social attention, access to preferred items, or avoidance or escape from undesired activities
- May provide sensory input (provide endogenous endorphins)

How to approach SIB

- **Functional assessment:** description of the behavior, situations in which the behavior is most and least likely to occur, antecedents, and consequences
- **Reinforcement:** appropriate behavior is reinforced, SIB is ignored
- **Extinction:** no longer providing reinforcement for a response that was previously reinforced (eg planned ignoring)
- **Protective equipment:** can serve as extinction for sensory input
- **Functional communication training**
- **Punishment:** time out, water mist, restraint
- **Medication:** atypical neuroleptics (risperidone), SSRIs, clonidine, naltrexone
**Risperidone in autism**
*(Scott and Dhillon)*

- Risperidone is FDA-approved for treatment of irritability associated with ASD in children ages 5 to 16 years
- 2 well-designed short-term (8 week) RDBCTs (n = 101 and 55) showed significant improvements in irritability, stereotypy, social withdrawal, lethargy, hyperactivity and noncompliance, (and other studies in combo with other meds)
- Benefits were maintained up to 6m, with improvements in adaptive functioning (communication, daily living and social skills)

**Risperidone: adverse effects**

- **Increased appetite**
  - Weight gain: mean 2.7kg vs 0.8kg in 8 weeks. Mean gain = 7.5kg (vs expected 3-3.5kg) in 12 months
  - Risk of hyperlipidemia and hyperglycemia
- **Somnolence (often transitory) and fatigue**
- **Constipation**
- **Increased salivation or dry mouth**
- **Increased prolactin (2-4 fold, 39 vs 10 ng/ml)**
- **Tremor and dystonia both in 12% (0% in placebo)**
- In pooled studies with n = 1885 (for ASDs and other disorders), there were 2 cases of tardive dyskinesia. Risk higher with longer-term use
- Possible decreased bone density with longstanding hyperprolactinemia associated with hypogonadism
Other atypical neuroleptics

- Aripriprazole (Abilify) and ziprasidone (Geodon) have shown promise in small trials of patients with PDD
- Limited clinical trial experience failed to support quetiapine (Seroquel) or clozapine. Limited data for olanzapine.
- Other side effects:
  - *Abilify*: Risk of activation or agitation approx 25%
  - *Geodon*: risk of arrythmias

Working with children with ASDs during office visits

- Talk with the parents in advance
  - Prepare the child before the visit with a ‘social story’ or photos
  - Bring the child’s comfort items
  - Have parents stay with the child
- Schedule a practice visit
- Prepare staff
  - Defer vitals if uncomfortable
  - Do not approach the child too closely, or physically, watch for signs of distress/discomfort
  - The child may approach staff closely and not follow social expectations so should be ready for that
Office visits, continued

• Minimize waiting, and physical intervention
• Recognize that behaviors may be due to ASDs (rigidity, anxiety) and not to deliberate oppositionality
• Recognize the role of sensory issues (fluorescent lights, crowded waiting room)
• May want to schedule extra time for visits

What parents of ME children with ASDs say about office visits

• “Wait room times – if they are long can cause escalation”
• “A lot of pediatric offices have bright colors and toys – most kids enjoy this but our population can find that over stimulating”
• “The doctors could make sure that the lights are not too bright for those that have sensory issues. Maybe a sheet on the tables for those who do not like the paper (the feel of it on their skin or the sound it makes).”
• “I always say to my doctor when we arrive if we can be put into a exam room as soon as possible that helps cut down on both of the above problems. We don’t need to be seen right away but taken out of the wait room environment.”
Books on behavioral intervention

- Behavioral Intervention for Young Children With Autism, 1996, Maurice, Green and Luce, Pro-Ed, Inc., Austin, Texas
- Asperger’s Syndrome and Difficult Moments, 1997, Myles and Southwick, Autism Asperger Pub Co, Shawnee Mission, Kansas

Behavior references

- King, B et al, Lack of efficacy of citalopram in children with ASDs and high levels of repetitive behavior. Arch Gen Psych 2009 June; 66: 583-590.
Behavior references