Understanding Aggression in Autism

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What is Aggression?

• Behavior that is aimed at harming or injuring another person
  • *Intention*
  • Difficult to measure

• Forms of aggression
  • Physical
  • Verbal
  • Relational
Types of Aggression

- **Reactive Aggression**
  - Impulsive, retaliatory response to perceived provocation or threat
  - “Hot-temperered,” emotional reaction

- **Proactive Aggression**
  - Deliberate, un-provoked, & goal-directed
  - “Cold-temperered,” instrumental
Aggression in Typical Development

• **Common in Young Children**
  • Most toddlers and preschoolers demonstrate occasional physical aggression

• **Across Childhood**
  • Aggression peaks in toddlerhood
  • Typically declines from the preschool years to adolescence
  • Most children develop skills in the first 5 years of life that help them inhibit aggression

(Broidy et al., 2003; Côté et al., 2006; Nagin & Tremblay, 1999; NICHD, 2004)
Aggression in Across Childhood

Physical Aggression
(Hitting, Biting, Kicking)

(Tremblay et al. 2005)
How Common is Aggression in Autism?

• Few large-scale studies, yet findings seem consistent
  • Individuals with autism are at higher risk for aggression
    • Compared to typically developing peers
  • Many children with autism show some aggression
    • Aggression appears to decline over time
Prevalence of Aggression in Autism

Study 1: Simons Simplex Collection (SSC)
- 1380 children and adolescents with ASD
- Ages 4-17

Study 2: Autism Treatment Network (ATN)
- 1584 children and adolescents with ASD
- Ages 2-17
Aggression in Autism

Current Physical Aggression toward Caregiver

- Definite/Significant Aggression
- Any Aggression

(Kanne & Mazurek, 2011)
Aggression in Autism

Current Physical Aggression toward Caregiver

- Definite/Significant Aggression
- Any Aggression

(Kanne & Mazurek, 2011)
Aggression in Autism

Definite Physical Aggression

- Girls
- Boys

4-5 Years  6-8 Years  9-11 Years  12-14 Years  15-17 Years

(Kanne & Mazurek, 2011)
Aggression in Autism

Definite Physical Aggression

(Kanne & Mazurek, 2011)
Aggression in Autism

Physical Aggression

(Mazurek, Kanne & Wodka, 2013)
What is the Impact of Aggression?

• **Impact on Families**
  - Physical harm
  - Stress, anxiety and depression
  - Isolation, reduced social support & connection
  - Financial burden

• **Impact on Teachers and Staff**
  - Physical harm
  - Stress and burnout
  - High turnover

What is the Impact of Aggression?

• **Consequences for the Individual**
  • Less engagement in learning opportunities
  • Fewer positive social experiences
  • Less participation in community
  • Higher risk for psychotropic medication, hospitalization, and residential placements
  • Poor long-term outcomes

(Jacobson & Ackerman, 1993; Logan et al. 2015; Mandell, 2008; Tsakanikos et al. 2007)
Theories of Aggression

• Biological
  • Genetic predisposition
  • Brain function
    • Brain regions responsible for emotional & behavioral control
      • Amygdala,
      • Prefrontal cortex
  • Hormones and neurotransmitters
Theories of Aggression

• Physiological
  • Arousal
    • Heart rate/blood pressure
  • Physical discomfort
    • Heat
    • Pain
    • Crowds
    • Other aversive sensory input
Theories of Aggression

• **Operant Learning**
  • Behaviors are maintained by (or are a function of) the consequences that reliably follow them (Skinner, 1953)

• **Observational Learning or Social Learning** (Bandura, 1973)
  • Learning to behave aggressively by watching and imitating others

• **Social Cognitive or Information-Processing** (Huesmann, 1988; Dodge, 1980)
  • Aggression as outcome of social problem-solving process
  • Scripts or attributions guide behavior
Meta-Theory of Aggression

- Personal Variables
- Situational Variables
  - Affect
  - Cognition
  - Arousal
  - Social Encounter
- Aggression
Aggression in Autism

Related Factors

• Self-Injurious Behavior
• Repetitive Behaviors, especially:
  • Stereotypic behavior
  • Ritualized behavior
  • Sameness behavior
• Sensory Problems

(Brown et al., 2019; Kanne & Mazurek, 2011; Mazurek et al. 2013)
Aggression in Autism

Related Co-Occurring Conditions

• Sleep Problems
  • Poor sleep quality
  • Fewer hours of sleep
  • Night awakenings
Aggression in Autism

Related Co-Occurring Conditions

- **Sleep Problems**
  - Poor sleep quality
  - Fewer hours of sleep
  - Night awakenings
- **Gastrointestinal (GI) Problems**
- **Anxiety**
- **Seizures**

(Ambler et al., 2015; Hill et al., 2014; Mazurek et al. 2013; Mazurek & Sohl, 2016)
Aggression in Autism

- Greater likelihood of *Reactive Aggression*
  - Impulsive, “hot-tempered” aggressive response
- Difficulties with Emotion Regulation
- Difficulties Regulating Arousal

(Farmer et al., 2015; Kaartinen et al., 2014; Puow et al. 2013)
Assessment & Treatment
Treatment Approaches

• Treatment Planning
  • Should begin with careful assessment
  • Key considerations
    • Safety
    • Nature, severity and duration of aggression
    • Other possible contributors (medical conditions, psychosocial stressors, etc.)

• Treatment Approach
  • Comprehensive, coordinated & family-centered
  • Behavioral and psychosocial intervention options
  • Pharmacological treatment options
Treatment Approaches

• Behavioral & Psychosocial Interventions
  • Preventative strategies
  • Skill instruction
  • Reinforcement of appropriate behavior

• Medication
  • Should be considered secondary option
  • Risperidone and Aripiprazole
    • FDA-approved for treatment of irritability in autism
    • Significant side effects possible
  • Best used in combination with behavioral intervention and as part of a comprehensive, family-centered treatment plan
Behavioral Interventions

• Begin with assessment to reveal factors that cause and maintain behavior
  • Interviews with parents, caregivers, and teachers
  • Direct observation in natural settings
  • May also include “testing” different conditions

• This can help determine what is causing a behavior and how to change it
Behavioral Principles: ABC’s of Behavior

Setting Event: Situations or contexts that increase or decrease the likelihood of behaviors

A = Antecedent
  • Event that comes before a behavior

B = Behavior

C = Consequence
  • Event that follows a behavior
Purpose (Function) of Behavior

Behavior Functions

Get Something
- Desired object
- Attention
- Sensory input
- Food
- Etc.

Avoid Something
- Pain or discomfort
- Sensory input
- Task or situation
- Etc.
Behavioral Intervention Strategies

• Change the Antecedent to
  • Prevent problem behavior
  • Prompt alternative/desired behavior

• Teach Desired or Alternative Behavior

• Change Consequences
  • Reinforce positive behavior
  • Respond to problem behavior
Antecedent-Based Interventions

• **Changing Antecedents:**
  - To prevent aggression from occurring
    - Remove triggers
  - To make positive behavior more likely
    - Prompt desired behavior

• **Examples**
  - Offering choices
  - Arranging/organizing the environment
  - Visual supports
  - Predictable schedule/routine
Reinforcement Strategies

- **Differential reinforcement**
  - Reinforcement of desired behavior
    - Alternative appropriate “replacement” behavior
      - Removing reinforcement for problem behavior
    - Incompatible behavior
    - Other behavior

- **Functional Communication Training**
  - Appropriate communication skills are taught & reinforced
    - Desired alternatives to aggression
Other Intervention Approaches

- **Parent Training and Parent-Implemented**
  - Training parents to deliver behavioral strategies
  - Increases access & generalizability

- **Cognitive-Behavioral Therapy**
  - Promising results for reducing anger and improving emotion regulation
    - More research needed to examine effects on aggression

- **Multisystemic Therapy (MST)**
  - Comprehensive family- and community-based
    - More research needed for MST for ASD

(Conner et al., 2018; Postorino et al., 2017; Scarpa et al., 2011; Wagner et al., 2019; Weiss et al., 2018)
Resources

• SPARK Webinars
  • Practical Strategies to Address Challenging Behavior
  • What You Need To Know About Applied Behavior Analysis (ABA) Therapy

• Autism DRIVE Resource & Video Directory
  • https://autismdrive.virginia.edu

• Autism Focused Intervention Resources and Modules
  • https://afirm.fpg.unc.edu/afirm-modules

• Autism Speaks Tool Kits
  • Challenging Behaviors
    • https://www.autismspeaks.org/toolkit/challenging-behaviors-tool-kit
  • Medication Decision Aid
    • https://www.autismspeaks.org/tool-kit/atnair-p-medication-decision-aid
Thank you!