Aggression and Impulsivity among persons with intellectual and developmental disabilities

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Aggression

- Among the Yanomamo (Amazon Basin) 1 out of four males die at the hands of other humans
- Murder rate in North America is 4.7/100,000
  in Southern Africa 32/100,000
  (1992) 1,932,270
Aggression and TV

One study of 707 families over 17 years, controlled for neglect, income, neighborhood violence, parental education and psychiatric illness (Johnson et al. 2002 Science)

Among teenagers who watched TV...

- < 1 hr /day  5.7% committed a violent act with harm incurred
- 1-3 hr /day  18.4% did so
- >3 hr /day  25.3%
Aggression and human nature

- Aggression in humans as other animals has a clear role in our survival—to protect resources, territory and offspring.
- Empathy and Altruism is also inherited.
- The complexity of our social organization leads to very complex patterns of aggression as well—modern warfare, culturally bound revenge killings etc.
Impulsivity

• the inclination of an individual to initiate behavior without adequate forethought as to the consequences of their actions, acting on the spur of the moment.

• impulsivity is part of normal behavior as it contributes to adaptive functioning. It is a core feature of creativity and innovation.

• Key features are a sense of urgency, acting rashly, lacking in premeditation, and positive feelings towards risky actions.
Aggression in persons with ID/DD

- 19-25% Adults with ID have an ‘aggressive behavior disorder’
- 4 components interact in complex manner to determine the quality of the behaviors
  - mood regulation
  - impulse control
  - aggression
  - severity of disability
Aggression in persons with ID/DD

- Understanding these difficulties requires a comprehensive (biopsychosocial) model including biological factors and social ecology.
- Care of persons with ID/DD with aggressive disorders is among the most taxing of all human activities as it involves a response of empathy/compassion and concern for the very person trying to harm us. It runs counter to our most hard-wired instincts for survival.
Intermittent Explosive Disorder

A. Several Discrete Episodes of failure to resist aggressive impulses that result in serious assaultive acts or destruction of property

B. The degree of aggressiveness expressed during the episodes is grossly out of proportion to any precipitating psychosocial stressors

C. The aggressive episodes are not better accounted for by another mental disorder.
Other Mental Disorders that are associated with aggression

- Antisocial and borderline personality disorders
- A manic or psychotic episode
- Attention deficit disorder
- Intoxication
- Traumatic brain injury
- Dementia
Impulse Disorders

- Intermittent Explosive Disorder
- Kleptomania
- Pyromania
- Pathological gambling
- Trichotillomania
- Impulse-Control Disorder NOS
Impulse-Control Disorder NOS

This category is for disorders of impulse control that doesn’t meet criteria for other Impulse control disorders or for any other mental diagnosis that have elements of impulsivity in these mental disorder’s criteria.

Skin-picking is an example of this.
Intermittent Explosive Disorder

- Most aggression in persons with ID/DD is not due to other mental disorders
- The frequency and character of aggression varies with the severity of intellectual and communicative deficits
- The Frequency increases if the person also has a history of epilepsy
- Specific genetic syndromes are associated with aggression
Syndromes associated with aggression

- Lesch-Nyhan Syndrome. X-linked recessive deficiency in purine metabolism that is associated with intellectual deficits, movement disorders and self-injury (lips and fingers)
- Prader-Willi Syndrome. Relatively common genetic cause of ID/DD involves dysmorphic obesity due to hyperphagia, OCD and temper outbursts
Self-Injury

Two broad types

1. Compulsive: associated with stereotypy and obsessionality

2. Impulsive: characterized by tension -> outburst -> relief
Compulsive self-injury

Stereotypy is the excessive production of one type of motor activity. Seen in Pervasive Developmental disorders, Stereotypic movement disorder is common in intellectual disorders.

It is also common in animals and non-ID humans (eg.nail-biting)
Stereotypy in animals

- Associated with confinement and isolation
- Acral Lick Syndrome in dogs is associated with low serotonin turnover and a positive clinical response to prozac
- Amphetamine use in rats is associated with development of stereotypy indicating a role for dopamine. Trials of dopamine antagonists (naltrexone) have some evidence of reducing self-aggression
Stereotypic Movement in ID/DD

- Repetitive nonfunctional motor behavior such as head-banging, skin-picking, rocking that-
  A. can but does not necessarily involve self-injury
  B. interferes with normal activities or requires medical care
  C. Rule out OCD, PDD, Tics and Tourette’s Syndrome
Triad of behaviors common in compulsive type Self-injury

- Self-injury
- Impulse-Control Disorder NOS
- Stereotypy
- Compulsivity
Self-injury in Autism spectrum Disorder

- Autism is characterized by decreased social interaction and communication and a restricted range of stereotypic behaviors
- High frequency of compulsive type self-injury is understandable when considered in this light
- Very similar to OCD in non ID/DD persons yet compulsive self-injury is rare in OCD although common in Tourette’s
Impulsive Self-injury Behavior

- Skin-cutting and burning, self-hitting
- Associated preceding subjective state of anger and higher base line hostility scores of psychological testing
- “spur of the moment” quality to this type
- Associated with a lifetime history of trauma (in non ID population-window of highest vulnerability is early latency age)
Impulsive SIB

Evidence for role of serotonin

- Decrease serotonin levels found in brains of persons who impulsively kill themselves but not in habitual self-injurers
- Polymorphisms in serotonin turnover account for differing levels of stress tolerance and impulsivity
Impulsive SIB

- Associated with impairments in frontal lobe function
- Robust nature + nurture interaction:
  someone with low serotonin turnover and difficulty in inhabiting impulsivity (hypofrontality) will be more likely to experience harsh and inconsistent responses to aggressivity in childhood and even be more likely to be abused. At any rate, negative behaviors will elicit the most responses from caregivers and lead to reinforcement of the injurious behavior
In persons with profound ID (n=181):

- 82% SIB and stereotypy
- 42% physical aggression and property destruction  
  (Popper et al, 2010)

*It was found to be proportionate to degree of sensory deficits and the presence of other mental disorders (psychotic, manic, etc.)*
In a study of persons with borderline-moderate ID/DD in residential care by Embregts et al (2009) that looked at aggression and SIB from a functional perspective (n=87)

Functional analysis of aggression
- Attention
- Tangible gain
- Escape/avoidance
- Self-stimulation
- Physical discomfort
Severity associated with more social functions and underlying psychiatric diagnosis
78% aggressions towards others had a social character/function
Majority of SIB was determined to be related to self-stimulation and physical discomfort i.e. non-social
Aggression as a social behavior

To be socially adaptive in any given social situation, one must have social information processing skills:

- Interpret another’s behavior
- Set goals
- Regulate emotions
- Generate a response
- Evaluate the response and modify behavior
effective pro-social action

Executive functioning  Perspective taking  Emotional recognition
SIP in persons with ID/DD

- Decreased assertive skills
- Encode negative cues better than neutral ones
- High levels of hostile attribution to others’
- In general engage in more aggressive responses
- Evaluate assertive responses negatively
SIP in persons with ID/DD

- Encode less realistic and fewer interpretive clues esp., regarding other’s facial cues (key in emotional recognition)
- Use info from prior experiences rather than focus on present
- The more complex and ambiguous the situation the more hostile the response
- Set more goals based on revenge/relief
- Have a smaller response set to choose form
Empathy

- The capacity to understand and respond to the unique affective experience of another
- Very hot area of brain science now
- We have an automatic. Hard-wired response to mimic the expressions of others via mirror neurons
- This is the neurological source of altruism
Hook up some electrodes to your brain (adult supervision recommended) and eat a burger. Then watch someone else do it. Your brain activity remains the same! This is due to mirror neurons. For more info look up brain expert V.S. Ramachandran.

same brain activity in 1. and 2.
A is observing B experiencing
Empathy

- Shared expressions -> shared feelings
- Complete overlap would be overwhelming so we need to regulate emotions with perspective taking and act in a fashion to positively effect the others situation