

An Analysis of Causes and Management of Aggression among Disabled Children

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ABSTRACT

Aggression influences not only the individual but the entire society. In this study, researcher focused on the bio-psycho-social basis of aggression among intellectually disabled children. In this paper, a literature related to bio-psycho-social model of aggression will be scrutinized in order to understand the aggressive behavior among children with intellectual disability. The objective also included to understand the pattern of family involvement, social isolation, or placement in a more restrictive environment shown by children with disability. For the caregiver, it may result in negative transmission of anxiety, burnout, or trauma. For society, it often means a loss of resources, for example through frequent hospitalizations or incarceration. Four behaviors were identified to be associated with severe aggression in people with intellectual disabilities: (i) antisocial behavior, (ii) impulse control problems, (iii) psychotic symptoms, and (iv) mood symptoms. Medication treatment should be used in combination with many other interventions and support services. Appropriate treatment when psychotropic medications are required includes lower starting doses in children and adolescents than in typically developing peers, and these doses should be increased more slowly.

Keywords: *Aggression, Disabled Children*

In children with intellectual disability, aggression can be viewed as an external behavioral symptom. It is important for the clinician to be aware of the most commonly overlooked, untreated, or undertreated conditions in people with intellectual disability, as they may manifest as behavioral problems. According to Rueve and Welton (2008), a psychiatrist may be the first clinician to evaluate a patient with an intellectual disability, as the patient is often the first to exhibit challenging behavior due to an inability to communicate real physical discomfort. For example, the patient may repeatedly bite their fist, which can be a sign of aggression. However, this patient should be evaluated for possible upper gastrointestinal, upper respiratory, and oral disorders, as well as hand disorders. In addition to possible medical reasons, there appear to be times when patients with a mental health diagnosis are more likely to exhibit aggression, including during hospitalization and in the first few weeks after hospital discharge (Rueve and Welton, 2008). There are various forms of aggression, such as verbal, physical, destruction of property, and

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self-injurious or self-harming behavior, which can view as the most common reason for psychiatric evaluation and assessment of patients with intellectual disability (Tenneij et al., 2009; Hurley et al., 2007; Rueve et al., 2008). Patients with intellectual disability are three to six times more likely to have psychiatric and behavioral problems than the general population (Larson, 2001).

There is rarely a simple answer to the etiology of aggression. Ruv and Welton (2008) examined in their study whether aggression and mental illness are comorbid conditions, related, or merely coincidental. Recently conducted studies identified the neuro-receptors that may be associated with aggression, which can be helpful for the clinician to adopt right treatments of aggression. Because aggression cannot be understood outside of its situational context, the use of a 'biopsychosocial formulation' in the assessment of aggression is important. The biopsychosocial formulation includes predisposing, maintaining, and protective factors and is critical in determining the etiology of aggression and ensuring a correct diagnosis prior to prescribing psychotropic medications. For example, physical illness should be excluded through comprehensive laboratory testing, physical examination, and multidisciplinary referral and consultation when appropriate.

Causes of Aggressive Behavior

A number of factors have been identified responsible for aggressive behavior among children. In comparison of general population, aggression is most common in people with dementia, physical disabled, and the people who experienced grief and loss, tend to avoid or withdraw from unwanted demands or situations, want attention, are attention-seeking or bored (Ruwe & Welton, 2008). Tenneij et al. (2009) examined the aggression in a long-term care facility among people with mild intellectual disability and defiant behavior. A majority of aggressive incidents were directed at caregivers and were triggered by refusal to comply with their requests. In a study conducted by Tenneij et al. (2009), it was found that the higher level of aggression is associated with severe intellectual disability, and self-injurious behavior in particular was associated with more severe or widespread intellectual disability.

Psychological Factors associated with Aggression

Patients with intellectual disability have some additional risk factors for aggression. Aggression in patients with intellectual disability may be an expression of frustration, learned problem behavior, an expression of physical pain, relapse in stressful situations, change in daily routine, or novelty (Rueve and Welton, 2008). There is also an association between sleep problems and challenging daytime behavior (irritability, SIB, hyperactivity, and crying) (Allen et al., 2017). Aggression in children with intellectual disability is associated with comorbid sleep disorders, severe intellectual disability, polypharmacy, seizures, and cerebral palsy (Allen et al., 2017; Didden et al., 2002). Dynamic risk factors include paranoia, obsessive hallucinations, incompetence, impulsivity, low global ratings of functioning, homicidal tendencies, depression, hopelessness, suicidality, and access to weapons (Larson et al., 2001). Cooper et al. (2009) concluded that self-injurious behavior may not be as persistent and long-lasting as previously thought. Royan et al. (2004) examined self-injurious behavior and aggression and their association with impulse control and conduct disorders.

Cognitive Impairment associated with Aggression

Aggression towards others is more common in people with less severe cognitive impairment and better verbal communication skills, whereas self-injurious behavior is more common in people with severe intellectual disability, who may have reduced mobility, poorer self-care

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skills, more severe hearing impairment, increased stereotyped movements, and less developed social skills. Transitions are notoriously difficult for people with intellectual disability, and many experience them. For example, moving from the educational to the occupational environment can also bring new life circumstances. Entering school means exposing oneself to a variety of new experiences, more noise, transitions, and other factors that may trigger SIB or other aggression. It can also be a transition time for peers, siblings, parents, and others, and is therefore a particularly vulnerable time for the recurrence of grief and loss issues. Family members themselves may experience symptoms of grief and loss as the person with intellectual disability progresses through various developmental stages or as these stages typically occur in a child or sibling without intellectual disability (enrolling in school, graduating from high school, entering college, marrying, having children). Regardless of a person's communication skills, treatment is unlikely to be effective if aggression continues to be a more effective means of getting attention than other tried-and-tested behaviors (Allen et al., 2007). To change, they need help learning new ways and receive less reinforcement (reward) for using aggression. When George Engel proposed the biopsychosocial model of illness in 1977, he said, “(To) provide a basis for understanding the determinants of illness and for developing rational treatments and health care models, the medical model must take into account the patient, the social context in which he lives, and additional systems that society has developed to deal with the painful consequences of illness” (Campbell and Rohrbaugh, 2007).

Psychiatric Problems as associated with Aggression

There are known to be several psychiatric problems associated with aggression. These include substance abuse disorders, psychotic disorders (especially those associated with paranoia), affective or mood disorders, personality disorders (especially antisocial and borderline personality disorders), conduct disorders, oppositional defiant disorder, sexual sadism, pervasive developmental disorders, and delirium/dementia (Rueve and Welton, 2008). Aggression in children with intellectual disability is associated with severe intellectual disability, polypharmacy, seizures, and cerebral palsy (Didden et al., 2002).

Other Medical Conditions associated with Aggression

There are also many medical conditions directly associated with aggression. These include traumatic brain injury (especially more severe injuries associated with loss of consciousness), intracranial pathologies (including tumors, infections, and cerebrovascular disease), and metabolic disorders (including thyroid disease or other hormonal disorders). Systemic infections, environmental toxins, and certain neurological conditions such as complex focal seizures or temporal lobe lesions with abnormal electroencephalograms should also be considered.

Biological factors associated with Aggression

Prefrontal or frontal lobe dysfunction may play an important role in aggression. The frontal lobe is responsible for executive functions; this includes cognitive processes such as the ability to recognize the consequences of actions. When a patient makes a choice between good and evil or better and better, this logic and reasoning assumes intact frontal lobe function (Rueve and Welton, 2008). The frontal cortex is also likely a brain region associated with the ability to ignore or suppress inappropriate social responses; frontal lobe function is associated with planning, organizing, and filtering behavioral responses. Temporal lobe dysfunction may also directly impact the likelihood of aggression. The temporal lobe and its associated structures are involved in fear and response to danger (Rueve and Welton, 2008). Patients with intellectual disability are likely to have associated

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neurological disorders or dysfunction in the temporal lobes. In populations with intellectual disability, several extremely rare syndromes have been associated with SIB: Lesch-Nyhan syndrome, Smith-Magenis syndrome, Cornelia de Lange syndrome and Prader-Willi syndrome (Fletcher et al., 2007).

Other Causes

Other causes and consequences identified are isolation from caregivers and other psychological or social consequences resulting from the behavior.

- **Age:** The two age groups in which aggression was most common were late adolescence and early adulthood; males aged 20 to 35 years were at greatest risk (Tenneij et al., 2009). Deb et al. (2008) (Deb and Unwin, 2007) found that higher self-injurious behavior was found associated with more severe intellectual disability, poor social skills, and autism.
- **Unmet needs:** McClintock found that aggression was most strongly associated with visual impairment, hearing impairment, inability to express one's needs, and difficulty walking, which are thought to result in unmet needs.
- **Socio-economic status:** Many researchers have examined the risk factors for aggression related to residential environment for children with intellectual disabilities (McClintock, 2001). Behaviors and risk factors predicting aggression included history of violence, male gender, age between 20 and 35 years, more severe forms of intellectual disability, and presence of personality disorders.

Treatment and Management of Aggression

Developing a differential diagnosis for aggression can lead to potential treatments that identify targeted behaviors that may respond to medication, such as a mood disorder characterized by aggressive behavior associated with sleep disturbances. Once this is done, it is important to establish a baseline frequency of the target behavior to monitor treatment response. A behavioral psychologist or behavior support specialist can assist with development, monitoring, and training staff/lead caregivers in data collection. The heterogeneity of aggression makes it difficult to develop comprehensive and inclusive treatment recommendations. Treatment decisions, including medication use, should be guided by the biopsychosocial model and evaluate the big picture on an ongoing basis. There are many variables to consider when using medications in an intellectual population, and sometimes they are not indicated. For example, to quote (La Malfa et al., 2006), Antipsychotics are the most commonly prescribed medications for people with intellectual disability, although schizophrenia and other psychotic disorders affect no more than 3% of this population (La Malfa et al., 2006). In the past, patients with aggression were sometimes mistakenly prescribed antipsychotics because they had only a sedative effect. However, self-reporting of adverse drug reactions is often impaired in patients with intellectual disability due to their limited communication skills. It is estimated that 20% of patients with intellectual disability experience adverse drug reactions, with some adverse reactions being more severe (Habler and Reis, 2010). Neuroleptic malignant syndrome is twice as likely to cause death in patients with intellectual disability as in the general population (Habler and Reis, 2010). Evidence suggests that patients with intellectual disability are likely to experience higher rates of hypersensitivity and adverse reactions to psychotropic drugs, possibly due to central nervous system damage and metabolic, pharmacodynamic and pharmacokinetic differences (Janowsky et al., 2005). Therefore, all psychotropic drugs should be used with extreme caution. Medication treatment should be used in combination with many other interventions and support services. Appropriate treatment when

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psychotropic medications are required includes lower starting doses in children and adolescents than in typically developing peers, and these doses should be increased more slowly.

Expert consensus guidelines recommend that treatment should be based on the most specific psychiatric diagnosis (Aman, et al., 2004). In condition of only provisional, nonspecific diagnosis can be made, such as in severe/profound intellectual disability, clinicians should focus on one or more behavioral symptoms as treatment goals. Psychotropic medications may or may not be part of treatment, but they should not be the only treatment strategy. In general, pharmacologic treatment of patients with intellectual disability does not differ significantly from pharmacotherapy of patients without intellectual disability. Risperidone and aripiprazole are well documented and effective in treating children with intellectual disability, particularly those with autism. They are the medications of choice for treating behavioral problems in children and adolescents with intellectual disability (Volavka et al., 2006). Disruptive behavior should be addressed (either through pharmacotherapy or other interventions), although there are no clear diagnostic criteria or uniform methods of measurement. Medications have been shown to reduce impulsivity, aggressiveness, and agitation, regardless of etiology. Patients with intellectual disability typically have a high prevalence of disinhibition, impulsive behavior, and lack of filtering, as well as varying degrees of deficits in executive function, compared with the general population. For problematic behavior, pharmacotherapy is the main treatment option, provided several conditions are met. Issues of informed consent should be carefully considered, and special attention should be given to patients with cognitive deficits who are acting as their own caregivers. Many expert consensus guidelines instruct the clinician to start with a low dose and increase the dose gradually. Some adverse reactions may be more severe or manifest differently in patients without intellectual disability than with similar treatment, and patients may not be able to describe them verbally. The use of standardized and universal rating scales should be used to identify and monitor target symptoms and extrapyramidal symptoms and to screen for metabolic side effects. In cases where monotherapy does not respond, combinations of psychotropic drugs may be useful, but unnecessary polypharmacy and avoidance should be avoided.

DISCUSSION, CONCLUSION & IMPLICATIONS

In summary, using a biopsychosocial formulation and incorporating the patient's developmental stage allows the clinician to accurately diagnose and treat patients with intellectual disability when they exhibit aggression. The biopsychosocial model is useful when attempting to determine the etiology of aggression in a person with intellectual disability. The model or formulation involves gathering information from a variety of sources: interviews with the patient, discussions with family members and/or caregivers, review of medical records, and contacts with collaborating agencies. This leads to the formulation of the problem(s), diagnosis, and treatment plan (Campbell and Rohrbaugh, 2007). The biopsychosocial model allows for assessments that change over time and should be updated regularly, even in patients well known to the clinician. Some of its components may vary from assessment to assessment or even from day to day, depending on the disorder and the "supportive, predisposing, sustaining, maintaining, and protective factors" associated with the disorder. When assessing a patient with an intellectual disability who has been regularly aggressive over an extended period of time, the clinician should ask about the onset and chronology of the aggression, as well as any other associated symptoms. It is important not only to identify the problem, but also to establish who identified the problem, how long it has been present, in what context it exists, and, if it has been present for a long

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time, why an assessment is needed now. It is important that the person leading the assessment be present to explain any special concerns. The patient's premorbid functioning must be understood and described in detail. If the intensity of a symptom waxes and wanes or changes depending on stress levels or environment, all relevant details about those circumstances should be documented. If a behavioral symptom occurs only at home or only at work, this is important information. If the behavior increases in frequency or intensity at certain times, or only exists at a certain time of day, a specific environment, before or after certain events (i.e. family visits), or when a certain staff member or family member is present, this can narrow down the differential diagnoses. The behavior may signal a problem for the person that is interpersonal, physical, or environmental. Factors that were less strongly associated but likely to play a role included psychiatric pathology, presence of self-injurious behavior, and antisocial behavior. Previously, Nijman and Palmstierna (2002) found that at least four behaviors were associated with and predictive of severe aggression in people with intellectual disabilities:

- Antisocial behavior,
- Impulse control problems,
- Psychotic symptoms, and
- Mood symptoms.

Tenney et al. (2009) also found that, in addition to the previously mentioned factors, self-injurious behavior may be a unique characteristic of the population with intellectual disabilities, indicative of the severity of aggression in general, which is confirmed by other studies. Previous studies have reported a wide range of prevalence rates of self-injurious behavior in individuals with intellectual disabilities, ranging from 1.7% to 41% (Cooper et al., 2009). Self-injurious behavior is a very serious condition for the patient and more accurate estimates of prevalence are needed. Cooper et al. (2009) identified three risk factors in adults with intellectual disabilities that may increase the likelihood of self-injurious behavior:

- Lower cognitive ability,
- Diagnosis of autism, and
- More severe communication disorders.

Other factors that may be associated, but were not included in the Cooper et al. study, included,

- Not living with family,
- Not having Down syndrome,
- Having a diagnosis of attention deficit hyperactivity disorder,
- Having a visual impairment, and
- Requiring a high level of residential support.

The prevalence of self-injurious behavior was higher in the institutionalized population, but this finding was explained by the increased risk of institutionalization in this subgroup of the population. No significant association was found between gender and self-injurious behavior.

Diagnosing and treating aggression in a patient with an intellectual disability requires careful detective work. The foundation of detective work is the use of a comprehensive biopsychosocial formulation and taking time in determining the most appropriate interventions and treatments. This includes the strategic use of collateral data from all areas

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and from various important people in the patient's life. Medication treatment should be used in combination with many other interventions and support services. Appropriate treatment when psychotropic medications are required includes lower starting doses in children and adolescents than in typically developing peers, and these doses should be increased more slowly.

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Conflict of Interest

The author(s) declared no conflict of interest.

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