THEORY

SOCIAL DEFICIT HYPERACTIVITY DISORDER (SDHD): A SIBLING OF ADHD?

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Abstract

Attention deficit hyperactivity disorder (ADHD) is one of the most common childhood disorders, affecting approximately 7% of the population, the exact cause of which is unknown. It is widely recognized as a non-curable neurobiological behavior disorder, characterized by inattention, hyper¬activity, and impulsivity, and is routinely treated using stimulant medication and behavior modifica¬tion techniques.

New research indicates a positive correlation between ADHD symptoms and physiological changes associated with the increased release of the stress hormones norepinephrine, epinephrine, and cortisol, and a corresponding reduction in neurotransmitter levels of dopamine and serotonin. It is suggested that these physi-ological changes in children may be directly attributed to prolonged exposure to stress in early childhood, both in care facilities and the compulsory school system.

Ongoing research has linked bullying with similarly fluctuating neurotransmitter levels. Bullying is a complex and subjective behavior pattern, destructive by nature, pervading every aspect of society, and thought to affect 20% of the population. Given that bully behavior is characterized by morbid so¬cial behavior, hyperactivity and/or hyper-reality, and impulsivity, and predominates in the compulsory school system, the parallel with ADHD is observed, making the choice of the label, social deficit hyperac-tivity disorder (SDHD), appropriate.

The authors believe that the impact bullying has on learning and working environments cannot be quantified until SDHD is first recognized and accepted as a neurobiological behavioral disorder with determinate criteria. Classification of SDHD would facilitate research into the hypothesis that ADHD and SDHD are comorbid conditions and give the condition the attention it deserves.

Cite as: Laurens, S. D., & Rossouw, P. J. (2015). Social deficit hyperactivity disorder (SDHD): A sibling of ADHD? *International Journal of Neuropsychotherapy, 3*(1), 92–100. doi: 10.12744/ijnpt.2015.0092-0100

Attention deficit hyperactivity disorder (ADHD) is a neurobiological behavioral disorder (Rief, 2005) that is also referred to as a brain-based biological disorder ("ADHD: A Biological Disorder," *n.d.*), a behavioral disorder (Hutchison, 2013), a neurobehavioral **developmental disorder** (Raposa & Perlman, 2012), a dimensional disorder of human behavior, and a chronic physiological disorder (Rief, 2005). ADHD is evaluated and diagnosed by professional clinicians including paediatricians, psychiatrists, clinical psychologists, neurologists, clinical social workers, and family practitioners (Rief, 2005) and is based on observable behavior characterized by inattention, hyperactivity, and impulsivity (The Royal Australasian College of Physicians, 2009).

Genetic predisposition is thought to be the most likely and most common cause of ADHD (National Institute for Mental Health, 2014), accounting for about 80% of children with ADHD according to leading researchers (Rief, 2005). ADHD is one of the most common childhood disorders; it usually appears between the ages of 3 and 6 and is typically diagnosed in children before they reach the age of 7 years. ADHD affects approximately 7% of the population and is 4 times more likely to affect boys than girls. ADHD can be a lifetime affliction: It is not curable and is habitually treated with stimulant medication and/or behavior modification techniques to control the symptoms (National Institute for Mental Health, 2014).

The central nervous system stimulant medications approved for use in children diagnosed with ADHD have the same chemical structure as some potent illegal drugs: Adderall is an amphetamine (street name: speed); Dexedrine and Dextrostat are dextroamphetamines (street name: uppers); Desoxyn is a methamphetamine (street names: ice, crystal meth); and Ritalin, Concerta, Metadate, and Methylin are methylphenidates (street names: kiddy-cocaine, poor man's cocaine). These medications are available in short-acting, long-acting, or extended-release varieties and are approved for use in children age 6 and older; two have an approved age of 3 years. Commonly reported side effects of stimulant medications are decreased appetite, sleep problems, anxiety, irritability, stomach aches, and headaches (National Institute for Mental Health, 2014). These side effects serve to compound the problem behavior already associated with ADHD.

Behavior is a response by an individual in the context of stimuli from the environment (Odendaal & Meintjes, 2003) and can be viewed as being a nonverbal communication tool used to ensure the individual's needs are met. Behavior gives clues as to how an individual is handling a situation with the onus on the observer/facilitator to correctly interpret the behavior to assist, where appropriate, an outcome where the needs of the individual are met. Observable behavior that suggests inattention, hyperactivity, and impulsivity in the ADHD diagnosis can be interpreted as a normal response to a stress stimulus where a flight or fight reaction can be expected.

The fundamental need of an individual to be in a state of physical and emotional safety is of primary

Table 1. ***Stages of Psychosocial Development***

Stage	Maslow	Erikson	Rossouw	Roberts
1	Physiological	Trust	Safety	Free from physical restraint
2A	Safety		Control	
2B		Autonomy	Attachment	Choice
3	Belonging / love	Initiation	Pain avoidance/ pleasure maximization	Join-up (trust)
4	Self-esteem	Industry	Self (self-esteem)	Follow-up (interrelationships)
5	Self-actualization	Identity		

importance in each individual's physical, emotional, social, and cognitive development. Four theories that support this assertion are:

- Abraham Maslow's hierarchy of needs (Odendaal, 2002);
- Erik Erikson's stages of psychosocial development (Cherry, 2015);
- Pieter Rossouw's neurobiological perspective (Rossouw, 2012, 2013a, 2014); and
- Monty Roberts's philosophy of join-up (Roberts, 2000).

The relevant stages of psychosocial development according to these four models are summarized in Table 1.

Whilst each of these theories varies enormously in their approach, common threads are evident:

1. The fundamental basis is safety. Pathology emerges when this need is violated or compromised (Rossouw, 2013b, 2014).
2. There is a basic need for attachment with the primary caregiver and the need to establish trust.
3. The ability of an individual to maintain control over their physical and emotional needs is determined by the available choices and is dependent on the foundational needs having been met.
4. Relationship stability is initiated by an individual's need for a sense of belonging and can only be initiated successfully from a position of self-control.
5. A well-established self-esteem is wholly dependent on relationship permanence.
6. A successful assimilation of self-worth paves the way for a joyful realization of an individual's true identity and potential.

Optimal brain development occurs in an environment where an individual's primary needs are met, where the needs are not compromised or violated. Such an environment is conducive to the release of neurotransmitters essential for the activation of open neural pathways. Violation of an individual's basic needs triggers a stress response with corresponding physiological changes, including an increased release of the stress hormones norepinephrine, epinephrine (adrenaline), and cortisol, and a decreased release of the neurotransmitters serotonin and dopamine (Rossouw, 2012). Prolonged exposure to stress compromises the body's innate ability to restore itself to equilibrium (homeostasis), leaving it vulnerable to long-term nerve cell damage. Chronic stress may ultimately lead to a depletion of norepinephrine, epinephrine, cortisol, serotonin, and dopamine (Selye, 1950). Symptoms associated with some of these physiological changes, as outlined in Jade (2014), Gloom (2014), TheDEA.org (*n.d.*), and Schultz (2011), are set out in Table 2.

A comparison of the symptoms resulting from fluctuation in neurotransmitter levels and the diagnostic criteria for hyperkinetic disorders could lead one to conclude a correlation between chronic stress and ADHD may exist. (See Table 3.)

Given that the onset of ADHD symptoms usually appear in children between the ages of 3 and 6, and ADHD is usually diagnosed by the age of 7, it is appropriate to consider what elements of stress have presented in these children during that time. As the compulsory age for school attendance is usually 6 years and is often preceded by a couple of preschool preparation years, it is appropriate to suggest a significant contributory source of fear and distress—and, ultimately, chronic stress—may indeed be derived from a child's participation in early childhood care facilities and the compulsory school system.

These facilities require children to leave their home environment—essentially a place of physical and emotional safety—and the nurturing influence of their trusted primary caregivers. Children are then exposed to a foreign environment, which, by virtue of its unfamiliarity, in most cases invokes fear and distress resulting in behavior appropriate for the situation, instinctive survival behavior. This behavior is unfortunately deemed inappropriate for the school environment. The opportunity to regain a sense of equilibrium at home is then thwarted by the requirement for children to comply with homework demands. As a result, the basic needs of safety, trust, and attachment are eventually eroded, the element of choice and control is deprived, the prospect of self-determination is jeopardized, significant learning difficulties are experienced, and lasting damage to the individual's cognitive function is imposed (Rossouw, 2013a). Monty Roberts (2000), in his work with horses, shows that if fear is removed from the environment, both learning and innovation can develop freely. The same can be said of children, as illustrated by the countless lives Robert's has influenced through his equine facilitated interventions.

The impact of the school environment on children's behavior should also be considered in the con-

Table 2. *Symptoms Resulting From Fluctuations in Norepinephrine, Serotonin, and Dopamine*

Norepinephrine increased levels	Norepinephrine reduced levels	Serotonin reduced levels	Dopamine reduced levels
Alertness	Fatigue	Insomnia	Fatigue
Energy	Low energy		Low energy
Concentration	Lacks concentration	Impatience/impulsivity	Distractible
Focused	Lacks focus	Irritability	Restless
Responsive	General apathy	Indifference	Lacks motivation
			Chronic boredom
		Anxiety	Lacks ability to feel pleasure and reward
		Mood swings	Inappropriate emotional responses
		Sadness	Lacks sense of attachment/feeling of being loved
		Aggressive behavior	Lack of remorse about actions
		OCD behavior including thoughts	Addictive behavior
		Cravings (carbohydrates, sugar)	Cravings (coffee, chocolate, carbohydrates, sugar)
		Appetite loss	
		Cognitive impairment	Diminished academic achievement
		Organizational difficulties	Working memory (short term memory) impairment

text of other causes implicated by reduced serotonin and dopamine levels. Lack of sufficient sleep, lack of physical activity, insufficient exposure to sunlight, and nutritional deficiencies are all considered contributing factors in ADHD behavior.

Another factor, genetic predisposition to ADHD, suggests:

An individual was born with presumed ADHD genes, thereby predisposing that individual to ADHD through genetic transference.

An individual was exposed as a foetus to nicotine, thereby predisposing the individual to ADHD through environmental factors (National Institute for Mental Health, 2014)

An individual was born into a family where at least one parent/primary caregiver is diagnosed as having ADHD, thereby predisposing the individual to ADHD through learned behavior.

Notwithstanding the significance of a possible ADHD gene and nicotine involvement, the learned behavior option is of particular interest in the context of this article. Just as a child learns to speak English in an English-speaking family, so too does a child learn anxiety-reducing methods by imitating the same methods used by the family members. Suffice to say, if a child is not exposed to chronic stress prematurely, there should be no need for their survival instinct to manifest—thereby eliminating or reducing a child's need to experiment with or implement learned stress management techniques.

The possible causes of ADHD and links to reduced neurotransmitter levels are outlined in Table 4.

Whilst ADHD is considered a neurobiological behavioral disorder, there is an equivalent social disorder that deserves recognition and consideration. Social deficit hyperactivity disorder (SDHD) is the name we have given to what is commonly referred to

Table 3. Elaborate Interpretation of the Diagnostic Criteria for Hyperkinetic Disorders Extracted From DSM-IV and ICD-10 Tables

	Diagnostic criteria for hyperkinetic disorders (The Royal Australasian College of Physicians, 2009)	Suggested symptom of fluctuation in neurotransmitter levels	Suggested neurotransmitter involvement	Suggested communication preference	Suggested learning style preference
	Inattention	**Reduced levels**	**Reduced levels**		
1.	Is often easily distracted by external stimuli	Distracted	Dopamine	Nonverbal	Visual
2.	Often does not seem to listen when spoken to directly	Lacks focus	Norepinephrine	Nonverbal	Not auditory
3.	Often fails to give close attention to detail	Lacks concentration	Norepinephrine	Nonverbal	Not visual
4.	Often has difficulty sustaining attention in tasks or play activities	Lacks concentration	Norepinephrine	Nonverbal	Not tactile
5.	Often makes careless mistakes in school work or other activities	Indifference/impatience	Serotonin	Nonverbal	Not visual
6.	Often avoids or strongly dislikes tasks that require sustained mental effort	Lacks motivation	Dopamine	Nonverbal	Not visual
7.	Fails to follow through on instructions	Lacks motivation	Dopamine	Nonverbal	Not auditory
8.	Fails to finish schoolwork or chores	Lacks motivation	Dopamine	Nonverbal	Not tactile
9.	Is often impaired in organizing tasks and activities	Organizational difficulties	Dopamine	Nonverbal	
10.	Often loses things necessary for certain tasks or activities	Memory impairment	Dopamine	Nonverbal	
11.	Is often forgetful in the course of daily activities	Memory impairment	Dopamine	Nonverbal	
	Hyperactivity	**Increased levels**	**Increased levels**		
12.	Often leaves seat in situations when remaining seated is expected	Energy	Norepinephrine	Nonverbal	Kinetic
13.	Often runs about or climbs in situations where it is inappropriate	Energy	Norepinephrine	Nonverbal	Kinetic
14.	Is often "on the go"	Energy	Norepinephrine	Nonverbal	Kinetic
15.	Often acts as if "driven by a motor"	Energy	Norepinephrine	Nonverbal	Kinetic
16.	Often squirms in seat	Energy	Norepinephrine	Nonverbal	Kinetic
17.	Often fidgets with or taps hands	Energy	Norepinephrine	Nonverbal	Tactile
18.	Often has difficulty playing or engaging in leisure activities quietly	Energy	Norepinephrine	Verbal	Auditory
19.	Is often unduly noisy in playing	Energy	Norepinephrine	Verbal	Auditory
20.	Often talks excessively	Energy	Norepinephrine	Verbal	Auditory
	Impulsivity	**Reduced levels**	**Reduced levels**		
22.	Often intrudes on others (e.g., butts into games)	Impatient/ impulsive	Serotonin	Nonverbal	Kinetic
23.	Often has difficulty waiting in line or awaiting a turn in games or group situations	Impatient/ impulsive	Serotonin	Nonverbal	Kinetic
24.	Often interrupts others (e.g., butts into conversation)	Impatient/ impulsive	Serotonin	Verbal	Auditory
25.	Often blurts out answers before questions have been completed	Impatient/ impulsive	Serotonin	Verbal	Auditory

Table 4: *Possible Causes of ADHD and Reduced Neurotransmitter Levels*

Factor	Possible causes of ADHD (Martin, 2014)	Causes of reduced serotonin levels	Causes of reduced dopamine levels
Genetic	Genetic predisposition	Genetic predisposition	Genetic predisposition
Physiological		Not managing stress levels	Chronic stress
		Lack of exercise/physical activity	Lack of exercise/physical activity
		Lack of sufficient sleep	
	Food additives		Consistent dopamine stimulation
	Nutritional deficiencies		Nutritional deficiencies
	Brain injuries		Medical conditions
Environmental	Foetal exposure to nicotine	Insufficient exposure to sunlight	

as bullying, the complex behavior commonly found in the compulsory school system. SDHD shows some remarkable similarities to the same neurotransmitter level distortions found in ADHD patients and inasmuch can be considered in the same light—as a neurobiological behavioral disorder. SDHD is characterized by morbid social behavior, hyperactivity and/or hyperreality, and impulsivity. (See Table 5.)

It is widely believed that bullying is perpetrated by an individual from a position of power or perceived power. This simply means the individual is in control of a situation, indicating a position of dominance or leadership. The fact that bullying is often conducted as a group reinforces the pack concept: In a group, an individual's chances of survival are much greater, and the need for an individual to want to take control of a situation suggests that the individual may very well be operating from a position of fear themselves. Unfortunately (and with the utmost respect for professional educators), fingers once again point to the compulsory school system. Fundamentally, the school system is an institution where control of an individual, or the removal of choice from an individual, is paramount to the success of its intended outcomes, even when the intended outcomes are noble. The element of control essential for the efficacy of the compulsory school system may in fact be the source of fear to which an individual who engages in bullying activities is responding. Bullying, therefore, can essentially be viewed as social survival; an individual taking control of their life at the expense of someone else.

The physical and psychological welfare of SDHD on a targeted person is not within the scope of this article. However, suffice to say that the social, emotional, and cognitive implications are extremely significant given the high rate of anxiety, depression, suicide, self-harm and substance abuse that occurs amongst those affected.

When control is wrested from children, the myriad of behavior exhibited through ADHD and SDHD may perhaps be regarded as a nonverbal communication tool children use to tell us something is horribly wrong with the situation they find themselves in. If indeed bullying or SDHD can be described as social survival, is it appropriate to consider whether ADHD may be a child's effort to ensure cognitive survival? Is a child who is diagnosed with ADHD predisposed to developing SDHD? Is ADHD a precursor to SDHD? Are individuals who do not participate in the compulsory school system (i.e., home educated) equally predisposed to ADHD and SDHD? Does the same gender ratio (i.e., 4 males to 1 female) observed with ADHD also extend to SDHD? Or does the gender ratio perhaps reverse (e.g., 4 females to 1 male)? Is there a link between Asperger's syndrome and SDHD?

As ADHD and bullying (SDHD) continue to create mayhem in society, these are but a few of the questions that merit an answer while children continue to be the target of research involving stimulant medi-

cation and behavior modification techniques. Whilst experimentation on animals is hideous but arguably necessary, experimentation on our children is heinous and quite intolerable. Serious consideration should be given to viable alternatives to prescription stimulant medication and behavior modification techniques. For example, alternatives that recognize that the satisfaction of the needs of a child is integral to their physical, cognitive, emotional, social, and moral development; alternatives where the child's need for control is respected, their emerging self-esteem celebrated, and their desire to strive for self-actualization encouraged; and alternatives in which the environment is joy based and provides sufficient pleasurable experiences to ensure neurotransmitter levels are naturally maintained at a healthy level.

Until SDHD is recognized and accepted as a neurobiological behavioral disorder with determinate criteria, the economic impact on learning and working environments cannot be quantified and the proportion of the population affected by the condition cannot becounted. It is conservatively estimated that 20% of the population are victims of individuals with SDHD (i.e., are victims of bullying), but this figure is in all probability much higher given the subjective nature of bullying. There is no doubt SDHD is an extremely destructive condition, pervading every aspect of our society and deserving urgent attention.

Table 5:

Elaborate Interpretation of Suggested Diagnostic Criteria for the Evaluation of Social Deficit Hyperactivity Disorder (SDHD)

Note. The information in Table 5 was compiled from the following sources: REACHOUT.com, Australia's leading online youth mental health service; beyondblue (2014); State Government of Victoria Department of Education & Training (2014); McGrath and Noble (2006); and Porter (2007); and Robinson (*n.d.*).

	Suggested Diagnostic Criteria for the evaluation of Social Deficit Hyperactivity Disorders (SDHD)	Symptom of reduced neurotransmitter levels	Neurotransmitter involvement	Communication preference
	Morbid Social Behavior		Reduced levels	
1.	Repeatedly engages in behavior intended to be hurtful or cause distress to another person	Inability to feel pleasure	Dopamine	Nonverbal
2.	Often abuses position of power (or perceived power) to exert control over another person	Inability to feel pleasure	Dopamine	Nonverbal
3.	Often uses extortion to obtain money, food, possessions, or sexual gratification from another person	Inability to feel pleasure	Dopamine	Nonverbal
4.	Often uses extortion to force a person to commit antisocial or illegal acts, including theft, vandalism, sexual acts	Inability to feel pleasure	Dopamine	Nonverbal
5.	Often uses threats to expose shared confidences	Inability to feel pleasure	Dopamine	Nonverbal
6.	Often uses threat of exposed shared confidences to obtain favors, including sexual favors	Inability to feel pleasure	Dopamine	Nonverbal
7.	Often discriminates against a person based on ethnic or gender bias, subjecting that person to repeated harassment	Inability to feel pleasure	Dopamine	Nonverbal
8.	Often discriminates against a person with a physical handicap, cognitive impairment, emotional vulnerability, or who is socially disadvantaged, subjecting that person to repeated harassment	Inability to feel pleasure	Dopamine	Nonverbal
9.	Often uses exclusion tactics to socially isolate a person, including conditional or restrictive tactics	Inability to feel pleasure	Dopamine	Nonverbal
10.	Often uses public exclusion tactics to socially isolate a person, including huddles, loud gangs, or hiding away	Inability to feel pleasure	Dopamine	Nonverbal
11.	Often leaves anonymous notes or phone messages for another person	Inability to feel pleasure	Dopamine	Nonverbal

12.	Often uses inappropriate facial expressions intended to embarrass, humiliate, or intimidate another person	Inability to feel pleasure	Dopamine	Nonverbal
13.	Often uses inappropriate hand gestures intended to embarrass, humiliate, or intimidate another person	Inability to feel pleasure	Dopamine	Nonverbal
14.	Often uses social network channels to isolate, misrepresent, embarrass, humiliate, or intimidate another person	Inability to feel pleasure	Dopamine	Nonverbal
15.	Fails to show empathy for their victim	Lacks sense of attachment	Dopamine	Nonverbal
16.	Fails to show regret for antisocial behavior	Lack of remorse	Dopamine	Nonverbal
17.	Fails to acknowledge that antisocial behavior is inappropriate	Lack of remorse	Dopamine	Nonverbal
	Hyperactivity/Hyperreality			
18.	Often involved in aggressive physical behavior with intent to oppress another person, including pushing, shoving, punching, hitting, bashing, kicking, tripping, hair pulling, and clothing pulling, with or without a weapon	Aggressive	Serotonin	Nonverbal
19.	Often uses loud, aggressive language with intent to embarrass, humiliate, threaten, or oppress another person, including screaming and swearing	Aggressive	Serotonin	Verbal
20.	Often involved in destructive behavior with intent to steal or destroy another person's property	Aggressive	Serotonin	Nonverbal
21.	Often makes unsolicited sexual advances toward another person, including kissing and touching	Aggressive	Serotonin	Nonverbal
22.	Repeatedly and intentionally stalks another person	OCD behavior	Serotonin	Nonverbal
23.	Often uses technology to sabotage another person's identity and wellbeing	OCD behavior	Serotonin	Nonverbal
24.	Often uses stares, disparaging looks or rolling eyes to embarrass or intimidate another person	Inability to feel pleasure	Dopamine	Nonverbal
25.	Often calls another person derogatory names	Inability to feel pleasure	Dopamine	Verbal
26.	Often gossips or spreads malicious rumors about another person	Inability to feel pleasure	Dopamine	Verbal
27.	Often tells lies about another person	Inability to feel pleasure	Dopamine	Verbal
28.	Often verbally insults or ridicules another person, including the use of taunts or sarcasm	Inability to feel pleasure	Dopamine	Verbal
29.	Often engages in negative verbal teasing of another person including telling jokes about that person	Inability to feel pleasure	Dopamine	Verbal
30.	Often engages in negative physical teasing of another person, including playfully pulling hair or clothing, intentionally bumping or crowding	Inability to feel pleasure	Dopamine	Nonverbal
31.	Often uses code names for a person or whispers about another person behind their back	Inability to feel pleasure	Dopamine	Verbal
	Impulsivity			
32.	Often intrudes on others (butts into games or activities)	Impatience/impulsivity	Serotonin	Nonverbal
33.	Often actively attempts to spoil a game or activity of another person	Impatience/impulsivity	Serotonin	Nonverbal
34.	Often interrupts another person (butts into a conversation)	Impatience/Impulsivity	Serotonin	Verbal
35.	Often taunts or provokes another person already involved in a conversation	Impatience/Impulsivity	Serotonin	Verbal

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