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# Understanding ADHD: Should ADHD, Emotional Dysregulation Type, be added to the DSM-5 in its next text revision

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## ABSTRACT:

ADHD is a universal phenomenon afflicting millions of individuals, young and old. Over the years through meticulous and painstaking review and research of available data, the field of Psychiatry has been fortunate to come to an understanding of the basics of the condition. However much still remains to be discovered and understood. DSM-III, DSM-IV, and DSM-5 all have had the commonly known sub-types of ADHD into Hyperactive and Inattentive forms. We propose that another subset be added to the ADHD spectrum, i.e. Emotional Dysregulation type. This article is a review of 41 psychological assessment evaluations for the verification attention-deficit hyperactivity disorder (ADHD) diagnosis based on DSM-5/DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders, Edition-5 & 4th Edition Text Revised) criteria for children between ages 6 through 17, conducted over the period a two year period. These individuals were not only evaluated for a diagnosis of ADHD, but also differential diagnosis of various behavioral, neurodevelopmental, intellectual developmental, anxiety, mood, substance use, psychotic, and personality disorders were investigated. Results showed that 70% of children who were suspected of having ADHD by their parents did not meet the DSM criteria for ADHD with its existing sub-types. The finding of our study was that the single most common diagnosis observed in these children who were referred for "ADHD assessment" was Parent-Child Relationship Problem (34.1%), followed by Mood Disorders (31.7%) and Other Behavior Disorders (24.9%). These results are consistent with the studies investigating whether ADHD should constitute a separate clinical entity with disruptive disorders (oppositional defiant disorder [ODD] or conduct disorder [CD]), with the internalizing disorders (anxiety and/or depression), or all of the above. The meaning of high co-morbidity of ADHD with ODD, which can be anticipated to be as high as up to 30%- 60%, is commonly discussed in clinical and academic circles. It is thought that perhaps we are overlooking a large part of the ADHD spectrum disorders by not including ADHD; Emotional Dysregulation Type, in the DSM. We recommend that the next DSM revision committee on ADHD, consider this as an option.

## Introduction

This study evaluates the diagnosis for children between ages 6 through 17 who came to an outpatient psychiatric clinic with a presenting attention problems to identify their ongoing service needs. 60 school aged children aged 6 through 17 years were assessed in the Puget Sound Psychiatric Clinic Assessment Center in Bothell, WA over the period between January 2011 and December 2013. The reasons for these psychological assessments were diagnostic clarifications for ADHD, Behavioral Problems, Autistic Spectrum Disorders, Social and Academic Problems, and Thought Disorders.

It is to note that during the compilation and analysis of the data the DSM IV-TR changed to DSM-5. And although there have been some positive changes in the new edition of the DSM, yet the authors feel that perhaps still a portion of ADHD patients; especially the sub-type of Emotional Dysregulation Type have been left out.

A total of 41 cases out of total of over 100 assessments were chosen for further analysis. By eliminating the other cases, it was the attempt of the authors to try to keep the cases being studied as free from confound and bias as much as possible. The chosen cases had come only for the assessment of an ADHD diagnosis. Presenting symptoms included persistent inattention and/or hyperactivity that interfered with their daily activity and academic functioning and development. Because of the above mentioned symptoms, the subjects also reported experiencing adjustment and relational problems at school and at home.

Psychological assessments included clinical interview, intelligence testing, personality assessment batteries and task-oriented computerized assessments. Addition-

ally parent and teacher report questionnaires were also reviewed to gather more information.

An additional add on observation of this review turned out be to analyze the validity and uniformity of Diagnosis of ADHD, or lack thereof in the current literature; as the results in our review indicated only one third of referrals received a valid ADHD diagnosis based on DSM Diagnostic Criteria. Adelman & Taylor (2010) point out that the increasing concern among professional and policy-makers about large numbers of false positive diagnoses resulting from indiscriminate use and classification practices. There are multiple reports cited of older students feigning symptoms of Learning Disability (LD) and ADHD to obtain special accommodations in the classroom and in academic testing situations (Harrison, Edwards, & Parker, 2007, 2008; Harrison & Rosenblum, 2010; Sullivan, May, & Galbally, 2007).

Observations of various clinicians at the clinic also confirmed authors concerns. It was pointed that some children as young as 10 years old, endorse and report symptoms to get stimulant medications. Being that these individuals were of such tender age and not yet fully cognitively or emotionally mature, we have been very cautious to avoid diagnostic labels such as Malingering. However reportedly, when these young individuals were questioned about the symptoms that they endorsed to request stimulant medications, they acknowledged that they had overheard that these medications cause weight loss or give (enjoyable) euphoric effects. It was also noted that some parents were of the belief that their child would benefit academically, if they were to be placed in a special education classes for lack of academic success, and they would want to regard their child's academic problems due to ADHD, rather than issues related to hard work, discipline or cognitive abilities. We also encountered multiple instances, where an

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ADHD diagnosis is sought in order not to face the more stigmatized truths of family systems problems or intellectual disabilities. To investigate this issue further we reviewed our cases to identify patterns of ADHD diagnosis clarification referrals.

### Literature Review

The ongoing debate on the over diagnosis of ADHD in the U.S. has been an interest of mental health research. Based on 2011-2012 National Survey of Children's Health of Centers for Disease Control, an estimate of 6.4 million children in the U.S. ages 4 to 17 had been diagnosed with ADHD at some point, a 53 percent increase over the past decade. Approximately two-thirds of those currently diagnosed have been prescribed drugs (Centers for Disease Control, 2013). According to Adelman & Taylor (2010), current estimates are that about 5% of school-aged children are diagnosed with ADHD and core symptoms being (1) not paying attention, (2) being highly active, and (3) acting impulsively when it is deemed inappropriate. Approximately 75% of those diagnosed are male. In the past, it has been estimated that less than half of those diagnosed will continue to show such symptoms as adults (McCann & Roy-Byrne, 2004) however, current postsecondary institutions are reporting a dramatic increase in students with recent ADHD diagnoses who are seeking special instructional and testing accommodations (Harrison & Rosenblum, 2010).

Some researchers pointed the role of diagnostic criteria differences in the significantly higher rates of ADHD in the U.S. relative to the other Western countries. For example, Singh (2008) cites studies indicating that a diagnosis of ADHD is 3-4 times more likely when criteria specified in the DSM -IV are used, as contrasted with criteria delineated in the ICD-10 (International Classification of Diseases -10) for diagnosing Hyperkinetic Disorder. Moreover, the fact that in the U.S. the majority of ADHD cases were diagnosed by general practitioners, including primary-care physicians, is recited among the reasons for over diagnosis (Leslie, 2002; Singh, 2008). The insurance system in the US were also pointed for this dilemma, as care used for symptom management is reimbursed by third party payors only if a current ICD-9 diagnosis is given. This fact forces the clinicians to give an ADHD diagnosis to sub-clinical cases.

Cox, Motheral, Henderson & Mager (2003) reported prevalence differs among states (e.g., ranging from 5 to 15% of school aged children). These differences have raised concern that in some communities whether these substantial over diagnosis were primarily due to ADHD look-a-like misbehavior, a simple immaturity, or a self-regulation problem with different etiology that were misdiagnosed as ADHD. For example, a study by Elder (2010) suggests that nearly 1 million children in the U.S. may be misdiagnosed as ADHD because they are the youngest and most immature in their kindergarten class. Role of pharmaceutical companies, diet, and chemical exposure are also debated factors on the discussion of increased diagnosis of ADHD in the U.S. (Vallee, 2009). Concerns about ADHD overdiagnosis and misdiagnosis increases because most of these diagnoses lead to pre-

scribing medication. Reports also suggest that ADHD medication is being overprescribed (Volknow & Swanson, 2003; Zito, Safer, dos Reis, et al., 2000) and indicate that about two-thirds of the 4-17 year old diagnosed group were on medication.

Policy makers also seemed to be concerned with the role of schools play in promoting ADHD diagnoses and recommending parents to seek medication (Adelman & Taylor, 2010). It is a fact that most schools have inadequate resources to attend to the special needs of every individual child however the question is why schools or teachers are promoting the ADHD medication to the parents of hard to manage or underperforming children by pointing their short-term positive effects on academic performance. Both parent and schools should be aware that there is some advocacy for making these "cognitive enhancers" available to non-ADHD children as an aid in enhancing their attention and focus on school tasks without being aware of their potentially serious side effects of ADHD medications (i.e., the U.S. Food and Drug Administration warns about possible cardiovascular effects, growth suppression, and development of other psychiatric conditions; other social concerns).

On the other hand, there is a long standing controversy on whether or not ADHD is a purely biological disorder and a focus on why it is more prevalent in the US if it has solely biological roots (Vallee, 2009). We now know that there is complex etiology of ADHD and current research on etiology of ADHD has shifted its focus to the identification of specific genetic and environmental factors which increase susceptibility to ADHD (Willcutt et al., 2011). The question turned out to be, identifying the roles of biology and environment more clearly in the equilibrium of ADHD. In this debate two topics stands out in the recent literature namely; executive function and self-regulation problems.

Executive functioning is an umbrella term that is defined as neuropsychological processes needed to sustain problem-solving toward a goal that involves the use of working memory, inhibitory control, and cognitive flexibility. Self-regulation refers to the capacity to control one's impulses and behaviors intentionally towards achieving a desired goal.

Barkley (1997, 2006), argues executive function and self-regulation are not casually related but they are essentially the same thing. He argues that self-awareness, self-motivation, self-instruction, self-inhibition, or self-directed action are really just another name for executive function components of working memory, cognitive flexibility, and inhibitory control. According to Barkley (1997), ADHD posits problems to sustained attention, persistence towards goals, resisting distractions, and inhibiting actions, words, thoughts, and emotions are direct correlates of self-regulation and executive functioning problems. He further asserts that ADHD is a disorder of self-regulation and self-regulation requires that a person have intact executive functions. The executive functions are specific types of self-regulation or self-directed actions that people use to manage themselves effectively in order to sustain their actions and (problem-solving) toward their goals and the future.

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Table 1: Diagnostic Distribution of Total Referrals

Total Referrals	60	
ADHD Diagnosis	15	25.0%
Learning Disability	3	5.0%
Borderline Intellectual Funct. (70>IQ<85)	7	11.7%
Intellectual Disability (IQ<70)	3	5.0%
Parent-Child Relational Problems	16	26.7%
Mood Disorder	23	38.3%
Anxiety Disorders	10	16.7%
Behavior Disorders incl. ODD & Conduct	17	28.3%
Personality Disorder or Features	13	21.7%
Other	11	18.3%

Note: Most of the participants have multiple diagnoses

and despite having all the symptoms of "Clinical ADHD", they tested positive for diagnosis of mood, anxiety or other disorder indicating Emotional Dysregulation, instead. Table 1 summarizes the total of 60 cases that have been reviewed in the 2 year research period. The most prominent diagnosis category was Mood Disorders, which included Depressive and Bipolar disorders per the DSM criteria, followed by Behavioral Disorders, which included Impulse Control, Oppositional Defiant Disorder (ODD) and Conduct Disorder. Parent-Child Relationship Problems as identified as a V-code in DSM followed as third frequent diagnosis among total referrals.

Barkley (2006) argued that children with ADHD tend to have stressful and conflict prone interactions with their parents, which makes it difficult for them to establish and maintain strong parent-child attachments. Pianta (1997) pointed that this fact of failure to establish strong attachments with caregivers may contribute to self-regulation deficits. This information highlights reported high comorbidity between ADHD and internalizing disorders and ADHD with ODD/CD. The European ADORE (Attention-deficit/hyperactivity Disorder Observational Research in Europe) study clinically referred oppositional defiant disorder (ODD) (67%), and conduct disorder (CD) (46%) as the most common psychiatric comorbidities for ADHD (Steinhausen, Novik 2006).

The emphasis given to the research on comorbid disorders with ADHD may reflect the role of emotional-regulation in child's clinical profile currently reflected as an ADHD with an additional affective or behavioral diagnosis. Along with these studies Barkley's work reflects that we cannot separate ADHD from emotional dysregulation and view ADHD only as an executive functioning deficit. This makes us wonder whether we are truly aware of ADHD and all its sub-types. Or more specifically, if we have identified all the various types of ADHD. Despite advancement via of significant research, ADHD is still full of mysteries. Researchers like us, may still find themselves having more questions than answers even when confronted with a small set of data like our study.

## Results

Our study shows that a significant percentage of assessment requests were for the diagnostic confirmation of ADHD (68.3%) for the age group of 6 to 17. However, of these individuals who were assessed for ADHD, many (38.3%) did not meet the DSM criteria of ADHD,

Table 2 shows the distribution of diagnoses for those who came to clinic to specifically identify whether their child meet the criteria of ADHD. A significant percentage of total referrals were referral for ADHD diagnostic clarification (68.3%). Only one third of these referrals received a diagnosis of ADHD based on DSM diagnostic criteria. Parent-Child Relational Problems were the most prominent single diagnosis among those who came with an ADHD suspicion (34.1%). Mood, Anxiety and Depressive Disorders (based on DSM) together constituted almost half of the diagnosis (46.3%). Other Behavior Disorders had almost one fourth of the weight among all diagnosis. It is important to note that, 17.1% of the children who were suspected to have ADHD had lower than average IQ levels.

It is important to mention that most of the participants have multiple provisional diagnoses and Table 3 summarizes comorbidity with ADHD. Results show that 40% of ADHD cases have either Parent-Child Relational problems or Behavior Disorders, or both.

These results are consistent with existing research that has proposed higher comorbidities between ODD and ADHD.

## Discussion

For the past numerous years, the overwhelming majority of people whose lives are affected by ADHD (parents, patients, teachers and providers); all have come to identify ADHD with medications such as Stimulants or non-Stimulants affecting the neuro-transmitter pathways, e.g. Dopaminergic or Nor-Adrenergic. By formulating a simplified view of ADHD, as being only of Hyperactive/Impulsive or Inattentive types, a sizeable number of patients (upto 30-40%) who have neither of the above mentioned sub-types confirmed by standardized testing, may be slipping through the cracks, and not be able to avail the resources present for patient of ADHD, and consequently perhaps are getting sub-optimal care by

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being labelled as having an Emotional or Behavioral Disturbance; or somethings else. Perhaps being open minded about the sub-types of ADHD, and including the Emotional Dysregulation type may be the missing link in not only our understanding of the complete psychopathology of, but also in compassionate care for patient who truly suffer from ADHD and its sequelae. By acknowledging the Emotional Dysregulation sub-type of ADHD, we are also looking at perhaps changing the practice parameters for treatment of ADHD and its sub-types.

This review shows that even though two-thirds of total referrals inquired about ADHD, however only one-third of

these inquiries received an ADHD diagnosis based on DSM-IV-TR criteria. The results indicate that large portion of parents and care givers are confused about addressing mood and behavioral (emotional dysregulation) problems within an ADHD diagnosis. It is also noted that there is a large relational component either preceding or following the reported onset of problems of these individuals. These results confirm a clear confusion on the part of parents on what ADHD is. Our literature review also shows that, the mental health community, its researcher and clinicians, as well as teachers have no clear answers about this specific subject.

As clinicians in the USA and also many other parts of the world, we base and match our diagnosis to the current taxonomies of the DSM. These diagnostic manuals offer choices only among categorical labels that cater to measurable dysfunctions in established categories, and for the most part especially in the case of ADHD, have not been able to offer a solution to the repeated observation that numerous patient with "Clinical ADHD Syndrome" also have an Emotional Dysregulation Sub-Type.

It is then natural to look at the diagnostic code source (DSM) to get guidance in identifying the various sub-types and clarifying the confusion. It very heartening to note that DSM-5 now has more lenient criteria such as being more inclusive by changing age cut-offs, as well as other issues such as lack of clinically significant impairment requirement, and inclusion of comorbidity with Autistic Disorders. This broader definition predisposes American clinicians to diagnose a larger percentage of children with ADHD. However it is still leaving outside the box, a substantial subset of patients with the sub-type of ADHD which predominantly present with Emotional Dysregulation leading to the constellation of ADHD symptoms.

When we look at the Inhibition Deficits of ADHD, we see

Table 2: Diagnostic Distribution of ADHD Referrals

Referral for ADHD	41	
ADHD Diagnosis	13	31.7%
Learning Disability	2	4.9%
Borderline Intellectual Funct. (70>IQ<85)	4	9.8%
Intellectual Disability (IQ<70)	3	7.3%
Parent-Child Relational Problems	14	34.1%
Mood Disorder	13	31.7%
Anxiety Disorders	6	14.6%
Behavior Disorders incl. ODD & Conduct	10	24.4%
Personality Disorder or Features	8	19.5%
Other	2	4.9%

Note: Most of the participants have multiple diagnoses.

that part of the problem may also be the emotional inhibition. These individuals have impaired inhibition of inappropriate behavior related to strong emotions, low frustration tolerance, they are impatient, quick to anger, hot tempered, easily annoyed, and have greater emotional excitability and reactivity. It is no wonder that in our analysis, 34% of the attention problems showed a clear configuration of parent-child relational problem, which is coded as a V-Code in the DSM. We believe even this attempt at clarifying the classification only partially reflects the interaction between their attention problems and the nature of developmental and environmental maladjustments that they experience in growing up and its consequent emotional dysregulation manifestation.

Since they are deficient in effortful, cognitive "top-down" regulation of induced emotions, they have difficulties self-regulating emotional reactions and have hard time in self-soothing, and hence refocusing attention. Such difficulties in inducing positive, more acceptable mood states make it more difficult to differentiate between the mood problems from ADHD symptoms. Emotional dysregulation problems not only explain the confusion in parents regarding relational and mood problems with ADHD but also explains the high comorbidity with behavior problems. Once again our study concurs with contemporary research indicating high comorbidity between ADHD and Oppositional Defiant Disorder (ODD).

According to Angold, A. Costello, J., Erkanli (1999), ADHD cases have 11 times greater risk for ODD and may develop it within 2 years of ADHD onset, furthermore it has also been reported that the genetic contributions to ODD and Conduct Disorder (CD) are shared with (same genes as) that of ADHD (Tuvblad, 2009). This makes us wonder whether we are looking at not just comorbidity but a sub-type variant of ADHD with Emotional Dysregulation diagnosis. The emotional impulsiveness of ODD is shared with ADHD and on top of

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Table 3: Comorbid Diagnosis in ADHD Cases\*

Comorbidity in ADHD		
Borderline Intellectual Funct. (70>IQ<85)	2	13.3%
Parent-Child Relational Problems	6	40.0%
Mood Disorders	4	26.7%
Anxiety Disorders	1	6.7%
Behavior Disorders incl. ODD & Conduct	6	40.0%
Personality Disorder or Features	2	13.3%

\*Total of 15 ADHD diagnosis

will not only be cost effective but may also improve the quality of life of these individuals and decrease the stigma associated with a "willful behavioral dysfunction syndrome". Horwitz (2002) proposes a more nuanced conceptualization of mental disorders, in which biological contribution is considered less salient in conditions such as ADHD, than the most severe disorders like Schizophrenia. In these disorders Horwitz et al (2002) points out the need for the understanding the role of cultural constructions as well as its biological reality

that ODD has defying, annoying, arguing, and blaming social components. That itself implies biological component of emotional impulsiveness is compounded with learned behavior from the environment in the ODD and ODD comorbid with ADHD. Emotional dysregulation component predicts later depression and anxiety disorders and social conflict component predicts later Conduct Disorder (Barkley, 2006). We also know that the role of early environment and parental emotional dysregulation on child's emotion regulation (Han & Shaffer, 2013). As executive functioning of a child develops hierarchical levels; mastering sequential behavior on top of environmental influence added on to the genetic structure of the children, warrants for multi-pronged approach to treatment for those children with ADHD and Emotional Dysregulation.

The authors strongly urge clinicians and thought leaders to pay particular attention in the interlocking biology and environmental influences in identifying ADHD symptoms and sub-types. It appears that parental confusion detected in our case study was not an anomaly for the fact that ADHD has an emotional dysregulation component as well as some pure environmentally caused emotional dysregulation in children appear like ADHD. It is also important to recognize and then discern, that emotional impulsivity and deficient emotional self-regulation is central to ADHD, and also that ADHD look-a-like symptoms apparently can be a result of reactions to environmental influences. This differentiation may help clinicians identifying the disorder.

## Conclusion

It is the conclusion of the authors that unless we make Emotional Dysregulation a sub-type of the ADHD diagnosis at par with Hyperactive/Impulsive Type and Inattentive Type, confusion about the true nature of ADHD will continue. Not fully recognizing and addressing the Emotional Dysregulation Type of ADHD, will continue to lead to increasing medication consumption with the hope that all symptoms will come under control with medications alone. However understanding psychosocial aspects of the Emotional Dysregulation Problem would help further our understanding of diagnosing and treating ADHD. Treating ADHD; Emotional Dysregulation Type, with behavioral and supportive interventions

Emotional dysregulation is a predictor of social rejection and academic problems as well as cause of immense parenting stress and family conflict. It also predicts anger and can also be related to adult issues, such as, road rage, speeding, job dismissals, workplace behavior problems, relational or marital dissatisfaction. Emotional dysregulation can then in turn be a catalyst for disorders like depression, anxiety, suicidality, learning disorders, and personality disorders.

APA Practice Guidelines (Parameters) discuss in detail ADHD related emotional impulsivity and emotional dysregulation problems improved with ADHD medications; and the secondary consequences of ADHD related self-regulatory problems or ADHD look-a-like emotional dysregulation problems addressed by behavioral interventions. However the drawback that we are observing is that since Emotional Dysregulation is not currently an integral part of the ADHD spectrum, the APA Practice Parameter Guidelines mainly focus on the treatment and management of the core symptoms of ADHD, and then leaving residual Emotional Dysregulation to be dealt with as the clinical need is deemed fit.

The authors propose that at the first point of contact with a patient suspected of ADHD, after confirmation of the Diagnosis of ADHD, and its sub-type i.e. either Hyperactive/Impulsive Type; Inattentive Type; Emotional Dysregulative Type; or Combined Type; a robust treatment regime should be instituted with Medications, Family and Individual Support, Educational/Vocational Support and accommodation as well as a modular therapy approach for Emotional Dysregulation Management be instituted.

## References:

- Adelman, H.S., & Taylor, L. (2010). *Mental health in schools: Engaging learners, preventing problems, and improving schools*. Thousand Oaks, CA: Corwin Press.
- APA Press; Practice Parameters Guidelines for Treatment of ADHD (2016).
- APA Press; DSM-IV-TR (2000).
- APA-Press: DSM-5 (2013).
- Angold, A. Costello, J., Erkanli, A. (1999). Comorbidity. *Journal of Child Psychology and Psychi-*

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- atry, 40, 57-88.
- Barkley R.A. (2006) *Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment*. 3rd Ed. New York: Guilford
- Barkley, R. A. (1997). Behavioral inhibition, sustained attention, and executive functions: Constructing a unifying theory of ADHD. *Psychological Bulletin*, 121, 65–94.
- Centers for Disease Control (2013). *2011-2012 National survey of children's health*. Retrieved from <http://www.cdc.gov/nchs/slraits/nsch.htm> on January 20th, 2015.
- Conrad, P. (1992). Medicalization and social control. *Annual Review of Sociology*; 18: 209- 232.
- Cox, E. R., Brenda R. M., Rochelle R. H. & Doug M. (2003). Geographic variation in the prevalence of stimulant medication use among children 5 to 14 years old: Results from a commercially insured US sample. *Pediatrics*; 111(2): 237-243.
- Elder, T. (2010). The importance of relative standards in ADHD diagnoses: evidence based on a child's date of birth, *Journal of Health Economics*.; 29, 641-656.
- Han Z. R., & Shafer, A. (2013). The relation of parental emotion dysregulation to children psychopathology symptoms: The moderation role of child emotion dysregulation. *Child Psychiatry Hum Dev*. 44; 591-601.
- Harrison, A.G. & Rosenblum, Y. (2010). ADHD documentation for students requesting accommodations at the postsecondary level. *Canadian Family Physician*, 56, 761-765.
- Horwitz, A. (2002). *Creating Mental Illness*. Chicago: University of Chicago Press.
- Leslie, L.K. (2002). The Role of Primary Care Physicians in Attention Deficit Hyperactivity Disorder (ADHD). *Pediatr Ann*. 31(8): 475–484.
- Laurel K. L. (2002). The Role of Primary Care Physicians in Attention Deficit Hyperactivity Disorder (ADHD). *Pediatr Ann*.; 31(8): 475–484.
- McCann, B.S. & Roy-Byrne, P. (2004). Screening and diagnostic utility of self-report attention deficit hyperactivity disorder scales in adults. *Compr Psychiatry*.; 45(3):175-83
- Pianta RC. Adult-child relationship processes and early schooling. *Early Education and Development*. 1997; 8:11–26.
- Singh, I. (2008). ADHD, culture and education, *Early Child Development and Care*, 178:4, 347-361
- Steinhausen HC, Novik TS (2006). *European Child Adolescent Psychiatry* 15 (Suppl 1): 125-129
- Tuvblad, C. et al. (2009). A common genetic factor explains the covariation among ADHD ODD and CD symptoms in 9–10 year old boys and girls. *Journal of Abnormal Child Psychology*, 37, 153-167
- Hoffenaar, P. J. & Hoeksma, J. B. (2002). The structure of oppositionality: Response dispositions and situational aspects. *Journal of Child Psychology and psychiatry*, 43, 375-395.