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Why are girls with ADHD invisible?

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Attention Deficit/Hyperactivity Disorder (ADHD) is readily associated with boys, however, girls are also affected. It is argued that the impact of this perception in school-aged children is disadvantaging girls by either missing or misdiagnosing ADHD. The public perception that boys are the only ones with ADHD can partly be attributed to the way ADHD is periodically inaccurately portrayed in the media (Consensus Statement, 2002). In addition, although the behaviour problems associated with ADHD are the most well researched and reported of the childhood disorders (Barkley, 2003), the majority of this research has been on boys with a focus on the hyperactivity and impulsivity component (Lovecky, 2004; Wicks-Nelson & Israel, 1997). In comparison, there is scarce research about girls with ADHD (Biederman, et al., 1999; Gaub & Carlson, 1997; Hartung, et al., 2002). It seems that ADHD in girls often remains undetected and these girls are often invisible to many professionals, parents and society in general.

Definitions

There is now consensus among clinical professionals that ADHD is a legitimate disorder with deficits in behavioural inhibition and sustained attention (Consensus Statement, 2002). ADHD has been divided into three subtypes: ADHD inattentive subtype, previously referred to as ADD, exhibiting inattention and cognitive processing difficulties; ADHD combined subtype exhibiting some hyperactive, impulsive and inattentive behaviours; and ADHD hyperactive/impulsive subtype, exhibiting predominately hyperactive-impulsive behaviour (Barkley 2003; Cooper, 1999; Lovecky, 2004; Wodrich, 2000). The core symptoms of inattention, hyperactivity and impulsivity

can impede many aspects of an individual's life producing significant behavioural and cognitive difficulties (Cooper, 1999).

This paper explores why, more than a century after ADHD characteristics were first observed, primary school-aged girls exhibiting symptoms of ADHD are often not diagnosed. In fact, in both the academic literature and in the media it would seem that the information relates mainly to boys, with girls being hardly mentioned.

Prevalence

The prevalence of ADHD varies worldwide between 1-6% in school-aged children (Cooper & O'Regan, 2001). Prevalence rates differ between cultures but this may be attributed to cultural norms (Lovecky, 2004) and to the interpretation of symptoms provided by others (Barkley, 2003). Girls are however, less frequently diagnosed with ADHD than boys (Barkley, 2003; Wicks-Nelson & Israel, 1997), with boys four times as likely to be diagnosed than girls (Zentall, 2005). On the other hand, the gender ratio nearly becomes equal during the middle school years (Cooper & O'Regan, 2001; Lovecky, 2004; Solanto, 2004) which is when ADHD inattentive subtype is usually diagnosed and thus more girls are included (Lovecky, 2004; Quinn, 2004). Several factors may influence the prevalence of ADHD such as the nature of the population, diagnostic criteria, age, and gender composition of the sample (Barkley, 2003). The prevalence of school-aged children with ADHD broken down into their respective categories reveal ADHD hyperactive/Impulsive subtype at 55% is by far the most common, followed by ADHD inattentive subtype 27%; and lastly ADHD combined subtype at 18% (Zentall, 2005). There is also a distinct difference in the prevalence of gender rates between clinically-referred samples and community samples, ranging from 6:1 to 9:1 and 3:1 respectively (Gaub & Carlson, 1997).

History

More than a century ago, in 1902, George Still recorded the first observed ADHD behaviours in children (Barkley, 2003; Cherkes-Julkowski & Stolzenberg, 1997). During

the last century ADHD went through several name changes including: minimal brain damage; minimal brain dysfunction, hyperkinetic impulse disorder, hyperactive child syndrome, hyperkinetic reaction of childhood and in 1980 was renamed attention deficit disorder (ADD), which the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) divided ADD into two subtypes, ADD with and without hyperactivity. The nomenclature of Attention Deficit/Hyperactive Disorder first appeared in 1987 in DSM-III-R as a single category but ADD without hyperactivity was listed separately as undifferentiated Attention-Deficit Disorder. Before the end of the 80's DSM-IV further divided ADHD into three major subtypes: *inattention*, *hyperactive-impulsive* and *combined*. Currently, all three subtypes are included and are diagnosed under the DSM-IV-TR criteria. However, it has been proposed that, subtypes ADHD combined subtype and ADHD inattentive subtype may be considered as two separate childhood psychiatric disorders (Barkley, 2003). This is because Barkley's biologically based theory on ADHD as disinhibition does not account for ADHD inattentive subtype, whereas, in the theory proposed by Brown, ADHD as attention dysfunction accommodates ADHD combined subtype and ADHD inattentive subtype, although ADHD-hyperactive/impulsive subtype less so (Lovecky, 2004). It could be that the history of ADHD is a possible contributing factor to the gender imbalance in the prevalence of ADHD. This is supported by the fact that during the twenty year period between 1960 till 1980 most of the research studies and media releases were about males because the focus was on hyperactivity, a core observable and measurable symptom of the disorder (Cherkes-Julkowski & Stolzenberg, 1997). This therefore, left girls and the inattention component of ADHD less explored and less exposed.

ADHD as a social construct

There is a great deal of controversy on whether or not ADHD is a social construct of our times. Changes in psychology & psychiatry, marketed merchandise, popular media, electronic age, politics and school system rules and routines (Cooper & O'Regan, 2001) have all been suggested as possible reasons for the emergence of the ADHD label. For instance, traditional style classrooms favour girls who appear more compliant, whereas

boys are found to be more disruptive and distracting. However, evidence is emerging that it isn't just a social construct, because of the growing links of neurological and genetic components with ADHD (Consensus Statement, 2002). Further, studies from numerous countries consistently indicate that the behaviour pattern of ADHD is worldwide, although the diagnostic label varies (Barkley, 2003) and is dependent on cultural norms (Lovecky, 2004).

Gender imbalance in other childhood disorders

Although boys are overrepresented in ADHD, this gender imbalance is found in other childhood disorders such as autism, language problems, learning disabilities (Wicks-Nelson & Israel, 1997) and emotional and behavioural disorders (Cooper, 1999). While boys are more often diagnosed with these disorders girls, who are diagnosed with childhood disorders often present with more severe symptoms (Gaub & Carlson, 1997).

Hyperactive-Impulsive behaviours in girls

Perhaps part of the problem is the difficulty of recognizing girls with hyperactivity. Hyperactive-impulsive behaviour problems arise earlier than problems associated with inattention in children diagnosed with ADHD (Barkley, 2003). ADHD hyperactive/impulsive subtype is more easily recognized than the inattentive subtype because of the observable excessive motor symptoms. However, there are differences in how girls and boys exhibit these symptoms. While in severe cases the behaviours in girls are similar to that of boys (Lovecky, 2004), some typical hyperactive-impulsive behaviours in girls are excessive talking, being silly, tomboyish behaviours and displaying emotional reactivity (Lovecky, 2004; Quinn, 2005). Teachers may perceive these behaviours as negative or immature rather than oppositional in girls (Lovecky, 2004). In addition, adults appear to be more tolerant of girls' hyperactive behaviour than of boys' hyperactive behaviour (Wicks-Nelson & Israel, 1997). It is possible that the lack of knowledge about hyperactive behaviour in females as well as adult attitudes may contribute to the under identification of girls with ADHD.

The specific component of impulsivity refers to the inability to delay satisfaction (Wicks-Nelson & Israel, 1997) or the inability to control impulses accurately (Wodrich, 2000). Impulsivity is always found in conjunction with hyperactivity, hence the term hyperactive-impulsive behaviour. Children with ADHD hyperactive-impulsive subtype are often identified in preschool while children with ADHD combined subtype are often identified in school. This has led some researchers to postulate that it may be that different ADHD behaviours are associated with a stage of development rather than that there are two subtypes (Barkley, 2003).

Inattentive behaviours

Inattentive behaviours are less easily identified and are additionally associated with many other disabilities (Zentall, 2005). ADHD attention deficits include; selective attention, sustained attention and memory retrieval (Barkley, 2003) suggesting an inefficient use of executive functions in the frontal and prefrontal regions of the brain (Lovecky, 2004). However, problems with higher level cognitive processing have also been proposed, rather than attention deficits (Wicks-Nelson & Israel, 1997). A child with ADHD inattentive subtype becomes more obvious when sustained attention is required. The natural progression through school, with tasks escalating in complexity and sophistication, will consequently become increasingly difficult for the child with ADHD inattentive subtype. Also, these tasks will require more complex and efficient use of executive functions (Lovecky, 2004). Girls with ADHD are predominately diagnosed with the inattentive subtype (Lovecky, 2004; Wicks-Nelson & Israel, 1997) and as stated previously, usually during the middle school years. Therefore, it is reasonable to conclude that developmental stages may partly account for the later diagnosis of girls with ADHD. These girls tend to exhibit higher levels of inattentive symptoms such as; forgetfulness, disorganization, low self-esteem, anxiety and demoralization (Quinn, 2005) in contrast to the higher levels of disruptive behaviours typically seen amongst males.

Both boys and girls with ADHD hyperactive/impulsive subtype and ADHD combined subtype are described as noisy, disruptive, messy, irresponsible and immature children. Children with ADHD inattentive type are described as shy, day dreamy, hypoactive, passive, apathetic, lethargic, confused, withdrawn and sluggish. Thus girls showing these symptoms could be missed or misdiagnosed.

Internalizing/externalizing behaviours

Girls may also remain undiagnosed because internalizing behaviours are less apparent than externalizing behaviours. ADHD is recognized as a disorder commonly associated with externalizing behaviours such as aggression and disruptive behaviours typically seen amongst males, which is consistent with ADHD combined subtype symptoms (Lovecky, 2004). These externalizing behaviours often overshadow less overt internalizing behaviours such as inattention, self blame, anxiety, depression, social withdrawal and psychosomatic symptoms which are predominately found in girls (Lovecky, 2004). Consequently, the externalizing behaviours occurring with the ADHD combined subtype and the ADHD hyperactive/impulsive subtype which are disruptive and distracting could be more readily identified, while girls with ADHD inattentive type may experience a delayed diagnosis or remain undetected. A study conducted by Abikoff et al. (2002) found that gender differences existed in the symptoms of ADHD with girls exhibiting less externalizing and rule-breaking behaviours. However, Hartung et al. (2002) found no gender differences in young children with ADHD in respect to the internalizing symptoms. One possible explanation for this difference may be the younger age of the sample group. However, it is also possible that girls with ADHD inattentive type are being misdiagnosed with an internalizing disorder rather than ADHD (Biederman et al, 1999).

Referrals problematic for girls

Boys are more often referred to clinics for ADHD diagnosis, even though there is a more even gender prevalence in community samples (Biederman et al., 1999). One explanation

is that as girls present with more inattention than behavioural difficulties that schools tend not to refer these girls (Gaub & Carlson, 1997). Obviously teachers play an important role in providing information about a child's behaviour. However, while teacher input is important, over reliance on it is cause for concern (Jackson & King, 2004) as teachers' reports are known to differ to parents' reports (Barkley, 2003). Teacher perception, in fact, may contribute to gender bias by only referring those children exhibiting hyperactive behaviour which is disruptive and distractive. The notion that the inattention subtype of ADHD is a milder condition is a myth as it can be just as severe and incapacitating (Kewley, 1999). When girls are referred for diagnosis it was found they were as equally impaired by the ADHD as boys (Biederman et al., 1999; Gaub & Carlson, 1997). Thus, children with ADHD inattentive subtype have a lower likelihood or at the very least, a delayed likelihood of being referred than those with ADHD hyperactive/impulsive subtype or ADHD combined subtype (Solanto, 2004).

The wording of diagnostic criteria for ADHD is another area of concern in the literature. Ohan and Johnston (2005) explored gender appropriateness of symptom criteria for ADHD, ODD and CD, and found that current statements in DSM-IV used male orientated descriptors and that female sensitive statements may be connected to other conditions not specifically to ADHD. These findings suggest another possible reason for the under identification of girls with ADHD.

Conclusion

It is important that girls are correctly diagnosed in a timely manner. Since girls with ADHD are predominately found in the inattentive subtype it is reasonable to conclude that delay in diagnosis of girls with ADHD may be attributed to the later onset of the disorder due to different developmental stages in ADHD. However, gender specific hyperactivity behaviours, less overt internalizing behaviours, gender bias in teacher ratings and male orientated criteria statements are all possible explanations contributing to the discrepancy in the gender ratio of ADHD and perhaps an explanation to why many girls with ADHD seem to be "invisible".

References

- Abikoff, H., Jensen, P., Arnold, L., Hoza, B., Hechtman, L., Pollack, S., Martin, D., et al.. (2002). Observed classroom behavior of children with ADHD: Relationship to gender and comorbidity. *Journal of Abnormal Child Psychology*, 30, 349-359.
- Biederman, J., Faraone, S., Mick, E., Williamson, S., Wilens, T., Spencer, T. & Weber, W. (1999). Clinical correlations of ADHD in females: Findings from a large group of girls ascertained from pediatric and psychiatric referral sources. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 966-977.
- Barkley, R. (2003). Attention deficit/hyperactivity disorder. In E. Mash & R. Barkley (Eds.), *Child psychopathology* (pp. 75-143). New York: Guilford Press.
- Consensus Statement. (2002). International consensus statement on ADHD. *Clinical Child and Family Psychology Review*, 5 (2), 89-111.
- Cherkes-Julkowski, M., & Stolzenberg, J. (1997). *Rethinking attention deficit disorders*. Massachusetts: Brookline Books, Inc.
- Cooper, P. (1999). Making sense of ADHD. In P. Cooper & K. Bilton (Eds.), *ADHD: Research, practice and opinion*. London: Whurr Publishers Ltd.
- Cooper, P., & O'Regan, F. (2001). *Educating children with AD/HD: A teacher's manual*. London: Routledge Palmer.
- Gaub, M., & Carlson, C. (1997). Gender differences in ADHD: A meta-analysis and critical review. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 1036-1047.
- Hartung, C., Willcutt, E., Lahey, B., Pelham, W., Loney, J., Stein, M., & Keenan, K. (2002). Sex differences in young children who meet criteria for attention deficit

- hyperactivity disorder. *Journal of Clinical Child and Adolescent Psychology*, 31, 453-464.
- Kewley, G. (1999). The role of medication in a multi-modal approach to the management of ADHD. In P.Cooper & K. Bilton (Eds.), *ADHD: Research, practice and opinion*. London: Whurr Publishers Ltd.
- Lovecky, D. (2004). *Different minds: Gifted children with AD/HD, asperger syndrome, and other learning deficits*. Philadelphia: Jessica Kingsley Publishers.
- Ohan, J. L., & Johnston, C. (2005) Gender appropriateness of symptom criteria for attention-deficit/hyperactivity disorder, oppositional-defiant disorder, and conduct disorder. *Child Psychiatry and Human Development*, 35, 359-381.
- Quinn, P. (2005). Treating adolescent girls and women with ADHD: Gender-specific issues. *Journal of Clinical Psychology*, 61, 579-587.
- Solanto M. (2004). The 'quiet' form of ADHD: The inattentive subtype poses different challenges. *Behavioural Health Management*, 23(4), 38-40.
- Wodrich, D. (2000). *Attention-deficit/hyperactivity disorder: What every parent wants to know (2nd ed)*. Maryland: Paul H. Brookes Publishing Co.
- Wicks-Nelson, R., & Israel, A. (1997). *Behaviour disorders of childhood (3rd ed.)*. New Jersey: Prentice-Hall.
- Zentall, S. (2005). *ADHD and education: Foundations, characteristics, methods, and collaboration*. New Jersey: Pearson Education.