Three Predictors of ADHD – Birth Month, Country, Gender

ADHD is a fairly recent phenomenon, a condition that didn't exist prior to 1980. Since then ADHD has become a household word and one of the most searched terms on the Internet, more than *sex* and *death.* With all the media coverage and controversy surrounding the disorder, it's easy to think ADHD is a global epidemic that affects all children equally. However, that's not the full story.

Three factors in particular will significantly increase the chances of a child being diagnosed with ADHD: the month they were born, the country they live in, and their gender.

For example, an American boy born in the month of November is 25 times more likely to be diagnosed with ADHD compared to a French girl born in January. American children as a whole are 60 times more likely to be medicated for ADHD than children in Finland.[1]

These numbers are significant because they help unravel the mystery surrounding the explosion in ADHD over the past 10-15 years, and point to some of the contributing factors in the misdiagnosis or overdiagnosis that is being seen around the world. Let's examine each factor a little more closely, starting with birth month.

There have been a number of studies done on the age of children within any given class or grade. According to one study done at the University of British Columbia in Canada, researchers found that the youngest children in the class, those born in December, were 39% more likely to be diagnosed with ADHD compared to their classmates born in January.[2] In a similar study done in Spain, the younger children in each class were 2.5 to 3 times more likely to be diagnosed.[3] Similar studies have been conducted in a number of countries (Iceland, Sweden, England, USA, Holland, Taiwan) and the findings are all similar.

William Evans, a professor of economic statistics at the University of Notre Dame, who also published a paper on the subject in the *Journal of Health Economics* in 2010,[4] was one of the first to call out the epidemic of overdiagnosis in the United States. He discovered that the *biggest predictor* for the diagnosis of ADHD was the ***age of the child with respect to their grade,*** stating "younger children are inappropriately diagnosed as having ADHD when they are in fact simply less mature than their peers." To put the numbers in perspective, Evans and his team concluded that in 2006 "approximately 1.1 million children received an inappropriate diagnosis [of ADHD] and over 800,000 received stimulant medication due only to relative [im]maturity."

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The second factor that increases the likelihood of your child being diagnosed with ADHD is the country they live in.

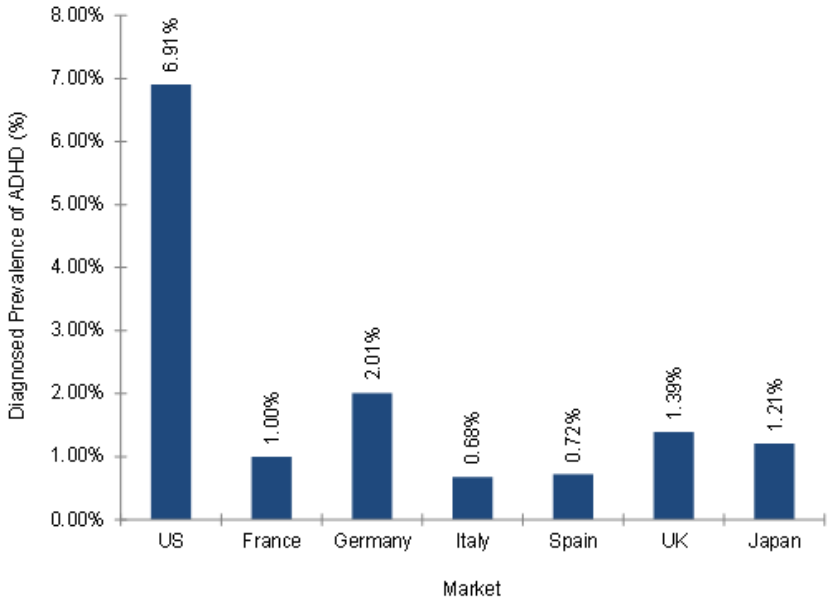
Researchers tend to agree that the prevalence rates for ADHD amongst children are similar around the world, with estimates ranging between 3-6% of any given population.[5] However in certain countries or continents the prevalence rate is much higher (Africa 8.5%, South America 11.8%) whereas in other countries the rate is much lower (Spain 1.2%, Mexico 1.9%).[6]

The United States is particularly unique in that you see huge variation across the country, from state to state, with a low of 5.6 percent in Nevada to a high of 18.7 percent in Kentucky.[7] The obvious question is,

why the difference? Are children in Nevada really so different from those in Kentucky? And why are children in Spain ten times *less likely* to be diagnosed compared to South American children?

The answer to these questions lies in the manner in which children are being diagnosed, and specifically the criteria being used to label a child "ADHD." Since there is no definitive test for ADHD, the whole process of assessing a child tends to be highly subjective with different criteria being used in different countries. In Europe for instance, most psychiatrists and counsellors prefer to follow the World Health Organization's *ICD-10* (International Classification of Diseases 10) for diagnosing ADHD (what they term *hyperkinesis*) instead of the DSM-5 (Diagnostic Statistics Manual 5) which is used throughout the United States. The ICD-10 criteria for hyperkinesis are narrower than the criteria for ADHD in the DSM-5, and as a result fewer children qualify for the diagnosis. The diagnostic process also differs significantly from country to country. In Italy the diagnosis must be made by a paediatric specialist, whereas in the United States even a nurse-practitioner can diagnose ADHD and prescribe stimulant medication.[8]

Table 1: Global Prevalence of ADHD (2014)



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The third major factor contributing to an ADHD diagnosis is gender, with boys being diagnosed three times more often than girls.

The stereotype of someone with ADHD is a hyperactive, fidgety boy. Girls on the other hand aren't usually hyperactive. Instead they tend to have the attention-deficit part of the disorder, and because their symptoms tend to be more subtle, often they go unnoticed.

Boys with ADHD tend to be easier to identify, as their boundless energy or natural mischievousness often disrupt classroom activities. Sadly, as a society, we seem to have less and less patience for boyish traits such as curiosity, spontaneity, engaging in rough-and-tumble play, being wild or adventurous, seeking thrills or attention, or simply behaving like Huck Finn or Denice the Menace. Instead we expect our boys to sit still for hours on end, confined to a chair, listening to lectures. And if a boy behaves, well, too boyishly, or shows boredom, he quickly finds himself under the watchful eye of his teacher, parent or school counsellor… all ready to label his behaviours as "impulsive," "fidgety," "disruptive"

or “inattentive.” Before long, he’s being advised to seek *professional advice* from a medical doctor. Depending on the doctor, but more often than not, a hasty diagnosis will be made based on testimonials from teachers and parents, in collaboration with a short *checklist* of symptoms.

Pulitzer Prize-winning *New York Times* journalist Natalie Anger, suggests that the surge in ADHD may be due to the fact that “we no longer accept traditionally boyish behaviour as normal.”

This may not explain the ADHD epidemic in its entirety, however it’s safe to say decades ago children spent far more time playing out in nature, using their bodies and burning off excess energy. In today’s highly competitive world, schools are reducing PE lessons and recess time to make way for the *all important* academic subjects. This is a trend that will no doubt continue as schools aim to build their reputations on academic achievement and scholarly success.

In the meantime, let us not forget “boys will be boys” and they are hardwired for thrills and adventure. They can be spontaneous and unpredictable, sometimes a little immature (especially when compared to their female classmates), and of course fidgety and feisty.

Instead of immediately labelling them as “ADHD” and then medicating them so they “behave properly” and “focus” in class, maybe we should pause to look at the bigger picture.

If we do that, we may start to see a reduction in the number of boys being misdiagnosed.

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Notes

1 Wedge, Marilyn. *A Disease Called Childhood.* New York: Penguin, 2015.

2 Morrow, R. L., Garland, E. J., Wright, J. M., Maclure, M., Taylor, S., & Dormuth, C. R. (2012). Influence of relative age on diagnosis and treatment of attention-deficit/hyperactivity disorder in children. *Canadian Medical Association Journal*, *184*(7), 755–762.

3 Librero, J., Izquierdo-María, R., García-Gil, M., Peiró, S., (2015). Children's relative age in class and medication for attention-deficit/hyperactivity disorder. *Medicina Clínica* (English Edition), 145/11, 471-476.

4 Evans, W.N., Morrill, M.S., & Parente, S.T. (2010). Measuring inappropriate medical diagnosis and treatment in survey data: The case of ADHD among school-age children. *Journal of Health Economics.* 29(5):657-73.

5 Faraone, S., Sergeant, J., Gillberg, C., & Biederman, J. (2003). The worldwide prevalence of ADHD: is it an American condition? *World Psychiatry*, *2*(2), 104–113.

6 “Attention-Deficit/Hyperactivity Disorder, Data & Statistics” (2016) – Centre for Disease Control. Retrieved from https://www.cdc.gov/ncbddd/adhd/state-data-hub.html

7 Conrad, P., Bergey, M., (2014). The impending globalization of ADHD: notes on the expansion and growth of a medicalized disorder. *Social Science and Medicine, 122*, 31-43.

8 Wedge, Marilyn. *A Disease Called Childhood.* New York: Penguin, 2015.