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Attention Deficit Hyperactivity Disorder: A Reflection of Increased Medicalization in America?

Brooke Schaeffer
Lehigh University
BIOS 297, Professor Fink
Title: ADHD: A Reflection of Increased Medicalization in America?

Abstract:
Medicalization in the United States has created more consistent classification and treatment guidelines for disorders and diseases nation-wide. However, the concept may foster a tendency toward premature diagnosis. The same can be said about pharmaceuticalization and quickness to medicate. Drug innovation and administration can be integral to quality of life, but how does this relationship shift when health becomes a commodity? How can the business end of medicine and pharmacy conflict with ethical responsibilities to patients? Here I utilize the increase in American Attention Deficit Hyperactivity Disorder diagnoses and psychostimulant prescriptions to illustrate potential repercussions of an increasingly medicalized and pharmaceuticalized society. I argue that the premature prescription of medication in response to rising ADHD diagnoses is an unethical course of treatment, thereby impeding the identification of the true causes underlying the symptoms and exposing the patient to unnecessary drug risks and side effects as a reflection of commercialized health.

Introduction

Over the past few decades, the number of Attention Deficit Hyperactivity Disorder (ADHD) diagnoses in America has increased significantly. Following this trend is an increase in the medicalization of behavioral variation in children; but is this an acceptable reason to medicate? Medicalization is the process by which human conditions become defined and treated as medical issues (Maturo, 2012). Reliance on medication for clinical treatment reflects the tremendous growth of the pharmaceutical industry. Pharmacological interventions mitigate conditions that were once treated with therapy alone, and have fostered an increased reliance on
medication. This is a result of pharmaceuticalization, which is the process of pharmacologically intervening in human conditions (Williams, 2011). The DEA reported a 40% increase in the number of prescription stimulants distributed for ADHD in America between 2007 and 2011 alone (Lautieri, 2019). It is imperative to identify whether this medicational surge is due to physiological cases, the changing social definition of ADHD and what it means to be “abnormal,” or the desire for a quick fix to more serious underlying issues. The purposes of this paper are to: 1) examine the cause behind increased number of ADHD psychostimulant prescriptions in the United States; and 2) determine if and when psychostimulants are warranted.

**Definitions of ADHD Over Time**

In a 1940s study, the most common teachers’ complaints about their students were chewing gum, running in the halls, and talking out of turn (Franklin, 2016). Today, complaints have shifted toward class disruptions, lack of motivation, and a general disinterest in learning. But is the classroom environment so different today? Or have these behaviors been present all along, but never recognized as undesirable?

Perhaps the answer lies in how we diagnose ADHD, and how it compares to the societal perception of “normal.” In the DSM-2 from 1968, there was no such thing as ADHD. Instead, there was “hyperkinetic disease” characterized by extreme fidgeting and inability to sit still in infants and young children, and encompassed everything from restlessness to severe autism (Lange, 2010). Not until the release of the DSM-3 in 1980 was the term Attention Deficit Disorder, or ADD, first introduced. This was described as recurrent problems with impulse control and attention, and included versions with and without hyperactivity. Finally, the term ADHD appeared in the DSM-4 in 1994, and again with more detail in the 2013 DSM-5.
However, even the slightest changes in phraseology have drastically different implications. A small semantic revision between the 1980 DSM-3 definition and the 1987 definition resulted in a 50% increase in child ADHD diagnoses (Moynihan, 2005). And while the DSM-4 required functional impairments to be “clinically significant” to be categorized as ADHD, the DSM-5 only requires that they “reduce the quality of social, academic or occupational functioning” (Epstein, 2013). The broadening parameters of ADHD classification over time factor into the increased diagnoses we see today. Once normal behaviors are now seen as symptoms of a disorder, and in many cases result in daily drug use to compensate.

**ADHD Drugs and their Mechanisms of Action**

Medications used to treat ADHD are categorized as psychostimulants, which excite the central nervous system and increase attention and alertness (Favrod-Coune, 2010). They are used to treat other conditions such as depression, narcolepsy, and epilepsy (Mohamed, 2012). The psychostimulants most commonly used to treat ADHD are Ritalin (methylphenidate) and Adderall (amphetamine). These drugs work by inhibiting norepinephrine and dopamine transporters in the brain to increase its extracellular hormone levels, specifically in the prefrontal cortex (Spencer, 2015). The prefrontal cortex is involved in functions from attention and memory to speech, self-control, and abstract thinking (Siddiqui, 2008). But what are the medication’s long-term effects on such a fundamental brain area?

A 2013 study found that psychostimulants increased the number of dopamine transporters in the brains of ADHD patients over time. These effects were observed as early as just one year after the start of daily use (Wang, 2013). Decreased levels of dopamine in the brain are associated with other conditions such as depression or anxiety. Consequently, long-term use of
psychostimulants could foster development of other mental health issues. Furthermore, the increase in dopamine transporters results in a need for increased medication dosage to maintain the same level of cognitive effect on the patient over time. Even guidelines from the American Academy of Child and Adolescent Psychiatry recognize that “most [children] require dose adjustment upward as treatment progresses” (Pliszka, 2007). While it is true that the AACAP mainly refers to the early stages of diagnosis in which each patient is started on the minimal dosage and gradually increased to their optimal level, it does not necessarily follow that dosage increases stop there. Many 6-year-old patients starting out at 5 milligrams of Adderall a day can have their dosages increased to 20-30 milligrams by adolescence (Huss, 2017).

**Discussion**

**Influence of Pharmacological Commercialization**

The surge in ADHD psychostimulant prescriptions exemplifies a larger trend of American dependence on pharmacology. Underperformance, inattentiveness, and hyperactivity across a broader range of age and social contexts are lumped together and treated under the ADHD umbrella (Loe, 2008). This is largely a result of pharmacological commercialization. Direct-to-consumer drug advertisement first emerged in the 1980s, starting with Merck in 1981 as it ran print advertisements for the flu vaccine. In 1983, Boots Pharmaceuticals launched the first broadcast ad to promote prescription ibuprofen (Ventola, 2011). Prior to this, prescription drugs were not allowed to be advertised on TV. Commercialization makes the drugs seem less harmful or lower risk, especially when their ads pop up between those of benign household products. Prescription medications become just another item to add to the shopping cart. It is
telling that pharmaceutical companies spend twice as much on advertising as they do on research (Angell, 2004). The normalization of drugs makes accepting a prescription that much easier.

Of course, direct-to-consumer pharmaceutical marketing can be helpful to those who might not otherwise know of their condition. Some lower-income neighborhoods may lack the resources necessary to recognize signs or symptoms of an otherwise treatable condition (Bergner, 1968). Thus, seeing a print ad or watching a commercial can be informative.

Pharmaceutical marketing only becomes harmful when it convinces those who do not have a disorder to believe they do. This is especially prevalent with ADHD, where behavioral traits of hyperactivity and inattentiveness are present on a continuum in all individuals. When commercials list symptoms that are present in everyone to some degree, consumers may be prompted to self-diagnose. In this respect, these commercials are “selling sickness” (Moynihan, 2005), and consumers may define their troublesome behaviors as disorders.

In our increasingly competitive society, students are especially susceptible to such marketing ploys. They often seek doctor consultations in hopes of attaining a prescription for psychostimulants in effort to boost SAT scores and GPA; those who are denied may pursue other routes of obtaining the pills illegally. This explains the burgeoning “grey market,” in which psychostimulants are sold to students without diagnosed disorders during exam periods (Loe, 2008). Risks to the user aside, this abuse undermines the validity of the disorder for those who are truly struggling. And the use of such medication without real need - even with a doctor’s prescription - shares the same risks.

Potential for Abuse and Long-term Risks
As with all drugs, it is important not to underestimate a psychostimulant’s potential for abuse just because it is associated with education and learning. Psychostimulants are classified by the DEA as Schedule II Substances, which rates their potential for addiction on par with drugs such as oxycodone and methamphetamine (Drug Enforcement Administration, 2019). Patients must adhere to their prescriptions and follow strict instructions regarding what to do if they miss a pill, need a dosage adjustment, or anything in relation to the drug use. Additionally, heavy use of psychostimulants like Adderall over long periods of time can increase the user’s potential for long-term side effects and risk factors (Lautieri, 2019). These can range from minor headaches to serious heart palpitations (Lakhan, 2012). And because many people start the medications as children, adult patients may require an updated risk analysis from a doctor before they are able to make informed decisions about continued use.

Psychostimulants as Treatment

The most important ethical point to consider when using psychostimulants to treat ADHD is whether the medication is being used correctly. Psychostimulants have proven to be useful and even necessary for some people with ADHD to function in school and employment. In one study, the use of psychostimulant medication in combination with diligent study habits in undergraduates with ADHD was sufficient to eliminate the GPA disparity between students with ADHD and students without (Advokat, 2013). In other cases, medication is not necessary - or at least not as the first step. Pharmaceuticalization can promote the idea that medication is the only treatment - negating the exploration of alternative solutions before resorting to pills. For ADHD specifically, it has been found that interventions as simple as exercising 30 minutes a day and reducing sugar intake can mitigate symptoms (Grassmann, 2014). Alternative scientific
approaches include EEG biofeedback, in which brain waves are met with feedback to promote activity in other areas to help people “control” the way they concentrate. This resulted in nearly 80% improvement in standardized testing, IQ scores, and parent/teacher ratings of the children’s behavior (Fox, 2005). Behavior modification via operant conditioning and positive reinforcement also significantly reduced ADHD tendencies in schoolchildren (Hodgson, 2012). Pharmaceutical commercialization can act as a vessel for increasing diagnoses and increased medication seeking without first pursuing other options.

Delayed Development vs. Disorder

It is also important to determine whether we are medicating symptoms of what might be perfectly normal psychological or behavioral patterns in a child with delayed development. That is, a child who is transiently below the age group’s physical or mental development curve. Children slow to develop language and literacy skills may seem to have lower attention spans, when really the task is more mentally taxing for them compared to their peers and requires higher levels of exertion (National Research Council, 2015). The manifestation can then be confused with ADHD. Slow cognitive development can be caused by a variety of factors. Living in a neighborhood where children can play unaccompanied by a parent vs. living in a neighborhood where the children cannot can effect the children's motor, social and behavioral skills - with the latter group scoring lower in all three categories (Hüttenmoser, 1995). Infants born small for gestational age (SGE) with respect to smaller weight, length, and head size have slower rates of development throughout childhood and early adulthood (Clayton, 2007). This includes slower cognitive development, which may present as ADHD (Indredavik, 2004). So how can we tell the difference? One solution is to screen children for physical underdevelopment
which often goes hand-in-hand with cognitive development (National Research Council, 2015). This would allow clinicians to effectively rule out underdevelopment before reaching for the prescription pad.

Additionally, an estimated 30% of children with ADHD exhibit comorbid learning and psychological impairments such as dyslexia, antisocial disorders, or even anxiety (Biederman, 1993; Seidman, 2005). While medical professionals see the rising incidence rate as a growing clinical problem, sociologists see it as a social crisis about how we define “normal” childhood behavior and academic achievement. At the heart of this debate lies the rights of a child to be “raised” and seen as a person, rather than “designed.” While raising children employs neuroscience to maximize educational benefits, designing children uses neuroscience to achieve a desirable disposition of the child; made possible by psychostimulants (Stein, 2010). As such, it is important to understand that while medications treat the symptoms, further investigation is needed to find the source of the problem and address it properly for the wellbeing of the child - and not for his parent or teacher.

It could be argued that valuable time may be wasted, perhaps deferring years of necessary treatment, by relegating pharmacological symptom management to a last resort. One can see the questioning parents of a child with bona fide ADHD questioning a physician as to why their child was forced to endure the difficulties of such a condition for so long when drugs were readily available to address the child’s symptoms. Such is the risk of exploring other, less intrusive options before opting for medication, which in some cases may have been the right approach all along. This is where the judgement of the physician or psychoanalyst comes into play. It should be noted, especially in considering the above, that my position is not in opposition
to the medications themselves, but rather to their exploitation and unnecessary use. Turning health and medicine into a commodity undermines the seriousness of taking prescription drugs.

Social Pharmacology as a Compromise

A solution to this diagnostic conflict may reside within social pharmacology. Social pharmacology is a multidisciplinary system that analyzes social and cultural influence on drug use and effects (Montagne, 2004). Its main goal is to maximize patient therapy benefits and minimize negative social consequences. It goes beyond merely contrasting patient symptoms with drug risks and rewards, and into the contextualization of patient concerns within their social environments. This holistic approach can curb the tendency to immediately choose pills without first pursuing other options, in addition to making sure that the right pills are prescribed for the right reason.

Conclusion

Pharmaceutical commercialization has expanded the realm of medicine and arguably contributed to lowering consumer tolerance for psychiatric discomfort. However, pharmaceutical marketing does not exist in a vacuum. Consumers cannot obtain advertised prescription medications on their own - they must first consult with a primary care provider or psychiatric specialist. As such, clinicians should only turn to psychostimulant prescription after all other options have been exhausted: alternative interventions, psychotherapy, and screenings for co-exhibited conditions like dyslexia, depression, and anxiety. Some patients really do need and benefit from ADHD medication, but it must be used wisely. Future work in ethics should emphasize that any drug intervention, no matter how small, is still a drug. American health sciences should shift toward social pharmacology over traditional pharmacology, which
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incorporates various disciplines to increase safety, efficacy, and knowledge of marketed drug use instead of first treating symptoms with drugs. In the end, it is unethical to deploy pharmacology to artificially change behavior in children primarily for the convenience of the parent, doctor, or educator. In medicine, ethics must always supersede accommodation.
References
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