

ADHD medication use is increasing but some patients in some countries are still not receiving the treatment they need

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There has been an increase in the use of medications to treat attention deficit hyperactivity disorder (ADHD) in both adults and children between 2001 and 2015, according to a major observational study involving over 154 million individuals from 14 countries in Europe, North America, Asia, and Australasia, published in *The Lancet Psychiatry* journal. The study provides the most comprehensive analysis yet of trends in ADHD medication use.

Global estimates suggest that ADHD affects 5% to 7% of children and around 2.5% of [adults](#). While use of ADHD medications in children and adolescents (aged 3-18 years) has gone up in all [countries](#), the number of people using medication ranged from 0.3% in France to 6.7% among Medicaid beneficiaries in the USA in 2010. In adults, use of these drugs was less common, ranging from 0.003% in Japan to 1.5% among privately insured individuals in the USA in 2010.

The findings highlight that prescription rates are still far below diagnosis rates in many countries. Additionally, the wide and persistent disparities in use of these drugs between countries and regions, suggests marked differences in the clinical approach to treating ADHD, underscoring the need for evidence-based guidelines to be followed consistently in clinical practice so that individuals with ADHD receive optimal treatment.

ADHD is one of the most common neurodevelopmental disorders in

children. However, it can be a lifelong condition and at least two-thirds of children continue to show symptoms in adulthood. A recent study published in *The Lancet Psychiatry* found that ADHD medications can be effective and safe treatment options for children, adolescents, and adults.

"What's especially important is our finding that the rates and type of drug treatment prescribed appears to depend largely on where you live," says Professor Ian Wong from The University of Hong Kong, Hong Kong, who co-led the study.

"We believe increases in the prescribing of ADHD medications reflect improved awareness of ADHD and recognition of the importance of effective treatment to avoid long-term problems. Yet, in most countries these rates are considerably lower than ADHD prevalence estimates, indicating that many cases of ADHD may be going undiagnosed and untreated—especially in nations in Asia where use is low. However, in the USA where rates of prescribing in many states already outstrip prevalence of the condition, we cannot exclude the possibility that ADHD is overdiagnosed and overmedicated. There is a need for monitoring medication safety and effectiveness in exposed populations, particularly in adults."

Despite concerns over the rising use of ADHD drugs and inappropriate prescribing of medications, little was known about the trends and usage patterns in different world regions, particularly among adults, before this latest research.

The study analysed electronic patient records from 14 countries in northern Europe, western Europe, Asia and Australia, and North America to compare ADHD medication use in over 154 million individuals aged 3 years or older between 2001 and 2015. The authors note that prevalence data were not available for all countries in all years.

Over the study period, an average of around 2% of children (aged 3-18 years) and 0.4% of adults were given at least one prescription for an ADHD drug. Regional prevalence was highest in North America, where 4.5% of children and 1.4% of adults were using ADHD medications, and lowest in western Europe (0.7% and 0.03% respectively).

Use of these drugs in children and adults increased over the study period in all countries.

The rise in medication was most pronounced among children in Canada, with average increases of over 45% a year (from 0.2% of children using ADHD drugs in 2001 to 1.8% in 2009). In adults, growth in Japan has been faster than in other countries, with average increases of 76% a year (0.003% of adults in 2010 to 0.5% in 2015). However, despite large increases, overall medication use remains low.

Comparatively, in the USA—where medication use is high—the rate of increase has been slower than in other countries in both children (around 3% a year; 4.6% of children in 2002 to 5.6% in 2014) and adults (about 13% a year; from 0.42% of adults in 2001 to 2.1% in 2014).

In Europe, children and adults from northern regions are increasingly likely to be prescribed ADHD medications compared to their western counterparts, and especially high rates of ADHD medication use have been reached in Iceland (5% of children and 1.6% of adults in 2013).

Additionally, there were average rises in medication use of 22% a year in Finland (0.2% of children in 2005 to 1% in 2012) and 29% in Denmark (0.03% of adults in 2001 to 0.52% in 2013), while the increase in medication use among children in the UK was much slower (5% a year; 0.3% children in 2001 to 0.64% in 2014).

The types of medications prescribed also varied. Methylphenidate was

the most commonly prescribed drug for ADHD in all countries in 2010—ranging from more than 90% of patients in Hong Kong, Taiwan, Canada, Finland, and Spain to less than 60% in Australia, and 45% of US Medicaid patients. The main treatment for privately insured US patients (MarketScan) was amphetamine (41%), followed by methylphenidate (34%) and lisdexamfetamine (21%).

The authors speculate that the variation in prescribing practices is likely to be due to a number of factors, including varying diagnostic practices and thresholds used to initiate treatment in individuals with ADHD, the availability and cost of medicines, and differences in regional treatment guidelines. For example, The National Institute for Health and Care Excellence in England and Wales (NICE) guidelines until recently recommended non-pharmacological treatment as the first-line treatment for [children](#) and young people aged 6 years and older; whereas medications have been recommended as first-line treatment by the American Academy of Pediatrics and the Academy of Child and Adolescent Psychiatry guidelines.

"Renewed efforts are needed to improve the consistent identification and treatment of ADHD across the international community and to develop consensus on best practices and to implement such practices", says co-author Dr. Patrick Ip from The University of Hong Kong, Hong Kong, China. "Further research is needed to show the longer-term safety and effectiveness of ADHD medications to develop evidence-based guidelines, particularly in adults."

The authors point to some limitations including that the data only relate to the proportion of individuals with at least one prescription in a calendar year and not to the proportion receiving treatment at any given time. They also note that for some countries, data sources with complete population coverage were not available (ie, USA, Canada, and the UK), and this may have affected the accuracy and generalisability of the

results. Finally, the study examined medication use regardless of an ADHD diagnosis, so it is unclear what proportion of participants were prescribed medications for ADHD or hyperactivity symptoms in patients with other disorders such as autism.

Writing in a linked Comment, Margaret Sibley from Florida International University, Miami, Florida, USA discusses the reasons why [stimulant medication](#) prescriptions are rising globally, adding that: "There is an urgent need to refine evidence-based guidelines for stimulant medication. This mission extends beyond ADHD. Researchers should address pressing questions, including the following: which sources of cognitive dysfunction (eg, illness, sleep difficulties, stress, trauma, low intelligence quotient, high demands, or fatigue) are appropriate for stimulant prescription and under which circumstances is it appropriate to prescribe stimulants to cognitively healthy individuals (eg, weight loss or cognitive enhancement)? Resolving these issues represents an important step towards improving global stimulant [medication](#) practices."

More information: *The Lancet Psychiatry* (2018).
[www.thelancet.com/journals/lan ... \(18\)30269-4/fulltext](http://www.thelancet.com/journals/lan... (18)30269-4/fulltext)

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