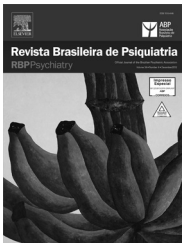
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Letter to the Editors

ADHD is undertreated in Brazil

Dear Editor,

Increasing awareness about attention-deficit hyperactivity disorder (ADHD) – whether related to campaigns sponsored by medical associations, patient self-help groups or pharmaceutical companies – is associated with a desirable progressive increase in the number of patients being diagnosed and treated. However, there are concerns about overtreatment, especially in children and adolescents, which is often addressed by the media in alarming ways.

Stimulants are the first-line treatment for ADHD in school-age children, adolescents and adults. The recent increase in the sales of these pharmaceuticals in Brazil has directed the attention of the community to the possibility of overtreatment. To verify whether the total number of stimulants sold in Brazil in 2009 and 2010 correspond to a larger-than-expected number of patients with ADHD in treatment, we analyzed the available data from the only two pharmaceutical companies in the country that were marketing stimulants during that period. We estimated the number of individuals that would be under continuous treatment considering that a patient would take one single pill per day (even for immediate-release methylphenidate 10 mg, which should be administered two or three times a day) for 22 days per month for ten months per year. It is important to note that we considered the minimum number of days in use for an adequate treatment, which implies that all patients would withdraw from medications during the summer and on weekends. In 2009, 1,413,460 boxes of methylphenidate formulations were sold in Brazil, which represents 32,986,110 pills. In 2010, 1,674,372 boxes of methylphenidate formulations were sold in Brazil, which represents 40,585,870 pills (data provided by IMS Health Care Measurement). Using our very liberal definition of continuous treatment (1 pill per day, for 22 days per month, for 10 months per year), well under treatment guidelines, we calculated that up to 149,937 and 184,481 individuals could be under continuous treatment in 2009 and 2010, respectively.

We then calculated the expected number of individuals with ADHD in Brazil, taking into account the latest official population figures provided by IBGE (2010). Again, to perform an extremely conservative analysis, we considered the lowest prevalence estimate detected in a Brazilian epidemiological study (0.9%) (Goodman et al.[1]), even though recent meta-analyses computed worldwide rates of ADHD approximately 5.3% for youths and 2.5% for adults (Polanczyk et al.[2]; Simon et al.[3]). Using these very conservative estimates for ADHD in the population, at least 924,732 individuals are expected to be affected by ADHD in Brazil (Table 1).

Table 1 The maximum number of patients under continuous treatment in 2009-2010 in Brazil and the expected number of individuals with ADHD based on very conservative prevalence estimates

Age range	Brazilian Population*	Estimated prevalence of ADHD	Estimated number of individuals with ADHD in Brazil	Estimated number of patients with ADHD under treatment in 2009**	Estimated number of patients with ADHD under treatment in 2010**
5 to 19 years old	49,127,006	0.9%	442,143	-	-
20 to 59 years old	107,242,035	0.45%	482,589	-	-
60 years old and more	20,590,599	Unknown	-	-	-
TOTAL			**924,732**	**149,937**	**184,481**

*Data from IBGE (www.ibge.gov.br), 2010. **The numbers of pills sold in Brazil in 2009-2010 were 32,986,110 and 40,585,870. Treatment is considered receiving one pill per day (independent of the dosage or pharmaceutical preparation) for 22 days per month for 10 months per year.

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Thus, it is estimated that only 16.2-19.9% of individuals affected by ADHD in Brazil were receiving first line treatment for the disorder in 2009-2010, even given very conservative figures calculated by overestimating the number of individuals receiving continuous treatment and underestimating the number of individuals with ADHD. In fact, the real figure is likely even lower because these stimulants also have other, less frequent indications. However, it is important to note that approximately 30% of ADHD patients do not respond to stimulants and should be treated with other agents; furthermore, not all ADHD patients require pharmacological interventions. However, our extremely conservative analyses certainly counter-balance any effects of these two aspects. Concerns that an excessive number of individuals may be treated with stimulants for ADHD in our country lack any scientific basis. Further educational campaigns are needed to identify the significant proportion of untreated individuals affected by ADHD in Brazil.

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Disclosures

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*** Significant*
**** Significant. Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.*

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