

Indiscriminate use of lisdexamfetamine dimesylate by medical students – a literature review

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Introduction

Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurodevelopmental condition characterized by inattention, impulsivity, and hyperactivity. The primary treatment involves central nervous system stimulants, like Lisdexamfetamine Dimesylate (LD)¹. These psychostimulant medications are substances that enhance the synaptic availability of noradrenaline and dopamine by inhibiting their transporters, reducing synaptic reuptake, and increasing the availability of these neurotransmitters². As a result, there is an improvement in concentration and cognitive performance³.

Due to this characteristic, there is a growing trend of indiscriminate use of these medications by professionals and students aiming to enhance their performance and achieve better professional outcomes⁴. This issue is particularly prominent in undergraduate medical programs, where extensive study hours, a vast curriculum, and the demand for high academic achievement create conditions conducive to the unsupervised use of these substances⁵.

Self-medication with psychotropic drugs raises public health concerns. Neurobiological differences are present between individuals with and without ADHD, including variations in brain size, specific regions related to dopamine, and changes in brain circuits⁶. Consequently, healthy individuals engaging in unintentional use of this class of medications are more susceptible to their adverse effects.

Among the reported adverse effects are withdrawal symptoms, fatigue, depression, insomnia, irritability, hyperactivity, psychosis, hallucinations, anxiety, headache, dizziness, tachycardia, nausea, vomiting, diarrhea, reduced or loss of appetite, weight loss, abdominal pain, and pituitary and sexual dysfunction. In the long term, there have been reports of cardiovascular effects and reduced stature, along with a "rebound effect" where abrupt discontinuation of the medication

exacerbates insomnia, leads to depression, and causes afternoon exhaustion^{3,7}.

Given the significant increase in the use of LD by medical students and the reported significant side effects, this study aims to conduct an epidemiological analysis of the frequency of medication use among students.

Methodology and Objectives

The work followed an exploratory approach based on bibliographic research, as defined by Gil⁸, involving the analysis of pre-existing materials, such as books and scientific articles. As a result, it was divided into five stages, which are as follows: 1) Sources: Scientific articles related to the topic were consulted, obtained from databases (SciELO, PubMed and LILACS), published in the last 10 years (from 2013 to 2023). Descriptors such as lisdexamfetamine, Students, Medical Students, and Indiscriminate Use were applied in both Portuguese, Spanish and English. Four national articles and one international article, all available online in their entirety, were selected. 2) Data Collection: The process involved initial exploration of sources, followed by focused in-depth reading, and data collection with author, year, method, results, and conclusions. 3) Analysis and Interpretation of Results. 4) Discussion and Results. 5) Conclusion. The categories identified in the previous stage were analyzed in light of the theoretical framework related to the study's theme.

Results

According to the analyzed articles (Table 1), it can be observed that there is abusive use of LD among students, and even though they use it to enhance their cognitive benefits and even for stress relief, there is no evidence of this in the literature. All authors emphasize the importance of measures related to raising awareness among students regarding the risks of the improper use of LD and its undesired pharmacological effects.

Table 1 – Use of LD in students.

Authors	Objectives	Conclusion
MENEZES; MAIA, 2018 ⁷	Discuss the causes, risk factors, comorbidities, epidemiology, and consequences of methylphenidate use by medical students in Brazil through literature research.	Understanding the use of methylphenidate in medical students can inform educational institutions and promote prevention and support strategies for students.
CERQUEIRA et al., 2021 ¹	Evaluate the use and risks of methylphenidate and lisdexamfetamine by university students.	Recommend control in the dispensing and prescription of substances, rigorous medication oversight, and educational seminars to promote the rational use of these drugs.
FINGER et al., 2013 ²	Review the use of methylphenidate in medical students, including prevalence, reasons, and impact on academic performance.	No evidence of methylphenidate benefits for memory or learning; it only makes the user more alert, reducing sleep.
NETO et al., 2018 ³	Conduct a review of the non-prescribed use of methylphenidate in medical students.	Many medical students use methylphenidate for cognitive enhancement and concentration.
CARNEIRO et al., 2013 ⁴	Analyze the prevalence of non-prescribed methylphenidate use among medical students.	There is a need to better understand the stress inherent to medical education to prevent inappropriate methylphenidate use.

Conclusion

It is concluded, therefore, that there is indeed abuse not only of LD among medical students, and it is necessary to address this issue to raise awareness and consequently promote the rational use of this substance.

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