

## INTRODUCTION

- Students are often searching for a competitive edge in academic and professional environments by consuming products known as smart drugs.
- The term “smart drugs” may encompass products including stimulant substances, caffeinated products, and nootropic adaptogens.<sup>1</sup>
- This highlights a growing issue because the use of such products has been associated with increased risks, such as abuse, dependence, and legal consequences.<sup>4</sup>
- Previous studies have indeed shown that there is a prevalence of smart drug use among university students for the purpose of improving academic performance.<sup>2,3</sup>
- However, research fails to answer many questions, such as prevalence of smart drug use among pharmacy students and specific reasoning and frequency of use.

## ABSTRACT

**Objective:** To determine the prevalence, frequency, and reasoning for the use of smart drugs, including caffeine-containing products, stimulant substances, and nootropic supplements, among full-time California pharmacy students for the purpose of performing well academically and professionally.

**Primary Outcome:** Prevalence and use of caffeine-containing products, non-prescription stimulant use, and nootropic adaptogens amongst full-time California pharmacy students

**Secondary Outcome:** Reasoning behind the use of such products

**Methods:** An online, anonymous, and cross-sectional survey using Qualtrics will be sent to full-time pharmacy students in the state of California. Students will answer a series of questions about their demographics, use of various smart drugs, frequency of use, and the reasons for use.

**Results/ Conclusion:** Still Pending

## METHODOLOGY

### Overview

**Study Type:** Prospective observational study

**Mode of Data Collection:** Online, anonymous, cross-sectional survey using Qualtrics

**Specific Variables Assessed:** Refer to “Data Collection” section to the left

**Population:** PharmD students enrolled in 11, fully-accredited pharmacy schools in California

**Inclusion criteria:** Full time PharmD students aged 18 years or older, and enrolled in an accredited 3- or 4-year program in the state of California according to the criteria determined by the Accreditation Council of Pharmacy Education (ACPE)

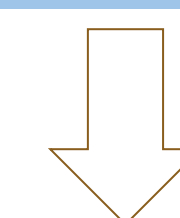
**Exclusion Criteria:** Students who will not choose to participate, will not complete the study, will not submit their answers, will not complete the survey in January 2021, or will not meet the inclusion criteria

**Statistical Analyses:** Descriptive statistics via the built-in Qualtrics software

### Data Collection

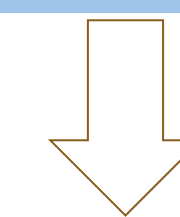
**Mode of Collection:** Qualtrics Survey

**Disclosure Statement:** objective and purpose of study, expected survey time, considerations, ensure of anonymity, contact information, electronic consent

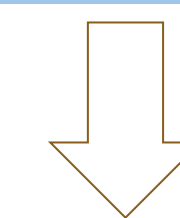


### Types of Questions:

**Demographics:** age group, gender, ethnicity, year in PharmD program, school enrolled, current year in school, relationship status, caregiver status

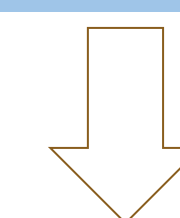


**Types of Products Consumed:** caffeine (coffee, caffeine pills, energy drinks etc), stimulants (amphetamines, cocaine), and/or adaptogens (ashwagandha, L-theanine)



**Reasoning for Use:** employment, extracurricular or co-curricular activities participation, and/or stressful events (exam, quiz, presentation, etc)

- Answered for each type of product reported to be used



**Frequency of Use:** once daily, multiple times daily, once weekly, 2-6 times weekly, once monthly, 2-3 times monthly, or only once/few times in the past

- Answered for each type of product reported to be used

**Expected Time to Complete Survey:** 10-13 minutes

## POSSIBLE CHALLENGES

1. Limiting survey fatigue
2. Incentivizing students to take the survey
3. Ensuring anonymity
4. Reluctance of students to report usage of smart drugs, considering perceived consequences

## RESULTS AND CONCLUSION

The results and conclusion of this study are still pending.

## REFERENCES

1. Heid M. (2019, January 23). Nootropics, or 'Smart Drugs,' Are Gaining Popularity. Should You Take Them? Retrieved July 23, 2020, from <https://time.com/5509993/nootropics-smart-drugs-brain/>
2. Mahoney CR, Giles GE, Marriott BP, et al. Intake of caffeine from all sources and reasons for use by college students. Clin Nutr. 2019 Apr;38(2):668-675. doi: 10.1016/j.clnu.2018.04.004. Epub 2018 Apr 10. PubMed PMID: 29680166.
3. Agarwal AK, Shehnaz SI, Khanam R, et al. Coffee in Class: An Alternative to Animal Experiments in Pharmacology? Alternatives to Laboratory Animals. 2015. DOI: 10.1177/026119291504300210.
4. Non-medical Prescription Stimulant Use among Post-Secondary Students. Canadian Centre on Substance Use and Addiction. 2018. ISBN: 978-1-77178-481-8.

## CONTACT

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