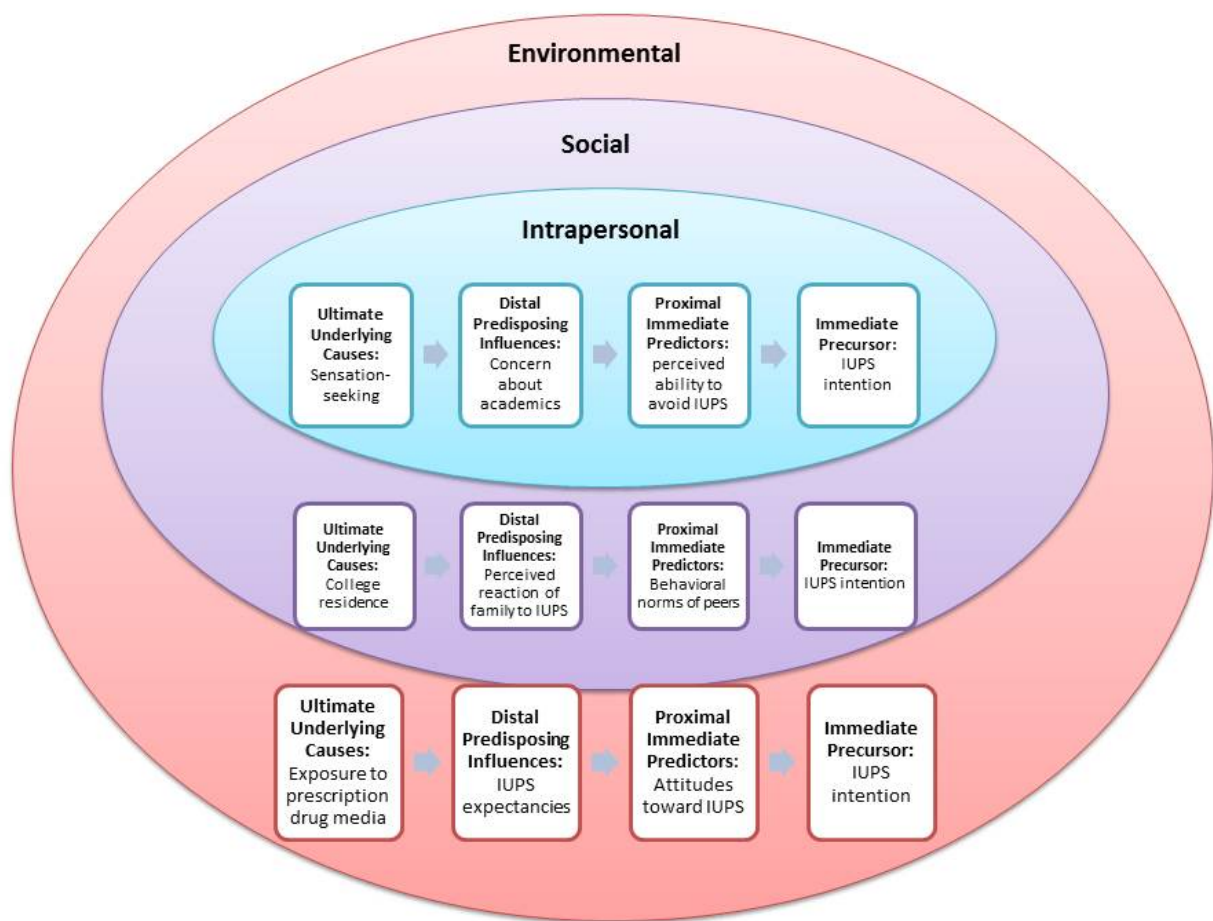


STASH, Vol. 9(8) - Performance enhancing drugs in academia: Explaining college students' illicit use of prescription stimulants

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During the last decade, the number of emergency room visits for college students abusing prescription stimulants has more than tripled (Substance Abuse and Mental Health Services Administration, 2013). To understand what might be driving this increase in Illicit Use of Prescription Stimulants (IUPS), researchers have used the Theory of Triadic Influence (i.e., TTI; Bavarian, Flay, Ketcham, & Smit, 2013b). As Figure 1 shows, three areas of influence (i.e., intrapersonal, social, and environmental factors) might promote the abuse of prescription stimulants through four stages of association (i.e., ultimate underlying causes, distal predisposing influences, proximal immediate predictors, and immediate precursors). Today's STASH reviews results from a recent study (Bavarian, Flay, Ketcham, & Smit, 2013b) examining illicit use of prescription through this comprehensive framework.



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Figure. Model of the Theory of Triadic Influence as applied to illicit use of prescription drugs, with examples of potential predictors. Click image to enlarge.

Methods

- Participants were 520 undergraduate students recruited from 20 randomly selected classrooms at a Pacific Northwest University during the winter 2012 academic term.
 - The survey response rate was 96%
 - The sample was fairly evenly distributed between men and women and was mostly non-Hispanic white, and upperclassmen.
- Participants completed a paper-based survey about IUPS (i.e., the BEACH-Q; Bavarian, Flay, Ketcham, & Smit, 2013a). IUPS was defined as using prescription stimulants without a prescription for nonmedical purposes or in excess of what was prescribed.

Results

- About 26% of students reported ever using IUPS during college. Of these, 70% reported that they began IUPS during college.

- Table 1 shows the adjusted [odds ratios](#) for significant variables from the final logistic regression models predicting IUPS use for each of the three areas of influence organized by the four levels of association.
 - As Table 1 shows, protective factors included Asian/Pacific Islander ancestry; living on-campus; exposure to prescription drug print media; and perceived ability to avoid IUPS. Also, unexpectedly, students who felt that faculty would approve of IUPS were less likely to engage in this practice.
 - Risk factors included having lower grades (i.e., having a GPA of 2.0 compared with a 4.0); lifetime ADHD diagnosis; being a varsity athlete; perceived family approval of IUPS; behavioral norms of friends; greater prescription stimulant knowledge; understanding the cost/benefits of IUPS; and IUPS intentions.

	Intrapersonal (N = 467)	Social Context (N = 476)	Environment (N = 484)
	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)
Ultimate underlying causes	Asian/Pacific Islander: 0.08 (0.42, 2.96)**	On campus housing: 0.21 (0.07, 0.68)**	Exposure to Rx drug print media: 0.55 (0.34, 0.89)*
Distal predisposing influences	GPA: 2.0: 8.65 (2.35, 31.90)**; ADHD diagnosis: 3.27 (1.21, 8.82)*	Varsity athlete: 2.82 (1.07, 6.39)*; Perceived family approval of IUPS: 2.10 (1.24, 3.54)**; Perceived faculty approval of IUPS: 0.63 (0.39, 0.99)*	
Proximal immediate influences	Perceived ability to avoid IUPS: 0.37 (0.25, 0.55)**	Behavioral norms of friends: 1.02 (1.00, 1.04)*	Correct knowledge about prescription stimulants: 1.58 (1.11, 2.27)*; Understanding cost/benefit of IUPS: 1.88 (1.00, 3.52)*
Immediate precursors	IUPS intentions: 6.31 (3.61, 11.01)**	IUPS intentions: 6.47 (3.96, 10.56)**	IUPS intentions: 5.70 (3.73, 8.70)**

Note. * $p < 0.05$; ** $p < 0.01$.

Figure. Significant adjusted odd ratios from 3 nested logistic regression models including the four levels of association (modified from Bavarian, Flay, Ketcham, & Smith, 2013b). Click image to enlarge.

Limitations

- The data from this survey, like most data collected via self-report, is subject to potential recall bias and underreporting harmful behavior.
- The cross-sectional design does not allow the study of how IUPS develops over time, though these associations suggest potential pathways.

- Aspects of this study (e.g., single-stage [cluster sampling](#) by class, use of one university) limit the generalizability of its findings; patterns might be different with other samples and within other environments.

Conclusion

This study is a promising step in understanding college students' IUPS. It is one of the first to use a comprehensive framework to understand relationships among the factors that might influence on IUPS. This research also provides prevention specialists with areas to target at the intrapersonal, interpersonal and environmental levels, such as skill building to help students avoid IUPS and social norms campaigns that build awareness about the disapproval of family and faculty, as well as correcting campus misperceptions of misuse among students. However, future studies that work with larger, more representative samples and longitudinal study designs will best serve the prevention and treatment field.

What do you think? Please use the comment link below to provide feedback on this article.

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