



The Association of College Students' Health Literacy and Knowledge Related to the Nonmedical Use of Prescription Stimulants

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Statement of the Problem

There is an increasing prevalence of nonmedical use of prescription stimulants (NPS) on college campuses. Nearly 15% of individuals aged 18-25 use prescription stimulant medication for purposes other than intended (Varela & Pritchard, 2011). This has become a growing epidemic on college campuses, where the drugs are used for multiple purposes such as an academic performance enhancement, appetite suppressant, and for increased intoxication when combined with alcohol (DeSantis Anthony, & Cohen, 2013; DeSantis & Hane, 2010). When used for purposes outside of their intended use, prescription stimulants can pose a potential threat of physical and psychological dependency and/or abuse (DeSantis, Webb, & Noar, 2008). Furthermore, these drugs are classified by the Drug Enforcement Administration (DEA) as Schedule II substances, therefore misuse can also lead to legal ramifications (DeSantis, Webb, & Noar, 2008). As reduced health literacy is associated with a variety of negative health outcomes, including poorer ability in demonstrating how to take medicines (Berkman, Sheridan, Donahue, Halpem, & Crotty, 2011), it is likely that an individual's health literacy is related to his or her knowledge of the consequences of the nonmedical use of prescription stimulants (NPS). The results of this study will help researchers better understand NPS in the context of college settings and ultimately create more open and effective communication to help minimize this abuse.

Hypothesis

H: There will be a positive association between perceived knowledge of NPS and health literacy.

Method

- Following IRB approval, a survey was administered through the website SurveyMonkey.
- Participants were reached via email & social media sites (e.g. Twitter & Facebook).
 - A total N of 109 participants completed the survey
- After the data was collected it was analyzed in SPSS using Pearson Correlation.

Demographics

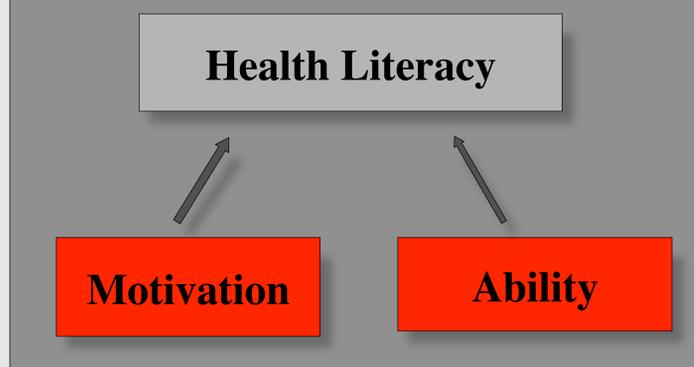
NPS Use	Users: 7 (7.3%)	Non-Users: 101 (92.7%)			
Age (years)	Min: 18	Max: 30	Mean: 20.82		
Class Rank	First Year: 7 (6.4%)	Sophomore: 10 (9.2%)	Junior: 30 (56%)	Senior: 56 (51.4%)	Graduate: 5 (4.6%)
Ethnicity	Asian: 8 (7.3%)	Black/ African- American: 2 (1.8%)	Hispanic : 8 (7.3%)	White/ Caucasian : 81 (74.3%)	Middle Eastern: 4 (3.7)

Measures

Health Literacy was measured using a set of 26 Likert-type questions with response sets from *strongly disagree* (1) to *strongly agree* (7) which were drawn from the Perceived Oral Health Literacy Scale (POHLS) (LaBelle, Weber, Booth-Butterfield, Martin, Myers, & Wanzer, 2015). There are two components within health literacy- one's motivation, and one's ability to seek and apply health-related information. This scale was found to be reliable with a Cronbach's Alpha of 0.88 for motivation ($M=3.86, SD=0.57$) and 0.89 for ability ($M=4.04, SD=0.56$).

Perceived knowledge of NPS was measured using an original set of 6 Likert-type questions. This scale was found to be very reliable with a Cronbach's Alpha of .939 ($M=3.86, SD=1.77$). There were two items with response sets that ranged from *not at all familiar* (1) and *not at all aware* (1), to *extremely familiar* (7) and *extremely aware* (7). Furthermore, respondents were given four statements in regards to their knowledge of prescription stimulants, such as 'how knowledgeable do you feel about the proper dosing and frequency of prescription stimulants'. Responses for these four questions ranged from *not at all knowledgeable* (1) to *extremely knowledgeable* (7). This scale was found to be very reliable with a Cronbach's Alpha of .939 ($M=3.86, SD=1.77$).

Perceived Oral Health Literacy Scale (POHLS)



Results

The hypothesis predicted there would be a positive association between perceived knowledge of NPS and health literacy. Results of a Pearson product-moment correlation indicate that perceived knowledge of NPS is positively correlated with the ability ($r = .345, p = .000$) factor of the CHLS, but was not significantly correlated with the motivation factor ($r = .001, p = .994$). The hypothesis was partially supported.

Table 1

Correlation Matrix for Variables in Study

Variable	1	2
1. Motivation	--	
2. Ability	.45*	
3. Perceived Knowledge	-.00	.44*

Note * $p < .001$

Perceived Knowledge Items

Item	Response Range
How knowledgeable do you feel about: • The proper dosing and frequency of prescription stimulants? • The benefits and risks of prescription stimulants? • How long prescription stimulants have an effect on the body? • The legal consequences of buying/selling prescription stimulants?	(1) not at all knowledgeable to (7) extremely knowledgeable.
How aware are you of the potential side effects of using prescription stimulants?	(1) Not at all aware to (7) Extremely aware
How familiar do you feel with the proper use of prescription stimulants?	(1) Not at all familiar to (7) Extremely Familiar

Conclusion and Implications

Our results were partially significant and they provided insightful information about the unique relationship between NPS and a variety of communication patterns. Even though participants reported high perceived knowledge of NPS, they may report low levels of health literacy because NPS has become such a social norm on college campuses. It was also interesting to note that NPS and perceived knowledge were unrelated.

There are a few limitations that are presented in this study. The small sample size of $N=109$, limited the generalizability of our results. Also there was a major underrepresentation of NPS users that participated in the study, which could be one potential reason why our hypothesis was only partially supported. This underrepresenting of NPS could be due to social desirability and self-reporting. Many colleges and universities are already aware of the high-risk drinking and drug use that their students partake in (Colleges & Universities, 2016). The Office of National Drug Control Policy ONDCP is committed to helping reduce the amount of drug use and risky drinking on campuses nation wide. They already have set forth a 3 actions: *Strengthen Efforts to Prevent Drug Use in our Communities, Seek Early Intervention Opportunities in Health Care, & Integrate Treatment for Substance Use Disorders into Health Care, and Expand Support for Recovery*. It is necessary for the prevention training to include information in regards to the abuse of non-medical prescription stimulants that is slowing becoming a nation-wide epidemic. College students need to be aware of the health risks and legal ramifications associated with using someone else's prescription stimulant (Colleges & Universities, 2016).

Directions for Future Research

Future research should be conducted to test if these hypotheses are significant with a larger, more diverse participant pool. This study should be extended and conducted at larger public universities in various areas because it could potentially provide different results in regards to the communication of the non-medical use of prescription stimulants on college campuses. Suggestions for extending this study:

- Comparing the difference in communication of non-medical use of prescription stimulants on college campuses in private versus public universities.
- Comparing the difference in communication of non-medical use of prescription stimulants on college campuses by their Princeton Review ranking
- Comparing the difference in communication of non-medical use of prescription stimulants between student athletes versus non-student athletes.

Future research should also be conducted to understand how increasing college students' level of health literacy can lead to a reduction in the amount of the non-medical use of prescription stimulant occurrences on college campuses. Future research should be conducted to understand why an individual's perceived knowledge of NPS was correlated with the health literacy component motivation to but not for one's ability.

Health Literacy Sample Items

Motivation:	'I am motivated to use information that I receive to improve my health'
Ability:	'I am able to understand discussions about health and healthy living'

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