

ABSTRACT

A Systematic Review of Recent Literature on Religiosity, Stress, Depression, And Prescription Stimulant Misuse

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This paper contains a systematic review of articles about the relationships between religious identity, stress, depression, and prescription stimulant misuse that were published between 2010 and 2015. Summaries of methodological characteristics (e.g. study design, sample sizes, sample compositions, religious affiliation, importance of religion in one's life, stress, depression symptoms, and prescription stimulant misuse) were investigated in this review. The association between religiosity and reduced risk of illicit drug use is well established, but a well-defined and definitive body of knowledge on the relationship of religiosity and prescription stimulant misuse has been slow to emerge and at times, findings are contradictory. The relationship between stress and prescription stimulant misuse has been well documented. Depression and prescription stimulant misuse has been documented.

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A SYSTEMATIC REVIEW OF RECENT LITERATURE ON RELIGION,
STRESS, DEPRESSION, AND PRESCRIPTION STIMULANT MISUSE

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A SYSTEMATIC REVIEW OF RECENT LITERATURE ON RELIGION, STRESS, DEPRESSION, AND PRESCRIPTION STIMULANT MISUSE

Introduction

Non-medical prescription stimulant use (NMPSU) is one of the most widely misused substance on college campuses, with majority of the population misusing prescription stimulants being amongst 18-25 year olds (Weyandt et al., 2009). While the relationship between religiosity and religious identity and illicit drug use has been established, the relationship between religious identity and NMPSU has remained largely untouched. Majority of research suggest that those who identify as religious and consider religion to be important in ones life are less likely to misuse substances, such as alcohol (Michalak, Trocki , and Bond, 2006). However when examining prescription stimulant medication, there was no significant difference between religious groups, the importance of religion in a practioner's life, or identification through a religion and an individual's likelihood of misusing prescription stimulants. Some articles attributed this to a lack of moral understanding that misuse of prescription stimulants is equal to the misuse of all prescription medications or illicit drugs.

The relationship between stress and NMPSU has been examined however research has primarily studied stress factors such as comparing academically competitive schools to other universities. Research has not extensively examined specific factors that could lead to an increase in stress levels that may influence the potential for prescription stimulant misuse, such as employment.

Depression's relationship NMPSU is similar to that of stress. Studies have found that those who were diagnosed with depression or experienced depression like symptoms were more likely to misuse prescription stimulants. Also those who reported NMPSU also reported higher ideation of suicide. While this relationship has been established, the literature supporting that is somewhat lacking in why students are choosing to use prescription stimulant medication to treat depression symptoms, if they are choosing to self treat, or examine the relationship of prescription stimulant misuse to higher reported rates of depression symptoms. Stimulants are not the only medication used to treat Attention Deficit Hyperactivity Disorder (ADHD). In fact, a small section of anti-depressants are used to treat ADHD. Research has failed to provide enough evidence to show that students may be self-treating depression symptoms with prescription stimulant medication instead of seeking help and using medically prescribed medication. Majority of the research focuses on motives of misuse and fails to study the justifications of the misuse (DeSantis and Hane, 2010). The small amount of research that does focus on justifications, note that one of the top four reason students justify prescription stimulant misuse is to self treat for ADHD (DeSantis and Hane, 2010). Further research is needed into the justifications of prescription stimulant misuse especially in relation to depression symptoms.

Methodology

A systematic review, which is an epidemiological look at findings of relevant articles published within a specified time period, was used in this study. The goal is to summarize the methodological characteristics of these studies and provide a summary of

findings in the articles. The characteristics of the studies are quantified and summed across all studies. This allows the reader to have an overview of research methodologies used to study the presented research questions and provide information about which topics were examined.

Method For Religiosity, Stress, Depression, and Prescription Stimulant Misuse

A protocol was used to identify peer-reviewed quantitative articles that investigated the relationship between religious identity and prescription stimulant misuse, stress and prescription stimulant misuse, and depression and prescription stimulant misuse from 2010 through 2015. The relationships of alcohol, illicit drugs, and tobacco to NMPSU were not included in this review because the object of this review was to review the literature for the affects of stress, depression, and religion to NMPSU. For this review, a comprehensive search was conducted of electronic databases that were accessed through MEDLINE and Google Scholar. Article titles on these databases were investigated using the search parameters of religious identity (relig* OR spirituality* OR religion), stress (OR competitive schools* OR high academics), depression (OR depression symptoms*) AND prescription stimulants (OR stimulant OR stimulant medication Ritalin* OR Vyvanse* or Adderall* OR ADHD medication). This search yielded over 1,415 titles, which were evaluated with two inclusion criteria. First, articles must be empirical investigations, and also must investigate at least one the relationships reviewed. Abstracts of articles that meet initial inclusion criteria then were retrieved for further review to determine if the articles meet three specific inclusion criteria:

1. Published between 2010-2015

2. Tested for either the relationship between religious identity and prescription stimulant misuse, stress and prescription stimulant misuse, or depression and prescription stimulant misuse.
3. Target population must be of college aged students including either undergraduate or graduate aged students.

Findings

Study Characteristics

This review identified 46 empirical articles published between 2010-2015. The majority of the articles' analyses investigated the relationship between depression and/or stress and the misuse of prescription stimulants. A smaller portion of the articles studied how religiosity and religious identity affected the likelihood to misuse prescription stimulants. Table 1 shows a breakdown of each study included as well as the different relationships investigated in the studies.

Table 1. Studies, Characteristics, and Results

Study Name	Sample Size	Study Group	Findings
Palamar, Kiang, Halkitis 2014	962	CA	Religiosity is a protective factor, except when a Person Identifies as agnostics. This contradiction disappears when controlling for religious importance. However protective factor can diminish with exposure to users
Rosenberg et. Al 2012	211	CS	Participants said religion has no impact on drug use
Giordano et. Al 2015	310	CS	Religion protects against alcohol and marijuana use, but may not with psychostimulants

Palamar 2012	700	CS	Those who misuse are more likely secret about use because they believe they will be rejected by other, including stimulant misuse
Sattler, Wiegand, 2013	9368	ICS	Increase in test anxiety increased risk of NMPSU
Forlini et al. 2014	1026	ICS	Students were against NMPSU in the academic setting,
Sattler et al, 2013	4892	CS	Students more likely to use than teachers, but overall disagree
Oberleitner et al. 2011	2850	CS	35% of subjects meet DSM criteria for substance abuse (psychotropic drugs)
Snipes et. Al, 2014	767	CS	Greater religiosity scores were associated with decreased NMPSU
Watkins, 2012	841	CS	Motivations were instrumental in nature with a few reporting for recreational use
Afandi et al. 2013	290	CS	67.2% of students showed a lack of sleep or poor sleep which affects anxiety levels
King, Jun 2014	4711	CS	Around 11 % of students reported NMPSU with majority being males (13%male and 9.8% female)
Underhill, Langdon 2013	433	CS	College environment, peer pressure, and perceived use rate influence actual NMPSU rate
Vercko 2014	38	CS	NMPSU is affected by who we acquire the medication form, stress, depression, and a multitude of other factors
Maahs, Weidner, Smith 2014	484	CS	Social and social learning strains better predict NMPSU than academic stress
Gallucci 2011	1200	CS	Majority of those who reported NMPSU did so to help study (45.6%)
Levinson, McKinney 2013	22	CS	NMPSU and medical use are centered around academic performance
Giordano et al. 2015	3038	CS	Self-worth, especially self image and God's love, greatly affected NMPSU
Rabiner et Al 2010	843	CS	NMPSU associated with high substance abuse rates as freshman, attention problems, or depression
Clegg-Kraynok, McBean, Montgomery-Downs 2011	492	CS	Those who reported NMPSU reported poor sleep, sleep disturbances, and global PSQI scores.
Bossaer et al 2013	372	CS	Around 11% reported NMPSU and was mainly for academic performance or energy levels
Rozenbroek, Rothstein 2011	413	CS	NMPSU is strongly associated with social factors and those who reported multi drug use were more likely to NMPSU
Vegh 2011	1134	CS	Data showed importance of strain on certain behaviors and the significance of anger, depression and anxiety in relation to strains. Partial support for GST was also found in that anxiety mediated the relationship between strain and the illicit use of prescription drugs.
Teter et al 2010	3639	CS	Those who consistently misused prescription stimulants or took nonorally were more likely to be depressed or have depression symptoms
Dietz et al 2013	2569	ICS	Higher rate of NMPSU in sport related majors, and also higher rates of misuse than what has been reported in other studies of the German student population
Vo 2013	1976	CS	NMSPU was second most talked about topic in group, with majority expressing reason to be to help study
Schelle et al 2015	1572	ICS	Rate of misuse is lower in Belgium students than other countries, although a strong link between stress and lifestyle to NMPSU

Thomas 2013	278	CS	Students typically started use during college, and seem to only misuse while classes are in session. Also a strong link between students and self-medicating and coping to NMPSU.
Varga 2012	1015	GS	Graduate students misuse at a lifestyle rate of 15% and most often identify academic stress as a reason to misuse. Those who misused stimulants were more likely to use marijuana, cocaine, and ecstasy within their lifetime.
Verdi 2013	807	GS	Use amongst graduate students shows a positive relationship between depression, stress, perceived safety, and other social factors as reason for misuse
Silva et al 2012	77	CS	Drug use was planned to occur within sociably acceptable situations. Use was also centered on increase performance, mood, or other drugs.
Gallucci, Martin, Usdan 2015	1022	CS	Over 50% of prescription holder had diverted their medication and did so to make money or to help with high academic stress. Those who misused were more likely to divert medication.
Ponnet et al 2015	3589	ICS	Strongest predictor of NMPSU is subjective norm, with attitude and perceived behavioral control. Psychological distress also contributed to a lesser degree.
Ong 2011	549	CS	General strain theory does not explain NMPSU, and those who binge drink or use other substances are more likely to NMPSU.
Bavarian 2012	520	CS	Religion has a protective factor (especially attendance) on NMPSU.
Betancourt et al 2013	275	CS	Those with higher stress levels reported higher rates of NMPSU, and also reported reason for use was to cope with stress and help with academics.
Dussault 2011	1033	CS	Sorority and fraternity member more likely to misuse than others. Also showed that high levels of stress, anxiety, and depression was associated with NMPSU.
Hanson et al 2013	132,099	CS	Tweets about NMPSU was high during times of academic stress, especially mid-terms and finals.
McCabe, West, Teter, Boyd 2014	21294, 20138, 25555, 24574, 25874, 16156	CS	White, male, members of fraternities are more likely to misuse prescription medication across the board in comparison to others (includes NMPSU)
Vidourek, King, Knopf 2010	363	CS	Junior and seniors more likely to misuse prescription medication than others and NMPSU was second to pain killer use. Prescription medication misuse was correlated to higher suicidal ideation, smoking, and drinking.
Bidwal, Ip, Shah, Serino	589	PS	Medicine and PA students not only reported higher rates of NMPSU than pharmacy students, but also a higher rate of being diagnosed with anxiety, depression, and ADHD.

Verdi, Weyandt, Zavras	807	GS	Reports of self perceived anxiety had a strong correlation with reports of NMPSU. Also a strong correlation for perceived safety and NMPSU.
DeSantis, Noar, Webb 2010	79	CS	Lack of danger of NMPSU, ease of acquiring the drugs, and high academic stress were the top three reasons for NMPSU.
McCauley et al 2011	2000	CSW	Increase rate of lifetime depression is associated with prescription drug misuse, including NMPSU. Students reported ease of acquiring prescription or medication from people and used to it to help study.
Dussault, Weyandt 2011	1033	CS	Members of Greek life more likely to report NMPSU and also have higher levels of anxiety.
DeSantis, Hane 2010	175	CS	Examines justifications for misuse. The top arguments students used for justification were 1) comparison-and-contrast, 2) all-things-in-moderation, 3) self-medicating, and 4) minimization arguments

Table 1 (* CS= college students, ICS= international college students, GS= graduate students, CSW= women only students, and PS= professional students such as pharmacy)

Dimensions of Religious Identity

Religiosity is a multidimensional concept that evaluates religious identity, importance, and attendance. While used in many fields, the measurements of religiosity have not been standardized, unlike stress and depression scale measurements. In order to better understand which aspects of religiosity have or have not been investigated in relation to prescription stimulant misuse, measures used in reviewed articles have been classified into two main categories. These categories are religious affiliation and religious importance.

Religious affiliation refers to identification within a specific religious group (e.g. Catholic, Jewish, Muslim, Protestant, Buddhist, etc.) or denomination (e.g. Episcopalian, Presbyterian, Evangelical, etc.). Around 14% of the articles review (n=7) measured this dimension. It should be noted that identification within a

specific religious group does not correlate with attendance or importance of religion in one's life.

Religious Importance refers to the self-assessment of how important religion is to one's life. This is measured through self-assessment, religious attendance, and involvement within religion. Studies used questions such as: "how often do you attend religious events", "how important is religion in your life", and "how religious do you consider yourself to be", to measure this aspect (Bavarian, 2012; Palamar, Kiang, and Halkitis, 2014; Snipes et al., 2014; Rosenberg et al., 2012; Griodano et al. 2015).

Dimensions of Stress

There are many dimensions to what stress is and what causes it, including physical (danger, physical work, etc.) and mental stress (academic work, relationships, performance, etc.). Stress is "where an environmental demand exceeds the natural regulatory capacity of an organism, in particular situations that include unpredictability and uncontrollability" (Koolhass et al. 2011). Majority of the studies, (n=39), reviewed examined stress and measure it with established stress scales, such as the perceived self-stress scale, and investigate academic level and academic curriculum rigor. All studies reviewed that evaluated stress in the form of academic work (such as hours spent studying, competitiveness of school, hours spent studying, etc.) For this review multiple dimensions were selected as measurement criteria.

Academic level/curriculum rigor looks at the academic standing of a college or university and compares it to others. Schools that have higher academic standards are more likely to place a higher amount of stress on individuals. However that does not mean that the rate of prescription drug misuse necessarily differed between those who attend higher-level academic schools and those who attend lower level academic school. The majority of the articles focused on evaluating this relationship through scales such as the perceived self stress scale (PSS4, PSS 9, etc).

Employment is another aspect of life that can cause stress to students while at college. Miller, Danner, and Staten found that 57% of college students work while attending college (Miller, Danner, and Staten, 2010). It was also found that students who worked more than 20 hours a week were significantly more likely to binge drink, sleep less, and have a lower academic performance than students who worked less than 20 hours (Miller, Danner, and Staten, 2010). Many students need to find secondary forms of income while in college to help pay for living expenses. This can create stress because it is time consuming and many students work either part-time or, in some cases, full-time while also being a full-time student. The articles reviewed did not specifically investigate this dimension of stress as a reason for potential prescription stimulant misuse. However it should be considered for future research.

Of the articles reviewed, approximately 82% (n=39) evaluated stress and its relationship to prescription stimulant misuse. Stress management, or coping with high amounts of academic stress or large academic workloads, was one of the main motives

identified by those who misused prescription stimulant medication. Students identified that they misused prescription stimulants in order to help study, focus, and in order to increase concentration on schoolwork, which was identified as a stressor to students (DeSantis, Hane, 2010; DeSantis, Noar, and Webb, 2010; McCabe, West, Teter, and Boyd, 2014). This shows that students are misusing prescription stimulants as a way to cope with stress, specifically academic stress. One study also found that during periods of high academic stress, such as midterms and finals, students were more likely to misuse during these periods based on using twitter to tweet about prescription stimulants (Hanson et al., 2013). The results were gathered by either looking for hash tags related to prescription stimulants, or prescription stimulants to be in the main text (also searched brand names such as Adderall). A hash tag is a way for twitter users to find tweets related to these, or related to a topic. It does this by creating a category group that a user can click on and see all public tweets that used that specific hash tag. This study showed that students were not only discussing prescription stimulants, but were also discussing NMPSU or looking to find prescription stimulants. In one tweet a twitter user asked where they could obtain Adderall and with the hash tag desperate (Hanson et al., 2013).

Dimensions of Depression

Major Depressive disorder, as defined by the DSM-V, is someone who presents with depressed mood or a lack interest in daily activities for more two weeks. However someone can experience depression like symptoms or be depressed without being diagnosed as with major depressive disorder. Characteristics of depression, or depression

like symptoms include, depressed mood or irritability, decreased interest or pleasure, significant weight change or appetite, change in sleep habits, change in activity levels, fatigue or loss of energy, guilt or worthlessness, decreased concentration, and or suicidal thoughts. In order to be diagnosed with major depressive disorder one must present with at least five of the common symptoms associated with depression. People can also experience isolated single depression episodes or episodes that are based on the seasons of the year. College students are more likely to experience single isolated episodes, but seasonal depression and major depressive disorder are present in the collegiate population. For this review depression scales such as the Beck depression scale and other depression inventory scales were used to measure depressive symptoms in college students and students were also asked about prevalence to misuse prescription stimulants. Many of the articles that study stress also evaluated depression (n=17).

Discussion

Several observations can be drawn from this overview of 46 peer-reviewed articles. While higher levels of religiosity, religious identification, and when higher importance is placed on religion have been associated with decreased risk of substance abused, with prescription stimulants there contradictory results. Some articles stated there was little to no relationship while others attributed an increased risk for those who identified with certain faiths. This can be attributed to the fact that college students do not attribute misusing prescription stimulants the same was as taking illicit drugs or drinking. Many college students' attitudes toward

prescription stimulant misuse were apathetic or even in favor of it. Many believed that misusing prescription stimulants was not a health risk, a moral or ethical problem, and many thought it was socially acceptable to do so. In some cases certain religious groups were even found to be more at risk than others, specifically agnostics (Palamar, Kiang, Halkitis, 2012). Bavarian found that increased religious activity was associated with a decrease of 33.84 % to misuse prescription stimulant medication. Research does not explain this conflicting report and more research is needed to evaluate the relationship between religion and prescription stimulant misuse.

There is a high correlation between stress levels and the likelihood of misusing prescription stimulant medication. Many college students expressed that one of the main motives for misuse was to handle academic stress or manage stress levels in general. Students who identified as either enrolled in academically challenged schools, or in academically challenged programs were not significantly more at risk of misusing prescription stimulants than those who did not identify at academically challenging schools or in academically challenging programs. There could be other underlying factors that could explain this however research primarily only focuses on academic workload and level. Further research is needed to see if other factors such as jobs, multiple majors, and other factors are also contributing to the risk factor of prescription stimulant misuse.

Along with higher levels of stress, those who exhibit depression symptoms are more likely to misuse prescription stimulants than those who do not exhibit

symptoms. This can be attributed to the fact that many students claimed a motive for misusing prescription stimulants as a means to have more energy, be able to focus for longer periods, and to help increase concentration. Concentration and ability to focus are decreased when someone is either experiencing a depressive episode, exhibiting depressive symptoms, or is diagnosed with major depressive disorder. Some anti-depressants are used to treat ADHD and so students may and are using some prescription stimulants to self-treat for depression symptoms. More research is needed in ways to curb this behavior and also to study depression symptoms and its relation to prescription stimulant medication alone. Majority of the articles that investigated depression symptoms did so along with other factors such as stress.

Majority of the research comes from cross-sectional studies that either use surveys or interviews to acquire data. Majority of the research out there studies the motives for prescription stimulant misuse in relation to stress and depression. Few articles study the relationship between religiosity and prescription stimulant misuse. Majority of religiosity and religious identification has been studied with alcohol and illicit drug use but few articles have distinctly examined the relationship to prescription stimulant medication misuse.

Priorities of Research

While there is a plethora of knowledge on the correlation of stress, depression, and prescription stimulant misuse it is not complete. Many of the articles only focus on academic stress in relation to risk of prescription stimulant misuse. Other factors such as

social and employment stress should be further investigated. The more knowledge about how all forms of stress and how it affects the risk of prescription stimulant misuse can assist colleges and students to create means to decrease the risk of misuse. For depression there is plenty of knowledge on the relationship of depression symptoms and the likelihood of misusing prescription stimulants, with some evidence to support student misusing to self-treat depression symptoms. However the research does not examine why exactly many believe that prescription stimulants are effective means for self-treatment. Is this because forms of anti-depressants are used to treat ADHD and students believe that because those drugs treat depression, prescription stimulants do the same thing? Or is it because students use prescription stimulants to treat symptoms associated with concentration, focus, and energy? Is it because prescription stimulants are more readily available than other prescription medications that students could use to self-treat? Or is it because students generally believe prescription stimulants to be safe to use even without a prescription? These factors should be addressed in future research.

Also there are few articles that study the relationship between religious identity and prescription stimulant misuse on its own. Many articles will examine it as a part of an investigation into all substance abuse, but the findings so far either contradict themselves or are not in line with other substance abuse patterns. Higher association with religion and religious importance in life decreases the risk of substance abuse, however the evidence for its relationship to prescription stimulants is that it either has no significant effect or in some cases certain religious groups are more likely to be at risk of misusing than others. Bavarian showed a negative relationship between religiosity and

prescription stimulant misuse, which was the more religious activities attended showed a decreased risk of prescription stimulant misuse. Bavarian showed a decreased use of prescription stimulant misuse at religious universities as compared to secular universities. However other studies showed a positive relationship between certain religious groups, e.g. agnostics, and prescription stimulant misuse (Palamar, Kiang, Halkitis, 2012). By increasing knowledge of how religion and prescription stimulant medication are related, we will better understand another factor of potential groups that may be at risk and how to help them. We do not understand if this apathetic view toward prescription stimulant medication misuse, which differs from other substance misuse views of religious persons, is due to the fact that students generally view prescription stimulant misuse as safe and sociably acceptable. By understanding this phenomenon more, programs of awareness can be created and current programs can be improved to help decrease the prevalence of prescription stimulant misuse.

Limitations

Limitations of this review must be considered when evaluating the findings. This review is based on peer-reviewed articles published between 2010-2015 that were identified through specific search engines and databases. Articles published before 2010 were not considered and also non-empirical studies were not included in this review, because the purpose of this review was to evaluate recently published empirical studies. Also unpublished studies could not be included, which could mean that some findings are underrepresented. The search topics were also limited which also caused for many articles to be excluded. Because of these factors, only 49 articles were able to be

reviewed and discussed. Boarding search topics and date range could provide a wider selection of article to review, however as the goal of this review was for literature published within the past five years, this should also be taken into consideration.

This review is meant as a review of broad characteristic methodological traits and general findings. This was not intended to serve as a meta-analysis. Findings reported in this review are not meant to inform of magnitude of effects as presented in meta-analyses, instead only to inform of statistically significant evidence and effects.

Also many articles were excluded because the target population was not college-aged students (both graduate and undergraduate students worldwide were considered for inclusion). Many studies that examined the different relationships either focuses on adolescents (such as in high school), older adults (e.g. in the medical field or teachers at universities), or in young adults that were not enrolled in a college or university. Also many studies were excluded because they focused on diversion rates of misuse rates and did not examine one of the reviewed relationships. This could cause findings to be underrepresented.

Summation

The primary objective of this study was to review current literature, published between 2010-2015, of the relationships between religious identity, stress, and depression to prescription stimulant misuse in college aged students and to identify necessary methodical task that can help improve to advance knowledge in this field. The association between stress, depression, and prescription stimulant misuse is well established however not all paths of understanding have been explored. What other

factors cause stress that can lead to prescription stimulant misuse other than academic stressors? What is causing students to use prescriptions stimulant medications to self-treat for depressive symptoms? There is also a lack of research on the relationship between religious identity, or religiosity, and prescription stimulant medication. Most finds of the relationship between religion and prescription stimulant medication either contradict similar findings with other substances, or contradicts findings within the relationship of prescription stimulant misuse and religion. In order to address these contradictions, more research is needed to provide a great depth of knowledge.

BIBLIOGRAPHY

- Afandi, O., Hawi, H., Mohammed, L., Salim, F., Hameed, A. K., Shaikh, R. B., ... & Khan, F. A. (2013). Sleep Quality Among University Students: Evaluating the Impact of Smoking, Social Media Use, and Energy Drink Consumption on Sleep Quality and Anxiety. *Student Pulse*, 5(06).
- Bavarian, N. (2012). The illicit use of prescription stimulants on college campuses: a theoretical examination.
- Betancourt, J., Ríos, J. L., Pagán, I., Fabián, C., González, A. M., Cruz, S. Y., ... & Palacios, C. (2013). Non-medical Use of Prescription Drugs and its Association with Socio-demographic Characteristics, Dietary Pattern, and Perceived Academic Load and Stress in College Students in Puerto Rico. *Puerto Rico health sciences journal*, 32(2).
- Bidwal, M. K., Ip, E. J., Shah, B. M., & Serino, M. J. (2014). Stress, Drugs, and Alcohol Use Among Health Care Professional Students A Focus on Prescription Stimulants. *Journal of pharmacy practice*, 0897190014544824.
- Bossaer, J. B., Gray, J. A., Miller, S. E., Enck, G., Gaddipati, V. C., & Enck, R. E. (2013). The use and misuse of prescription stimulants as “cognitive enhancers” by students at one academic health sciences center. *Academic medicine*, 88(7), 967-971.
- Clegg-Kraynok, M. M., McBean, A. L., & Montgomery-Downs, H. E. (2011). Sleep quality and characteristics of college students who use prescription psychostimulants nonmedically. *Sleep medicine*, 12(6), 598-602.
- DeSantis, A. D., & Hane, A. C. (2010). ““Adderall is Definitely Not a Drug””: Justifications for the Illegal Use of ADHD Stimulants. *Substance Use & Misuse*, 45(1-2), 31-46.
- DeSantis, A., Noar, S. M., & Webb, E. M. (2010). Speeding through the frat house: A qualitative exploration of nonmedical ADHD stimulant use in fraternities. *Journal of Drug Education*, 40(2), 157-171.
- Dietz, P., Striegel, H., Franke, A. G., Lieb, K., Simon, P., & Ulrich, R. (2013). Randomized response estimates for the 12- month prevalence of cognitive-enhancing drug use in university students. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 33(1), 44-50.

- Dussault, C. (2011). Non-medical prescription stimulant use among sorority and fraternity college populations: Relationship with psychological variables.
- Dussault, C. L., & Weyandt, L. L. (2011). An examination of prescription stimulant misuse and psychological variables among sorority and fraternity college populations. *Journal of attention disorders*, 1087054711428740.
- Ford, Jason A., and William C. Watkins. "Adolescent nonmedical prescription drug use." *Prevention Researcher* 1 (2012): 3-6.
- Forlini, C., Schildmann, J., Roser, P., Beranek, R., & Vollmann, J. (2014). Knowledge, Experiences and Views of German University Students Toward Neuroenhancement: An Empirical-Ethical Analysis. *Neuroethics*, 1-10.
- Gallucci, A. R. (2011). A survey examining the nonmedical use and diversion of prescription stimulant medications among college students using the theory of planned behavior.
- Gallucci, A. R., Martin, R. J., & Usdan, S. L. (2014). The Diversion of Stimulant Medications Among a Convenience Sample of College Students With Current Prescriptions.
- Giordano, A. L., Prosek, E. A., Reader, E. A., Bevly, C. M., Turner, K. D., LeBlanc, Y. N., ... & Garber, S. A. (2014). Collegiate Misuse of Prescription Stimulants: Examining Differences in Self-Worth. *Substance use & misuse*.
- Giordano, A. L., Prosek, E. A., Daly, C. M., Holm, J. M., Ramsey, Z. B., Abernathy, M. R., & Sender, K. M. (2015). Exploring the relationship between religious coping and spirituality among three types of collegiate substance abuse. *Journal of Counseling & Development*, 93(1), 70-79.
- Hanson, C. L., Burton, S. H., Giraud-Carrier, C., West, J. H., Barnes, M. D., & Hansen, B. (2013). Tweaking and tweeting: exploring Twitter for nonmedical use of a psychostimulant drug (Adderall) among college students. *Journal of medical Internet research*, 15(4).
- King, R., & Jun, M. Results of the Indiana College Substance Use Survey.
- Koolhaas, J. M., Bartolomucci, A., Buwalda, B., De Boer, S. F., Flügge, G., Korte, S. M., ... & Fuchs, E. (2011). Stress revisited: a critical evaluation of the stress concept. *Neuroscience & Biobehavioral Reviews*, 35(5), 1291-1301.
- Levinson, J., & McKinney, K. A. (2013). Consuming an edge: ADHD, stimulant use, and psy culture at the corporate university. *Transcultural psychiatry*, 50(3), 371-396.

- Maahs, J. R., Weidner, R. R., & Smith, R. (2014). Prescribing Some Criminological Theory An Examination of the Illicit Use of Prescription Stimulants Among College Students. *International journal of offender therapy and comparative criminology*, 0306624X14548530.
- McCabe, S. E., West, B. T., Teter, C. J., & Boyd, C. J. (2014). Trends in medical use, diversion, and nonmedical use of prescription medications among college students from 2003 to 2013: Connecting the dots. *Addictive behaviors*, 39(7), 1176-1182.
- McCauley, J. L., Amstadter, A. B., Macdonald, A., Danielson, C. K., Ruggiero, K. J., Resnick, H. S., & Kilpatrick, D. G. (2011). Non-medical use of prescription drugs in a national sample of college women. *Addictive behaviors*, 36(7), 690-695.
- Miller, K., Danner, F., & Staten, R. (2008). Relationship of work hours with selected health behaviors and academic progress among a college student cohort. *Journal of American College Health*, 56(6), 675-679.
- Oberleitner, L. M., Tzilos, G. K., Zumberg, K. M., & Grekin, E. R. (2011). Psychotropic drug use among college students: patterns of use, misuse, and medical monitoring. *Journal of American College Health*, 59(7), 658-661.
- ONG, J. (2011). SOCIAL LEARNING AND GENERAL STRAIN THEORIES' RELATIONSHIP WITH PRESCRIPTION STIMULANT MISUSE FOR ACADEMIC PURPOSES AMONG COLLEGE STUDENTS.
- Palamar, J. J. (2012). A pilot study examining perceived rejection and secrecy in relation to illicit drug use and associated stigma. *Drug and alcohol review*, 31(4), 573-579.
- Palamar, J. J., Kiang, M. V., & Halkitis, P. N. (2014). Religiosity and exposure to users in explaining illicit drug use among emerging adults. *Journal of religion and health*, 53(3), 658-674.
- Ponnet, K., Wouters, E., Walrave, M., Heirman, W., & Van Hal, G. (2014). Predicting Students' Intention to use Stimulants for Academic Performance Enhancement. *Substance use & misuse*.
- Rabiner, D. L., Anastopoulos, A. D., Costello, E. J., Hoyle, R. H., & Swartzwelder, H. S. (2010). Predictors of nonmedical ADHD medication use by college students. *Journal of attention disorders*, 13(6), 640-648.

- Rosenberg, H., Bonar, E. E., Pavlick, M., Jones, L. D., Hoffmann, E., Murray, S., ... & Baylen, C. (2012). Associations Between University Students' Reported Reasons for Abstinence From Illicit Substances and Type of Drug. *Journal of College Student Development*, 53(1), 91-105.
- Rozenbroek, K., & Rothstein, W. G. (2011). Medical and nonmedical users of prescription drugs among college students. *Journal of American College Health*, 59(5), 358-363.
- Sattler, S., Sauer, C., Mehlkop, G., & Graeff, P. (2013). The rationale for consuming cognitive enhancement drugs in university students and teachers. *PloS one*, 8(7), e68821.
- Sattler, S., & Wiegel, C. (2013). Cognitive test anxiety and cognitive enhancement: the influence of students' worries on their use of performance-enhancing drugs. *Substance Use & Misuse*, 48(3), 220-232.
- Schelle, K. J., Olthof, B. M., Reintjes, W., Bundt, C., Gusman-vermeer, J., & Van_mil, A. (2015). A Survey of Substance Use for Cognitive Enhancement by University Students in the Netherlands. *Name: Frontiers in Systems Neuroscience*, 9(10).
- Silva, K., Kecojevic, A., & Lankenau, S. E. (2013). Perceived drug use functions and risk reduction practices among high-risk nonmedical users of prescription drugs. *Journal of drug issues*, 43(4), 483-496.
- Snipes, D. J., Jeffers, A. J., Benotsch, E. G., McCauley, J., Bannerman, D., Granger, C., & Martin, A. M. (2014). Religiosity in the non-medical use of prescription medication in college students. *The American journal of drug and alcohol abuse*, (0), 1-7.
- Teter, C. J., Falone, A. E., Cranford, J. A., Boyd, C. J., & McCabe, S. E. (2010). Nonmedical use of prescription stimulants and depressed mood among college students: frequency and routes of administration. *Journal of substance abuse treatment*, 38(3), 292-298.
- THOMAS, M. A. (2013). HOW SYMPTOMS OF ANXIETY, DEPRESSION, ATTENTION DEFICIT DISORDER (ADD) OR ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) CONTRIBUTE TO STUDENTS SELF-MEDICATING VIA MARIJUANA AND NON-MEDICAL PRESCRIPTION DRUGS.
- Underhill, B., & Langdon, S. (2013). Licit and illicit use of prescription psychostimulants in upperclassmen and alumni. *Journal of Alcohol & Drug Education*, 57(2), 7.

- Varga, M. D. (2012). Prescription Stimulant Use by Graduate Students.
- Vegh, D. T. (2011). College students and the illicit use of prescription drugs: a test of general strain theory.
- Verdi, G. (2013). Academic and Psychological Factors in Non-Medical Prescription Stimulant Use in Graduate Students.
- Verdi, G., Weyandt, L. L., & Zavras, B. M. (2014). Non-Medical Prescription Stimulant Use in Graduate Students Relationship With Academic Self-Efficacy and Psychological Variables. *Journal of attention disorders*, 1087054714529816.
- Vidourek, R. A., King, K. A., & Knopf, E. E. (2010). Non-medical prescription drug use among university students. *American Journal of Health Education*, 41(6), 345-352.
- Vo, K. M. (2013). Self-Medication Practices of Undergraduate College Students: Non-Medical Prescriptive Stimulant Use.
- Vrecko, S. (2014). Everyday drug diversions: A qualitative study of the illicit exchange and non-medical use of prescription stimulants on a university campus. *Social Science & Medicine*.
- Watkins, W. C. (2012). Prescription Drug Misuse Among College Students: An Examination of Sociological Risk Factors.
- Weyandt, L.L., Janusis, G., Wilson, K.G., Verdi, G., Paquin, G., Lopes, J. et al. (2009). Nonmedical prescription stimulant use among a sample of college students. *Journal of Attention Disorders*, 13(3), 284-296.