

# Nonmedical Use of Prescription Stimulants in Dental Hygiene Programs: Guidelines for prevention strategies

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## Abstract

Nonmedical use of prescription stimulants (NPS), drugs frequently prescribed to treat Attention-Deficit/Hyperactivity Disorder (ADHD), is defined as the use of medications without a prescription or in a way that is inconsistent with a medical diagnosis. These pharmaceuticals are frequently prescribed to increase attentiveness, decrease distractibility, and improve daily functioning in individuals diagnosed with ADHD. While medically prescribed stimulants, including amphetamine, methylphenidate, and dextroamphetamine, have been shown to be safe and effective for improving the symptoms of ADHD, they have also been classified by the United States Food and Drug Administration (FDA) as schedule II, due to their high potential for abuse. With the increased matriculation of college students diagnosed with ADHD, the number of stimulants available on college campuses has risen substantially; and misuse of NPS is becoming a serious issue amongst college-aged students, including those in health care professions. The most commonly reported reasons for NPS use among college students is to improve alertness and concentration while studying and to enhance overall academic achievement. Borrowing, sharing and selling prescription stimulants between peers and friends are the common routes for NPS diversion. Academic performance expectations in dental hygiene education programs can create a highly stressful environment increasing the susceptibility of dental hygiene students to NPS misuse. Dental hygiene education programs should promote an awareness of the ethical, legal and overall health harms of nonmedical use of prescription stimulants.

**Keywords:** stimulants, nonprescription stimulant use, ADHD, health risks, dental hygiene students, college students

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## Introduction

### *Scope of the Problem of Nonprescription Stimulant Use in Academia*

Nonmedical use of prescription stimulants (NPS), drugs frequently prescribed to treat Attention-Deficit/Hyperactivity Disorder (ADHD), is defined as using medications without a prescription or in a way that is inconsistent with a medical diagnosis.<sup>1</sup> The purpose of this short report is provide a brief review of the literature on NPS use in academia, the legal and ethical issues regarding NPS amongst dental hygiene students and suggested best practices for addressing NPS use in dental hygiene programs.

The most widely prescribed stimulant medications include amphetamine, methylphenidate, and dextroamphetamine.<sup>2,3</sup> Properly dosed, these medications increase attentiveness, decrease distractibility, and improve daily functioning and have been shown to be highly effective in the treatment of ADHD.<sup>3</sup>

While considered safe and effective treatment ADHD symptoms, this group of drugs are classified by the United States Food and Drug Administration (FDA) as schedule II, due to their high potential for abuse.<sup>4</sup> Recently the FDA required manufacturers to place a “black box” warning on the medications highlighting the potential for serious consequences resulting from misuse including “sudden death and serious cardiovascular events.”<sup>5</sup> Furthermore, the warning also identifies these drugs as having a “high potential for abuse” and warns against the possibility of individuals obtaining the medication for nonprescription use or distribution to other individuals.<sup>5</sup>

The prevalence of college students with a diagnosis of ADHD has been reported to range anywhere between 2% to 8% with prescription stimulants the first-line agents for treatment of the condition.<sup>6-10</sup> As the ability to diagnose and effectively treat ADHD has increased significantly over the last

twenty years, so has the availability of prescription stimulants on college campuses and NPS use, particularly among college students.<sup>9</sup> A study by Teeter et al. found that in a random sample of college students, 8% reported NPS use at least once in their lifetime, and nearly 6% had reported NPS in the past year,<sup>11</sup> however, Weyand et al. reported rates as high as 55%.<sup>6</sup> Garnier et al. reported that nearly two-thirds of college students had been offered prescriptions for nonmedical use and nearly one-third reported NPS use by their fourth year of school.<sup>8</sup>

Research has shown the illicit use of stimulant medications is more prevalent among traditional students ranging from 18 to 24 years of age than among nontraditional students over the age of 25 years.<sup>4</sup> It is also noteworthy that NPS use is not limited to college campuses in the United States (U.S.); increasing numbers of stimulant prescriptions globally has led to growing concerns regarding misuse in European countries as well as in Canada, Australia and Israel.<sup>12</sup> While much of the research on NPS use in young adults has been conducted on the general college student population,<sup>6</sup> several studies have been conducted regarding use among medical students with lifetime use prevalence estimates ranging from 9% to 18%.<sup>13</sup> Nonmedical use of prescription medications, specifically stimulants in addition to illicit drug was surveyed among health care professional students (medical, physician assisting and pharmacy) in the state of California.<sup>13</sup> Nonmedical stimulant use was highest in physician assisting students (14%) followed by medical students (10%) and pharmacy students (6%).<sup>13</sup> Reported NPS use amongst fourth year dental and senior dental hygiene students was found to be 12% in a population of students surveyed from the south-central region of the U.S.<sup>14</sup>

In general, college students engaging in NPS use frequently cite the need for an academic advantage as a reason for using stimulants without a prescription.<sup>1</sup> In the study by Teeter et al, students believed that stimulants would enhance concentration, assist with studying, and improve concentration.<sup>11</sup> However, in spite of the widely held student perception that NPS use increases academic performance and that stimulants are being used by the best students, a number of studies have questioned this assumption.<sup>15</sup> Research has shown that college students engaging in NPS tend to have lower-grade point averages than non-users and did not demonstrate any detectable academic advantages over their peers.<sup>1,9,11</sup> Another noteworthy finding from studies focusing NPS use in the general college student population, is the association of NPS use combined with heavy alcohol consumption and other illicit drugs.<sup>9,11</sup>

In the study of NPS use among dental and dental hygiene students, the highly competitive, stressful school environment was considered a risk factor for using stimulants non-

medically.<sup>14</sup> However, of the 12% of the respondents who reported NPS use, improved attention/concentration was cited by the majority (70%), followed by recreation (17%) and higher grades (13%) and there were no statistical associations between stress levels and NPS use in the population surveyed.<sup>14</sup> In the study of health care professional students, a desire to “improve concentration/help focus” was cited as an important reason for NPS use.<sup>13</sup>

Drug diversion, the sharing, trading or selling of prescription medications among friends and peers, is the most common sources of NPS.<sup>3</sup> A study of college students found that in a sample population of students with an ADHD diagnosis, over one-half (61%) had diverted their medications to someone without a prescription.<sup>8</sup> In the McNeill et al. study of dental and dental hygiene students, 87% of the students engaged in NPS use and had obtained the medications from their friends.<sup>14</sup> Classmates and friends were also cited as the primary sources of prescription stimulants by health care professional students.<sup>13</sup> While there are ongoing concerns about future substance abuse and possible side effects including cardiovascular reactions and health complications related to NPS use, it is also important to emphasize the legal ramifications of drug diversion.<sup>15,16</sup> Individuals are often unaware that it is illegal to sell or give away controlled substances, including prescription medications. Conversely, it is also illegal to obtain drugs that are outside of one’s own medical prescription.<sup>15</sup>

### ***Addressing Nonprescription Stimulant Use in Dental Hygiene Education***

National studies have drawn attention to the problem of NPS on college campuses. While the literature on illicit NPS use among dental and dental hygiene students is limited to the McNeill et al. study,<sup>14</sup> the general concerns regarding legal issues, future addiction, substance abuse and health complications in college student populations, should be taken into consideration in dental hygiene education programs.<sup>3,5-8</sup> It is important to be aware of the overall prevalence of NPS use within the culture of the individual institution as a whole, in addition to developing departmental policies.<sup>15,16</sup> A majority of health care students (87%) reported being aware that stimulants were being used at their institutions to enhance academic performance and over two-thirds (67%) believed that faculty were aware of the NPS use.<sup>13</sup> Universities should have clearly stated policies on drug diversion and the nonmedical use of prescribed controlled substances such as prescription stimulants and consequences for illegal behavior should be clearly spelled out in student handbooks.<sup>15</sup> Dental hygiene programs can mirror institution wide policies on

substance abuse in their individual departmental policy manuals.

In addition to addressing NPS use in university and departmental policy manuals, there are a number of ways the ethical and legal issues surrounding NPS use can be addressed within the context of the curriculum. The American Dental Hygienists' Association (ADHA) Code of Ethics for Dental Hygienists, can be used as a framework for discussing ethical dilemmas related to NPS use.<sup>17</sup> Beginning with the basic premise of professional responsibility, stating that dental hygienists are responsible for maintaining a lifestyle that supports optimal health, students could discuss the impact of drug misuse on general health along with the legal and ethical ramifications of drug diversion. As future health care providers, students engaging in NPS use are violating ethical principles that apply to all health care providers. The core value of societal trust, comes into question when an individual chooses to illegally divert a drug or misuse a prescription medication. Addressing issues related to commonly held perception that NPS use is acceptable and safe behavior can be included in the context of the class discussion focused on professional ethical behavior.<sup>15,16</sup> Veracity comes into question when one engages in obtaining and using a prescription drug illegally. Harming one's self through the health risks associated with NPS use violates the value of non-maleficence in that NPS use, while caring for patients, may increase their risk for harm.

Self-medicating through NPS use can also be seen from the moral perspective of performance enhancing drugs. In a study regarding the moral perspectives of NPS use by students, Verster and van Niekerk found that the cognitive enhancement therapies gained through prescription stimulants were considered to be acceptable for individuals with an attention deficit disorder.<sup>18</sup> However, prescription stimulant use by individuals with the goal of cognitive enhancement was considered cheating, allowing users an unfair advantage and raises ethical issues similar to those encountered in athletics.<sup>18</sup>

Many dental hygiene programs engage in white coat ceremonies in which students officially receive a white coat before they begin to care for patients symbolizing their entrance into the health care profession. This rite of passage may include the reading of an oath and the acceptance of the professional responsibilities of becoming a health care

professional. NPS diversion and use breaks the fidelity to this promise. However, since many health care professional students engage in NPS use for academic purposes, rather than to obtain a high as with other illicit drugs, they often overlook the implications of abusing a schedule II, controlled medication.<sup>13,19</sup>

Possessing a controlled substance without a valid prescription is a violation of the law and individuals found to be guilty may be sentenced to serve a term of imprisonment of not more than 4 years.<sup>19</sup> Drug and alcohol convictions could result in being dismissed from a dental hygiene program. Previous convictions must be also be disclosed in dental hygiene licensure applications and may prevent a candidate from receiving a license to practice.

### **Best Practices**

There is a need for dental hygiene faculty members to better understand the rationale for NPS use amongst students and develop strategies to ultimately reduce the risks of prescription stimulant misuse in dental hygiene education programs. The nonmedical use of prescription drugs should be viewed within the larger context of the college or university substance abuse and mental health programs.<sup>15</sup> Incorporating NPS use into campus drug prevention initiatives begins the discussion on the fact that NPS use is just as illegal, unethical, and detrimental as any other illicit drug, and that the same consequences as outlined in the university policy manual apply to NPS use. This education can be done through online modules immediately following acceptance into dental hygiene school and/or during orientation.

The ethical and moral aspects of NPS use for the purpose of enhanced cognitive abilities should be considered in the institution's academic honesty policies and fall under the same category of disciplinary procedures as any other illicit substance. Dental hygiene programs can consider adding academic honesty statements incorporated into each examination. A sample academic honesty statement is shown in Figure 1. Dental hygiene students should understand that the consequences due to cheating will be the same, regardless of the method used.

**Figure 1. Academic honesty statement**

I attest to the following statements:
I will not use any non-instructor approved notes, or electronic device for assistance on this examination.
I will not receive any assistance from my peers on this exam, nor will I give any assistance to my peers on this examination.
I will not remove this examination from the room, nor will I discuss this examination with my peers who have not yet taken it.
I have not abused any prescription drugs or non-prescription drugs that may influence my performance on this examination.
I understand that that any form of academic dishonesty may be penalized to the full extent of the university in addition to failure of this examination.

It is imperative for students, faculty members, staff, and administrators, within dental and dental hygiene programs to become aware of the potential risks, legalities, and ethical issues with the misuse of stimulant medications and implement best practices in order to monitor NPS use and promote a drug-free environment.

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