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PSYCHOSTIMULANT USE AMONG COLLEGE STUDENTS

Batrisyia Rosieta Widanty

Correspondence: *batrisyiarw@gmail.com*
Internship Doctor Program (medical doctor) Rumah Sakit Islam Nashrul Ummah, Lamongan, Indonesia

REVIEW **OPEN ACCESS**

ABSTRACT

Introduction – Undergraduate students are transitioning to a learning curriculum, it's not unexpected that many of them are stressed out by academic and non-academic pressures. Many college students use psychostimulants, which are supplied legally or illegally, to cope with their pressures. College student consume coffee, which is known to contain caffeine, to remain awake for a longer period, improve their physical energy, and stay focused on their work. Furthermore, for academic purposes, students use psychostimulants. Although the number of college students who use psychostimulants without a prescription is modest, It's a form of drug addiction with potentially fatal effects.
Methods – The author uses journals with a range of 2011-2021 to discuss the use of psychostimulants in college students.
Results – Many college students consume caffeine, but studies show that they also use amphetamine non-medical prescription stimulants such as Adderall and methylphenidate, which are sold under the brand names Ritalin and Adderall.
Discuss – Students commonly take non-medical prescription stimulants for a variety of reasons, including improving focus, being more productive with academic activities, working more efficiently, and reducing distractions. Sleep deprivation, sadness, abnormal movements, hallucinations, tachycardia, and loss of appetite are all common adverse effects of psychostimulants.
Conclusion – Undergraduate students abuse psychostimulants because they can minimize their stresses and thus perform better in class. The usage of psychostimulants rises as the exam time approaches. Caffeine, a legal psychostimulant, has been found to improve alertness and concentration, allowing it to preserve cognitive performance that has deteriorated due to a lack of sleep.

Keywords: psychostimulant, college student, caffeine.

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INTRODUCTION

Due to the variations in curriculum and learning processes in high schools and universities, first-year (bachelor) students appear a demanding and difficult transition phase.[1] Psychological issues that arise as a result of academics are being addressed. Good mental health for positive coping techniques in relieving stress which is needed for worsening health to a decrease in quality of life in students.[2,3] Typically, students experience challenges in terms of academics, such as learning techniques during lectures, lecture assignments, a decreased IPK, and the semester credit unit system is decided by the achievement index.[4] Anxiety-induced stress causes visual distortions that obstruct individual learning by lowering memory and attention concentration. Anxiety can cause stress, that can interfere with daily activities.[1,2] However, it was discovered that student research used psychostimulants, both legally and illegally, to deal with the stressor.[5]

Caffeine is used by college students in the United States to increase alertness and attention. According to the National Sleep Foundation's research, 75-98% of the students consumed at least one caffeine-containing beverage per day, with 31% consumed more than two drinks per day.[6] 92% of students consumed caffeine last year to remain awake for a certain period, increase concentration, physical energy, and mood, and reduce stress. Undergraduate students surveyed consumed an average of 159 mg and 173 mg of caffeine per day, with people aged 19-30 years consuming the highest, notably females.[7] Because caffeine's structure is similar to that of adenosine, it acts as an adenosinergic receptor antagonist and can stimulate the central nervous system depending on the dose. Its fat and water soluble properties cause it to be rapidly distributed to all tissues throughout the body, including brain receptors because caffeine can cross the blood-brain barrier. Soda, tea, chocolate, and coffee are among the caffeine-containing beverages most regularly eaten by students. This psychostimulant is the most widely consumed worldwide and is marketed lawfully in the community.[6,8,9]

Psychostimulants that can help individual focus levels and improve performance for hours are the student's choice in helping their academic process[5]. Psychostimulants known to students and reported in the literature are methylphenidate, dexedrine, and amphetamines.[10] Reported non-prescriptive use of Ritalin and Adderall alone or in combination with other illicit drugs. A study confirmed that college students used a type of amphetamine, namely Adderall. Abuse of drugs that should be prescribed for attention deficit hyperactivity disorder, its use peaks during the college final exams.[11] In the National Survey on Drug Use and Health, 6.4% of college

students aged 18-22 abused Adderall in the past year. A contributing factor in the misuse of prescription stimulant drugs in college students is the perception that their peers use drugs for academic gain, so they do not want to lose academic competition with their colleagues.[12]

Psychostimulants which are known as "smart drugs" which are mostly used by students are methylphenidatewith reasons to help academic performance, especially when doing assignments or exams, reduce fatigue, improve concentration and memory, social skills, reduce depressant effects, and a small part is used as an appetite suppressant.[10,13] The expensive type of psychostimulant modafinil affects many who choose methylphenidate for consumption, the increase in the use of psychostimulant substances in students and prospective students who will enter university due to course pressure to social encouragement for good academic achievement.[10]

This literature aims to determine the purpose or reasons, factors for using psychostimulants, benefits or effects as well as side effects and risks of undergraduate students using psychostimulants without medical indications.

METHOD

Researchers used the literature review method to collect national and international journals with the keywords "student", "psychostimulant", "caffeine", "Amphetamine", and "Metylphenidate". The journals obtained are then selected that meet the criteria. Literature used is limited in 2011-2021.

RESULT

There are positive effects when dealing with pressure that may be managed properly, as well as negative effects that can lead to stress. Stressors that cause frustration, conflict, and self-change are used as reasons of smoking, using stimulants, alcohol, partying, and using illegal drugs, as well as suicidal tendencies, that can harm themselves and others.[14,15]

The purpose of using non-medical use of prescription stimulants (NMUPS) among college students is for cognitive enhancement.[16] Reasons for using caffeine included staying awake (79%); enjoy the taste (68%); social aspects of consumption (39%); increase concentration (31%); increase physical energy (27%); improve mood (18%); and reduce stress (9%)[7]. According to research conducted on students at the University of the Netherlands, the use of stimulant drugs for non-medical reasons was 4.8% and for special purposes cognitive improvement is 0.6%, As a result, it might be inferred that there is still a purpose for usage that is not medically justified.[16]

Research in Brazil in 2019 stated the reasons for using methylphenidate, among others, to increase concentration, increase waking time to improve academic achievement. Brazil is the second largest consumer of methylphenidate in the world.[10] College students can get psychostimulants through their friends and family.[13]

The top five motivations for using psychostimulants, according to a 2020 research, were to improve concentration (64.4%), be more productive with academic work (61.6%), feel more focused (61.6%), work more efficiently (54.8%), and reduce distractions(53.0%).[17]

DISCUSS

Factors and Purposes of using Psychostimulants in Undergraduate Students

Many undergraduate students experience academic and non-academic pressures such as difficulty dividing time between lectures and social activities. Furthermore, certain students who live far away from their parents are more likely to be stressed.

As in Elvie et al's research, respondent 1 said "on campus, these exams and academic requirements stress me. The exams that were taken together caused stress in me." Just as respondent 5 said today, the thing that stresses me the most is when I have to face many exams at once. This week I have four exams that stress me even more." The factor because the exam was found again in the expression of respondent 4 "the thing that triggers my stress the most is the exam, which even if I have tried hard during the exam but when it comes out the results are not commensurate with my efforts". Another stressor factor is also on the teacher, according to what respondent 2 said. "The new teacher is now stricter than before and the requirements are many.[3]

The Influence of Psychostimulants on the Cognitive of Undergraduate Students

According to research conducted by Johnston in 2014 and Jason in 2016, the prevalence of non-medical use of prescription stimulants (NMUPS) among college students was higher (9.6%) than among their peers who did not continue their studies (7.2%). This is because young people who are under pressure are more probable to use psychostimulant.[18–20]

The individual's attention is actively processing the limited amount of information available from the five senses, memory, and other cognitive processes in the cognitive system that requires concentration.[6]

Caffeine has the ability to effectively modulate state of mind. Caffeine consumption of 100 mg has positive effects on cognitive function, such as restoring awareness and attention and maintaining cognitive function that has decreased due to lack of sleep.[21] The psychostimulant effects of caffeine are divided into psychomotor activating effects and arousal-enhancing effects. Increased arousal in caffeine can suppress adenosine which plays a role in sleep homeostasis thus countering the effects of adenosine-mediated sleepiness in prolonged waking conditions, especially on A1R receptor activity related to the ascending arousal system. Meanwhile, the increase in psychomotor activity occurs because A2AR receptors in caffeine indirectly control the transmission of dopamine pathways in the brain.[9] Consumption of more than three cups of coffee can lead to improved performance and verbal memory skills in a short time and increase speed in completing tasks.[6]

Stimulants can assist individuals with ADHD improve cognitive attention, memory, self-control, and executive function, according to a 2016 research. Students also demonstrate a significant influence on autonomic responses and a cognition improvement effect. Aderral has minimal effect on healthy college students neurocognitive performance, but a great effect on activated positive emotions and autonomic activity.[22]

Side Effects and Risks of Psychostimulants

Academic motives cause concern in the use of psychostimulants among students because it is a normative behavior. This causes drug abuse and dependence and in the health sector stimulant drugs have a negative effect. In the short term it will increase blood pressure and pulse, narrow blood vessels, increase blood pressure and at high doses cause very high body temperature, irregular pulse, heart disease, and seizures. Whereas in the long term it causes psychosis, irritability, paranoia, risk of HIV, hepatitis, other infectious diseases through needles and withdrawal symptoms, users will experience depression, abnormal movements or stiffness, hallucinations, changes in mood and behavior and sleep problems.[23]

Psychiatric and neurological consequences of methylphenidate overdose are comparable to sympathomimetic agents, such headache, agitation, depression, abnormal movements or stiffness, changes in mood or behavior, hallucinations, and paranoia. Hypertension, tachycardia, arrhythmias, and chest pain are the most common cardiovascular symptoms, whereas the most common gastrointestinal manifestations are nausea and stomach pain.[24]

According to research by Kathleen et al, the use of non-medical prescription stimulants (NMPS) had a prevalence of 10.6% and among NPMS users, 46.4% used NMPS concurrently with alcohol in the past year. It was found that the concomitant use of NMPS with alcohol had a worse effect than taking NMPS alone.[20] Stimulants (amphetamine and methylphenidate) combined with alcohol will add to alcohol depressants resulting in alcohol overdose and increased blood pressure.[23] Amphetamine (Adderall) use has been linked to a higher risk of morbidity and death, with sleep deprivation and loss of appetite being the most prevalent adverse effects.[7]

Side effects of psychostimulants have been reported more frequently in users who are prescribed than those who are not. In women, the side effects are appetite, somatic, and anxiety, while in men the side effects are loss of sexual desire and sweating.[25] In the 2020 study, bad experiences related to the use of psychostimulants were found, namely difficulty sleeping (54.3%), not feeling hungry (52.1%), feeling restless (30.6%), feeling anxious (30.9%), and feeling anxious. restless and unsteady (30.9%).[17]

CONCLUSION

Data from journals on using psychostimulants by undergraduate students was discovered, although the fact that a number of users was small compared to those who did not use psychostimulants. Undergraduate students abuse psychostimulants on the grounds that they can minimize their stresses and thus perform better in class. The usage of psychostimulants rises as the exam time approaches. Caffeine, a legal psychostimulant, has been found to improve alertness and concentration, allowing it to preserve cognitive performance that has deteriorated due to a lack of sleep. Meanwhile, the most commonly used illegal psychostimulants by students are amphetamines (Adderall) and methylphenidate (Ritalin), which have a slight impact on neurocognitive function but a great influence on positive emotions and autonomic activity.

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