

## Substance Abuse and Stress Levels in Canadian University Students

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### Abstract

**Background:** University students often report feeling intense stress, high anxiety, depressive feelings, low self-esteem, suicidal ideation, and substance abuse. This study examined correlations of student stress levels to their abuse of alcohol and non-prescription drugs.

**Materials and Method:** A total of 100 Canadian university students (mean age 20.2 years, SD=2.5, 33 males, 67 females) participated in an internet survey. They all completed a 30-item questionnaire dealing with their use of alcohol or non-prescribed drugs "to cope" with the stress of studying and exams, and with symptoms such as nightmares, depression, feelings of "being better off dead," and low self-esteem. The questionnaire also assessed the extent of positive attitude to professors and the pride in or contentment with the social status as a university student.

**Results:** High proportions of students reported use of alcohol (76%) or of non-prescribed drugs (83%) to cope with the stress of university life. Only 6% of the students indicated that they used neither alcohol nor non-prescribed drugs.

Total scores on the Student Stress Questionnaire were significantly correlated with reports of substance abuse: higher level of stress was reported by students using alcohol ( $r=.51$ ) or non-prescribed drugs ( $r=.50$ ). The substance abusing students more often reported feeling depressed, worthless, useless, and being better off dead, and they had more often nightmares about exams or about uncompleted assignments (Pearson  $r$ s from .26 to .40).

**Discussion:** The high prevalence of the use of alcohol and non-prescribed drugs among university students is worrisome, but it also seems consistent with glorification of alcohol consumption both in contemporary films and in novels.

**Conclusions:** University students who abuse alcohol and/or non-prescription drugs report higher levels of academic stress in their lives.

**Keywords:** alcohol use, use of non-prescription drugs, university students, stress, nightmares, depression, self-esteem

### INTRODUCTION

Numerous studies show high prevalence of depression, anxiety, and of stress symptoms among university students. This is a public health problem not only in North-America [1], but also in countries

such as Mexico [2], China [3], Malaysia [4], Nigeria [5], Iran [6], and Turkey [7]. Students are an important population group for the economic future and for ensuring democracy around the world. In many students, the symptoms of depression, anxiety, and

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suicidal ideation may be linked to abuse of alcohol and non-prescription drugs. Media such as films or novels often depict substance abuse as an integral part of the students' lifestyle, with the protagonists serving as role models.

A New Zealand study conducted at the University of Otago compared the scores on the Alcohol Use Disorders Identification Test (AUDIT) [8] of university students to levels found in non-student group of the same age: among 18 to 23 year olds, the students' scores were, on average, 50–60% higher than those of their other age peers [9].

Already in the 1970s, a US study using the Michigan Alcoholism Screening Test (MAST) [10] determined that 29% of students on the small private college campus and 19% on the large state university campus scored more than 4 points, i.e., in the range indicating possible alcoholism [11]. The rates of drug abuse among college or university students are also alarmingly high. For example, a survey of students at a northeastern US university [12] about their use, misuse, and abuse of stimulant medication (primarily methylphenidate and variants) determined that 16% of respondents reported abusing or misusing stimulant medication, mainly Ritalin. Drug abuse is likely to have a detrimental impact on the students' cognitive functioning, especially with certain categories of drugs. The same can be stated about

alcohol abuse. Recent studies show that binge drinkers among college students show weaker performance on cognitive tests of executive control/working memory [13].

The present study examined the rate and correlates of self-reports of alcohol abuse and of use of non-prescribed drugs to a questionnaire designed to measure students' level of stress in their university life [14].

### MATERIALS AND METHODS

A 30-item questionnaire was recently developed by Istasy, Elias, Raheb, and Cernovsky [14] to assess various aspects of perceived emotional stress in university students. This Student Stress Questionnaire (SSQ) was designed to provide an overview of student's signs of stress such as sleep problems or nightmares, perceived lack of emotional or therapeutic support at university, loneliness, low self-esteem, lack of pride in being a university student, and the absence of viewing professors as role models for oneself. This 30-item questionnaire (see the item text in Table 1) offers 5 possible responses: 1=very true, 2=true, 3=neither true nor false, 4=false, 5=very false. Scoring for 10 items was reversed for calculations of the total score (Items 4, 10, 14, 17, 19, 22, 24, 28, 29, and 30) so the higher total scores on the 30 items would indicate more intense emotional distress.

**Table 1.** *The Student Stress Questionnaire (SSQ)*

Item:	Very True	True	Neither nor	False	Very False
1. I feel anxious about upcoming exams.					
2. It seems that most professors do not like me.					
3. The studying for my classes is stressful.					
4. I admire my professors.					
5. I do not have any true friends at the university.					
6. I am a financial burden to my parents.					
7. Most professors do not care at all about the wellbeing of us, the students.					
8. If I compare myself to other persons, I feel useless.					
9. I have recently at least once drank alcohol to cope with the stress of university studies.					
10. I often feel happy to be at the university.					
11. My sleep is poor because I am too stressed out by the studies.					
12. I have nightmares about exams.					
13. I know that a student at our university committed suicide within the last 2 years.					

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14. I can talk more easily to my fellow students than to other persons of the same age.					
15. When I compare myself to others, I feel worthless.					
16. I have used non-prescribed drugs recently to cope with the university stress.					
17. The university studies are making a better person out of me.					
18. Depressive feelings often invade my mind.					
19. It would make me happy if I would learn to speak as elegantly and precisely as my professors do.					
20. At night, I have anxious dreams about not being able to complete (or about not having completed) the required assignments for my classes.					
21. At times, I feel I would be better off dead.					
22. The professors are my role models.					
23. Most students at our university suffer from the great pressure to pass their courses.					
24. Being a university student makes me feel proud of myself.					
25. Since I started at the university, I feel lonely.					
26. The university does not provide effective psychological help for me.					
27. When asked how I am, I usually lie that I feel OK.					
28. University students are the most intelligent group of young persons in this country.					
29. I feel closer to my professors than to any other adults (except perhaps for some members of my family).					
30. The university provides very good help for my struggles.					

An internet survey was conducted on students at three major universities in Ontario, Canada. Valid responses to all 30 items of the Student Stress Questionnaire were received from the total of 100 students. The average age of these students was 20.2 years (SD=2.5, range 18 to 30): 33 were males and 67 females.

### RESULTS

The mean total score on the SSQ was 94.7 (SD=17.3) and the range was 53 to 145, thus indicating that all of the students experienced some degree of stress. Almost all students (94%) indicated that they recently used either alcohol or non-prescribed drugs to cope with the stress.

#### Alcohol Use

The majority of the students (76%) endorsed Item 9 (*"I have recently at least once drank alcohol to cope with the stress of university studies"*) to indicate having recently used alcohol *"to cope with stress."* When the scores on the items 9 and 16 were subtracted from the total stress score, the alcohol use correlated moderately with the remaining stress score ( $r=.51$ ,  $p<.001$ , 1-tailed).

Those using alcohol more often reported feeling useless ( $r=.40$ ,  $p<.001$ , 1-tailed) or worthless ( $r=.35$ ,  $p<.001$ , 1-tailed). Students who used alcohol were somewhat more likely to report feeling lonely ( $r=.30$ ,  $p=.001$ , 1-tailed).

The use of alcohol was also significantly but weakly correlated with reports of exam nightmares ( $r=.26$ ,  $p=.005$ , 1-tailed) and reports of anxious dreams about incomplete assignments ( $r=.33$ ,  $p<.001$ , 1-tailed): the alcohol users had more anxious dreams. Such dreams are considered as important symptoms of Post-Traumatic Stress Disorder (PTSD).

Students who reported depressive feelings were more often those who indicated that they used alcohol ( $r=.42$ ,  $p<.001$ , 1-tailed).

Of special interest is the Item 21 (*"At times, I feel I would be better off dead"*). As reported elsewhere [14],

this item was endorsed by 52% of the students. Those who reported being better off dead were somewhat more likely to use alcohol ( $r=.39$ ,  $p<.001$ , 1-tailed).

Items 4, 19, 22, and 29 indicate good relationship to the professors and the same is also true about items 2 and 7 if the scoring of these two items is reversed. Added together, these 6 items can form an index of positive relationship to professors. Students with a good relationship with their professors were less likely to report using alcohol ( $r=-.17$ ,  $p=.043$ , 1-tailed).

As reported elsewhere [14], several items describe positive feelings about the university: often feeling happy to be at the university (item 10, endorsed by 28%), being able to talk more easily to fellow students than to other persons (Item 14, endorsed by 37%), pride of being a university student (Item 24, endorsed by 20%), viewing university students as the most intelligent group of young persons in this country (Item 28, endorsed by 48%), and noticing that university studies are making a better person out of me (Item 17, endorsed by 31%). These five items were added together to form an index of happiness & pride. The sum of the five items (i.e., the "happy & proud" index) was not significantly correlated with alcohol use ( $r=-.10$ ,  $p>.05$ , 1-tailed).

Reports of not having true friends at the university were not significantly correlated with alcohol use ( $r=.06$ ,  $p>.05$ , 2-tailed). With respect to gender, females were somewhat less likely to use alcohol ( $r=-.21$ ). In this group of university students, the reports of using alcohol "to cope" were not significantly correlated with age ( $p>.05$ , 2-tailed).

The alcohol use was significantly correlated with drug use ( $r=.46$ ,  $p<.001$ , 1-tailed): 69% of the students reported using both alcohol and non-prescribed drugs. As already mentioned, only 6% of the students reported that they used neither alcohol nor non-prescribed drugs.

### Use of Non-Prescribed Drugs

In response to Item 16 ("I have used non-prescribed drugs recently to cope with the university stress"), 83% of the students admitted to having used non-prescribed drugs to "cope with the stress." When the scores on the items 9 and 16 were subtracted from the total stress score, the drug use correlated moderately with the remaining stress score ( $r=.50$ ,  $p<.001$ , 1-tailed).

Students using non-prescribed drugs were more likely to report feeling useless ( $r=.31$ ,  $p=.001$ , 1-tailed) or worthless ( $r=.27$ ,  $p=.003$ , 1-tailed). Students who used the drugs were also somewhat more likely to report feeling lonely ( $r=.26$ ,  $p=.005$ , 1-tailed). Reports of not having true friends at the university (Item 5) were weakly correlated to use of non-prescribed drugs ( $r=.26$ ,  $p=.005$ , 1-tailed). Those without true friends somewhat often used non-prescribed drugs.

The use of non-prescribed drugs was significantly but weakly correlated with reports of exam nightmares ( $r=.27$ ,  $p=.003$ , 1-tailed) and reports of anxious dreams about incomplete assignments ( $r=.38$ ,  $p<.001$ , 1-tailed). The users of non-prescribed drugs had more frequently anxious dreams, i.e., possible symptoms of PTSD.

Students who reported depressive feelings were also more often among those who indicated that they used non-prescribed drugs ( $r=.45$ ,  $p<.001$ , 1-tailed). With respect to Item 21 ("At times, I feel I would be better off dead"), those who reported being better off dead were somewhat more often used likely to use non-prescribed drugs ( $r=.32$ ,  $p<.001$ , 1-tailed).

As reported elsewhere [14], more than a half of the students (57%) reported they considered the professors as role models. The perception of professors as role models was significantly but only very weakly correlated with not using non-prescribed drugs ( $r=-.17$ ,  $p=.040$ , 1-tailed).

Reports of a good relationship to professors (an index formed by items 4, 19, 22, and 29, and inversely scored items 2 and 7) were not significantly related ( $p>.05$ , 1-tailed) to using non-prescribed drugs ( $r=-.15$ ). With respect to the index of feeling "happy & proud" to be at the university (items 10, 14, 17, 24, 28), those more happy and proud of their status as university students were less likely to use non-prescription drugs ( $r=-.18$ ,  $p=.034$ , 1-tailed).

Reports of not having true friends at the university were weakly correlated to use of non-prescribed drugs ( $r=.26$ ,  $p=.005$ , 1-tailed). Those without true friends somewhat more often used non-prescribed drugs.

With respect to gender, females were somewhat less likely to report using non-prescribed drugs ( $r=-.24$ ).

In this group, the reports of using non-prescribed drugs were not significantly correlated with age ( $p>.05$ , 2-tailed).

### DISCUSSION

Our results are consistent with the findings of other authors [9, 11, 12] of large proportions of students relying, at least at times, on alcohol or non-prescribed drugs to cope with stress of their life at university. This substance misuse is likely, in the long run, to impair the student's capacity to maintain attentional focus in lectures, or on reading the textbooks, or on preparing assignments. The memory is also likely to be affected, as well as the executive functions [13].

As reported here earlier, only 6% of the students reported using neither alcohol nor non-prescribed drugs. This seems consistent with the presentation, in the films and TV shows, of alcohol and recreational drug use as glamorous, or entertaining, or as a sign of the "right lifestyle" to young adults. The media and the peer pressure may often become decisive but unconstructive role models.

The correlational trends found in this study are somewhat difficult to interpret because the causal direction is unknown. In many cases, the causal influence might be mutual rather than unilateral. It is noteworthy that students using alcohol and those using non-prescribed drugs also more frequently reported feeling depressed, useless, worthless, lonely, better off dead, and more frequently reported nightmares about exams and about uncompleted assignments. It is clear, however, that the causal impact could be bilateral. On the one hand, those stressed out by depressive feelings, loneliness, low self-worth, and anxious dreams might resort to alcohol or drugs. On the other hand, it is equally feasible that those using alcohol or drugs eventually find themselves in more stressful situations, and hence have more anxious dreams, begin to feel less competent and more useless or worthless.

Of major interest in such future correlational studies would be to collect separate data on each of the potentially misused non-prescribed drug. The drug choices by students might show variations overtime or from country to country or some differences related to gender. For example, while in the US study [12] a frequently misused drug was the Ritalin, in the Iranian study [15] from 2014 reported that benzodiazepines were the most commonly abused drugs by students (7.4%), followed by alcohol (4.7%), and opiates (3.3%).

The main contribution of the present study lies in mapping the correlates of substance misuse to various aspects of stress experienced by university students.

### CONCLUSIONS

University students who abuse alcohol and/or non-prescription drugs report higher levels of academic stress in their lives. Those substance abusing students more often report feeling depressed, worthless, useless, and the sense of being better off dead. They more often experience nightmares about exams or about uncompleted assignments.

### ACKNOWLEDGEMENT

We thank Abe Cernovsky, BA, for his editorial assistance on the drafts of this article.

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**Citation:** Marco Istasy, Rana Elias, Maria Raheb, Zack Cernovsky. *Substance Abuse and Stress Levels in Canadian University Students. Archives of Psychiatry and Behavioral Sciences*. 2019; 2(2): 01-06.

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