

Attitudes of College Students Toward Mental Illness Stigma and the Misuse of Psychiatric Medications

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Objective: Mental illness stigma remains a significant barrier to treatment. However, the recent increase in the medical and nonmedical use of prescription psychiatric medications among college students seems to contradict this phenomenon. This study explored students' attitudes and experiences related to psychiatric medications, as well as correlates of psychiatric medication misuse (ie, attitudes toward mental illness and beliefs about the efficacy of psychiatric medications).

Method: Data were collected anonymously via self-report questionnaires from April 2008 to February 2009. Measures included the Michigan Alcoholism Screening Test, the Drug Abuse Screening Test, Day's Mental Illness Stigma Scale, the Attitudes Toward Psychiatric Medication scale, and the Psychiatric Medication Attitudes Scale. Participants included 383 university students (59.2% female), recruited on the campus of a large state university or through online classes offered through the same university.

Results: High rates of psychiatric medication misuse were shown (13.8%) when compared to rates of medical use (6.8%), and students with prescriptions for psychiatric drugs were also more likely to be misusers ($\chi^2 = 20.60$, $P < .001$). Psychiatric medication misusers reported less stigmatized beliefs toward mental illness, including lower anxiety around the mentally ill ($t = 3.26$, $P < .001$) as well as more favorable attitudes toward psychiatric medications ($t = 2.78$, $P < .01$) and stronger beliefs in the potential for recovery from mental illness ($t = -2.11$, $P < .05$). Students with more stigmatized beliefs had greater concerns about psychiatric medications and less favorable beliefs regarding their effectiveness. Reasons for misuse varied by medication class, with 57.1% of stimulant misusers noting help with studying as their primary reason for use and 33.3% of benzodiazepine misusers noting attempts to get high or "party" as their primary reason for misuse.

Conclusions: Results suggest the need for improved education regarding the nature of mental illness, the appropriate use of psychiatric medications, and the potential consequences associated with abuse of these potent drugs.

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Individuals who suffer from mental illness have been stigmatized throughout history. Although destigmatization efforts began early in the 18th century,¹ the view that mental illness is a character problem has persisted. A 2000 study² demonstrated that attitudes of British adults toward those with mental illness remain quite negative. A significant number of individuals reported feeling that those affected by

mental illness are a danger to others, should "pull themselves together," and had themselves to blame for their disorder. An even greater number believed that those with substance use disorders are dangerous to others, have themselves to blame, and will never be able to recover.² In addition, results of a 2007 American study³ showed that 30% of mentally ill Christians seeking counsel from their church experienced a negative interaction, including the equation of mental illness with the work of demons or sin, as well as being urged not to take prescribed psychiatric medication.

Treatments for mental illness carry their own stigma. Research has demonstrated that most adults do not believe that psychotherapy is effective,⁴ and the use of psychiatric medication has received negative public attention. Approximately 1 in 4 Americans believes that psychiatric medications are harmful to the body, and approximately 1 in 3 believes the medications interfere with one's daily activities.⁵ Yet, not all Americans share this negative perception of psychiatric medication. Pharmaceutical advertisements, in particular, have made many individuals more aware and accepting of mental illnesses and their treatability. A recent study⁶ demonstrated that individuals exposed to antidepressant medication advertisements were more likely to endorse mild to severe depressive symptoms than those who read scientific data regarding the medication. In addition, practices involving the indicated and off-label uses of psychiatric medications have become somewhat more flexible than in the past. Indeed, it has been suggested that some individuals view psychiatric medications as "performance-enhancing drugs"⁷ that can be used to increase productivity, efficiency, and relaxation, rather than merely to combat serious psychiatric symptoms.

Use of Psychiatric Medications in College Student Populations

Rates of psychiatric medication use have been increasing steadily, with 8.1% of Americans taking any psychotropic in 2001⁸ and 10.1% of Americans taking an antidepressant in 2005.⁹ Recent studies^{10–12} have estimated the prevalence of prescribed antidepressant use in college students to be 6%, with medical use of anti-anxiety medications ranging from 1.0% to 3.4% and use of stimulants to treat attention-deficit/hyperactivity disorder ranging from 1.8% to 2.2%.^{10–12} In fact, it has been estimated that between one-fourth and one-half of students seen in counseling or student mental health care centers are prescribed antidepressants.¹³ These rates are somewhat expected, as mental illness is an important and ever-present issue on college campuses. Approximately 75% of all mental disorders emerge prior to the age of 24,¹⁴ and the Fall 2006 American College Health Association-National College Health Assessment demonstrated that 17.5% of

college students had experienced depression and 12.7% had experienced an anxiety disorder.¹⁵ Problems with depression and/or anxiety were rated as the fifth most prevalent academic impediment, and 7.5% of students reported that symptoms of attention-deficit/hyperactivity disorder impacted their academic performance.¹⁵ In addition, results of a 2007 study¹⁰ demonstrated that 30% of college students believed they needed mental health services, and almost half believed that medication was helpful for depression.

Although there is a clear need for prescribed use of psychiatric medications for some college students, prescription psychiatric medications are also becoming popular drugs of misuse and abuse on college campuses. With the median age at onset for all substance abuse at 20 years of age,¹⁴ college students are at high risk to develop such unhealthy habits. The 2006 National Survey on Drug Use and Health¹⁶ reported that almost one-third of those between the ages of 18 and 25 have used prescription drugs illicitly in their lifetime, with past-year misuse ranging from 14.6% to 16.9%.¹⁶ Unfortunately, the increased medicinal use of these drugs may be helping to fuel their misuse on college campuses, as almost 1 in 3 college students taking psychiatric medication has been approached to divert his or her medication.¹¹ In addition, a 2005 study¹⁷ demonstrated that most college students who had illicitly used prescription medication obtained the medication from a peer or family member with a legitimate prescription. Social networking Web sites popular with young adults, such as MySpace.com and Facebook.com, have also become a common marketplace for students wishing to buy or sell prescription drugs. Finally, a small percentage of students admit feigning psychiatric symptoms in order to obtain the medication from a physician.¹⁸ The recent increase in both medical and nonmedical use of prescription psychiatric medication among college students seems to contradict the societal stigma surrounding mental illness and its biological treatment. The goal of this study was to explore students' attitudes and experiences related to psychiatric medications, as well as the correlates of psychiatric medication misuse (ie, attitudes toward mental illness, beliefs about the efficacy of psychiatric medications, and perceptions of their effects). Identification of such correlates could assist in identification of individuals at risk for medication misuse, improve treatment for those who misuse these substances, and aid physicians who prescribe psychiatric medications to provide better counseling against medication misuse and diversion.

METHOD

Participants

Participants included 383 university students (59.2% female) who self-identified as white (51.7%), Hispanic (16.4%), Asian (12.8%), African American (13.3%), Arab American (1.1%), and "other" (4.7%). This distribution was overrepresentative of students from racial/ethnic minority backgrounds when compared to the overall student population (ie, the University of Florida reports that 27.5% of

students come from racial/ethnic minority backgrounds). The students ranged in age from 18 to 31 years (mean = 20.01, SD = 2.12 years), and 91.7% were undergraduates (24.1% first-year, 27.5% second-year, 21.7% third-year, and 18.3% fourth-year or higher). In addition, 8.3% were postbaccalaureate or graduate/professional students. Students reported a wide variety of majors that were reflective of the overall student population.

Procedure

All study procedures were approved by the University of Florida Health Science Center Institutional Review Board. Due to limited resources, a convenience sample of participants was recruited in various campus locations and from students participating in several online classes. Students were invited to participate anonymously in a study of attitudes regarding psychiatric medications (ie, prescription stimulants, benzodiazepines, and antidepressants), and their decision to participate served as implicit consent. They were then provided with a list of medications that are included in each of these categories. All students completed self-report questionnaires anonymously and returned them to research assistants in sealed manila envelopes. Participants were compensated for their time with a candy bar or extra credit in their online course.

Measures

Psychiatric Medication Attitudes Scale (PMAS). This 65-item questionnaire (eAppendix 1) was developed for this study to assess attitudes and beliefs regarding prescription drug use and misuse (ie, benzodiazepines, prescription stimulants, and antidepressants). As a result, no data are available regarding the reliability and validity of the measure. Items were rated on a 5-point Likert scale and were specific to each prescription psychiatric medication class tested (22 items per class, with the exception of 21 items in the attention-deficit/hyperactivity disorder medication class). The first 12 items for each medication class assessed beliefs regarding reasons that college students may use or misuse a specific psychiatric prescription medication (eg, to improve focus or concentration, to get high or "party," and to manage stress). The next 8 items for each medication class included beliefs regarding ease of obtaining such prescription medications, effects of the prescription medications, and frequency of misuse of the medications. In addition, 2 questions were asked, per psychiatric medication class, concerning change in attitudes about psychiatric medication since beginning college. These items were rated on a 3-point scale (ie, improved, remained the same, or worsened) and included "Since going to college, my overall opinion of those taking benzodiazepines *medically* has [fill in blank]." and "Since going to college, my overall opinion of those taking benzodiazepines *nonmedically* has [fill in blank]."

Day's Mental Illness Stigma Scale (DMISS).¹⁹ This 28-item measure is composed of 7 subscales assessing individuals' beliefs related to mental illness stigma. The subscales include *anxiety*, which measures feelings of nervousness,

fear, or danger around those who are mentally ill; *relationship disruption*, which focuses on whether or not someone believes they can have a normal and healthy relationship with someone who has a psychiatric disorder; *hygiene*, which refers to one's beliefs about the ability of individuals with mental illness to take care of basic personal needs; *visibility*, which measures whether the respondent believes that they can easily recognize a person who is mentally ill; *treatability*, which assesses beliefs regarding whether or not psychiatric disorders can be treated; *efficacy*, which explores the belief that mental health professionals have the appropriate skills to effectively treat mental illnesses; and *recovery*, which assesses beliefs regarding whether or not a person can recover from mental illness. Items are rated on a 7-point Likert scale. Examples of items are "I feel anxious and uncomfortable when I'm around someone with a mental illness" and "Psychiatrists and psychologists have the knowledge and skills needed to effectively treat mental illness." Mean scores were computed for each subscale. Each subscale has demonstrated adequate internal consistencies, with Cronbach α of 0.90, 0.84, 0.83, 0.78, 0.71, 0.86, and 0.75, respectively.²⁰ Similar results were obtained for the present sample (anxiety: $\alpha = 0.85$; relationship disruption: $\alpha = 0.84$; hygiene: $\alpha = 0.87$; visibility: $\alpha = 0.68$; treatability: $\alpha = 0.64$; professional efficacy: $\alpha = 0.86$; recovery: $\alpha = 0.86$).

Attitudes Toward Psychiatric Medications (ATPM) scale.⁵ The ATPM scale is a 6-item self-report measure that is divided into 2 subscales measuring attitudes toward the effectiveness of psychiatric medications (4 items) and concerns regarding side effects caused by psychiatric medications (2 items). Items are rated on a 5-point Likert scale. Internal consistency reliabilities were reported⁵ as $\alpha = 0.80$ for effectiveness and $\alpha = 0.61$ for concern. Examples of items are "Taking psychiatric medications helps people deal with day-to-day stresses" and "Psychiatric medicine is harmful to the body." Internal consistency for the present sample was good for the effectiveness subscale ($\alpha = 0.82$) and adequate for the concern subscale ($\alpha = 0.68$).

Michigan Alcoholism Screening Test (MAST).²¹ The MAST is a 24-item self-report scale that measures symptoms of alcohol abuse in the past 12 months. Items are scored in a "yes" or "no" format. Examples of items are "Do you ever feel guilty about your drinking?" and "Have you ever gotten into trouble at work because of drinking?" The MAST has demonstrated excellent internal consistency (Kuder-Richardson Formula 20 [KR-20] = 0.95) and validity, correctly identifying 92% of a sample of 99 hospitalized alcoholics.²¹

Drug Abuse Screening Test (DAST).²² This 28-item self-report scale measures symptoms of drug abuse and

Table 1. Comparison of Students With and Without a Psychiatric Prescription (N=383)

Measure	No Psychiatric Prescription ^a (n = 357)	Have Psychiatric Prescription ^b (n = 26)	χ^2 or <i>t</i> Statistic
Reports misuse of a psychiatric prescription, %	11.6	44.0	$\chi^2 = 20.60^{***}$
MAST total score, mean (SD)	1.7 (1.6)	2.0 (1.6)	$t = -0.83$
DAST total score, mean (SD)	1.8 (2.6)	3.6 (4.8)	$t = -2.65^{**}$
DMISS anxiety score, mean (SD)	20.9 (8.7)	15.0 (10.0)	$t = 3.29^{***}$
DMISS relationship disruption score, mean (SD)	19.5 (7.2)	13.3 (7.0)	$t = 4.24^{***}$
DMISS hygiene score, mean (SD)	10.4 (4.8)	7.2 (4.3)	$t = 3.37^{***}$
DMISS visibility score, mean (SD)	15.7 (4.7)	15.9 (5.1)	$t = -0.10$
DMISS treatability score, mean (SD)	17.5 (2.8)	19.7 (2.0)	$t = -3.90^{***}$
DMISS efficacy score, mean (SD)	10.2 (2.8)	11.6 (2.8)	$t = -2.52^{**}$
DMISS recovery score, mean (SD)	11.7 (2.5)	12.6 (3.2)	$t = -1.46$
Medication effectiveness score, mean (SD)	14.3 (2.7)	16.7 (2.2)	$t = -4.25^{***}$
Medication concerns score, mean (SD)	6.0 (1.4)	4.6 (1.9)	$t = 4.76^{***}$

^aStudents who denied having a current prescription for psychiatric medication.

^bStudents who reported having a current prescription for psychiatric medication.

** $P \leq .01$, *** $P \leq .001$.

Abbreviations: DAST = Drug Abuse Screening Test, DMISS = Day's Mental Illness Stigma Scale, MAST = Michigan Alcoholism Screening Test.

dependence in the past 12 months. Items are scored as "yes" or "no." Examples of items are "Have you ever lost friends because of your use of drugs?" and "Are you always able to stop using drugs when you want to?" The DAST has shown excellent internal consistency reliability (KR-20 = 0.92).²²

RESULTS

The overwhelming majority of respondents reported having no current prescription for any psychiatric medication, whereas some students reported prescriptions for multiple classes of medication (eg, stimulants, antidepressants, antipsychotics, benzodiazepines). Table 1 presents results comparing students who had a current prescription for a psychiatric medication with those who did not. In general, students with a current psychiatric prescription reported significantly more positive attitudes toward individuals with mental illness, treatability of mental illness, and psychiatric medications. Students who were prescribed a psychiatric medication were also more likely to misuse a prescription psychiatric medication and reported more symptoms of drug abuse.

For benzodiazepines and stimulants, the lifetime prevalence of misuse/abuse was high when compared to the point prevalence of use according to a prescription. A total of 370 students responded to questions about having prescriptions and misusing prescription medications. Only 9 of these students (2.4%) reported currently being prescribed a stimulant, but 49 students (13.2%) reported misusing a prescription stimulant at least once during their lifetime. Similarly, 10 students (2.7%) reported currently being prescribed a benzodiazepine, whereas 15 students (4.1%) reported lifetime misuse of a benzodiazepine. Finally, 15 students (4.1%) were currently prescribed an antidepressant, but only 1 student (0.3%), who did not have a prescription, reported misuse of antidepressants. In total, 10.8% of students reported misusing 1 class of prescription psychiatric medication, 2.7%

Table 2. Comparison of Students Who Reported or Denied Misuse of a Psychiatric Medication (N=370)

Measure	Denied Misuse of a Psychiatric Medication (n = 319), Mean (SD)	Reported Misuse of a Psychiatric Medication (n = 51), Mean (SD)	t Statistic
MAST total score	1.6 (1.6)	2.2 (1.6)	-2.60**
DAST total score	1.5 (2.3)	4.3 (4.1)	-6.77***
DMISS anxiety score	21.1 (8.9)	16.8 (8.1)	3.26***
DMISS relationship disruption score	19.6 (7.3)	16.8 (7.3)	2.59**
DMISS hygiene score	10.5 (4.8)	8.3 (4.0)	3.02**
DMISS visibility score	15.9 (4.7)	15.4 (4.5)	0.53
DMISS treatability score	17.6 (2.9)	18.2 (2.2)	-1.30
DMISS efficacy score	10.2 (2.7)	10.8 (2.8)	-1.43
DMISS recovery score	11.6 (2.6)	12.5 (2.1)	-2.11*
Medication effectiveness score	14.5 (2.6)	14.7 (3.2)	-0.41
Medication concerns score	6.0 (1.4)	5.4 (1.7)	2.78**

* $P \leq .05$, ** $P \leq .01$, *** $P \leq .001$.

Abbreviations: DAST = Drug Abuse Screening Test, DMISS = Day's Mental Illness Stigma Scale, MAST = Michigan Alcoholism Screening Test.

Table 3. Pearson r Correlations Between Mental Illness Stigma Beliefs and Drug Abuse, Alcohol Abuse, and Attitudes Toward Psychiatric Medications

Mental Illness Stigma (DMISS Subscales)	Drug Abuse (DAST)	Alcohol Abuse (MAST)	Medication Effectiveness	Medication Concerns
Anxiety	-0.11*	0.00	-0.03	0.19***
Relationship disruption	-0.08	-0.08	-0.03	0.15**
Hygiene	-0.00	-0.05	-0.09	0.15**
Visibility	-0.01	-0.04	0.03	0.01
Treatability	-0.09	-0.44	0.25***	-0.30***
Efficacy	-0.08	-0.16**	0.25***	-0.26***
Recovery	0.04	-0.04	-0.03	-0.13*

* $P \leq .05$, ** $P \leq .01$, *** $P \leq .001$.

Abbreviations: DAST = Drug Abuse Screening Test, DMISS = Day's Mental Illness Stigma Scale, MAST = Michigan Alcoholism Screening Test.

of students reported misusing 2 classes, and 0.3% reported misusing all 3 classes included in this study.

Misuse of a prescription stimulant was highly correlated with misuse of a benzodiazepine ($r = 0.31$, $P < .001$). As seen in Table 2, students who reported misusing a prescription psychiatric medication also reported significantly more symptoms of alcohol and drug abuse. Students who denied misuse of prescription psychiatric medications reported more negative attitudes toward mental illness than did students who admitted psychiatric medication misuse. On the other hand, students who admitted misuse of a prescription psychiatric medication reported more positive attitudes concerning recovery from psychiatric illness.

As seen in Table 3, students' attitudes toward mental illness were associated with their opinions about psychiatric medications and their substance use histories. Individuals who believed psychiatric medication is effective also had more positive beliefs regarding the treatability (DMISS treatability) of mental illness and the efficacy of mental health professionals (DMISS efficacy). In addition, those who were concerned about negative side effects of psychiatric medication had

Table 4. Reasons Students Endorsed for Personally Misusing Prescription Psychiatric Medications (N=51)^{a,b}

Reason	Stimulants (n = 49), n (%)	Benzodiazepines (n = 15), n (%)	Antidepressants (n = 1), n (%)
To help study	28 (57.1)
To improve focus	10 (20.4)
To experiment	4 (8.2)	1 (6.7)	...
To get high or "party"	3 (6.1)	5 (33.3)	...
To self-medicate	2 (4.1)	1 (6.7)	...
To relax or "zone out"	...	4 (26.7)	...
To manage stress	...	1 (6.7)	1 (100)
Other	2 (4.1)	3 (20.0)	...

^aSome students misused more than one type of medication.^bResults based on the Psychiatric Medication Attitudes Scale (see eAppendix 1).

Symbol: ... = not endorsed.

higher scores on DMISS anxiety, relationship disruption, and hygiene and had lower scores on DMISS treatability, efficacy, and recovery. Although alcohol and drug abuse were not related to student attitudes regarding effectiveness or side effects of psychiatric medications, drug abuse was negatively correlated with DMISS anxiety, and alcohol abuse was negatively correlated with DMISS efficacy.

When we examined gender differences, male students generally reported more symptoms of drug abuse than female students on the DAST ($t = 2.43$, $P = .02$), but there was no difference between male and female reports of alcohol abuse on the MAST ($t = -0.29$, not significant). Similarly, there was no significant difference in the percentage of male students (16.5%) and female students (15.9%) who admitted misusing a prescription psychiatric medication ($\chi^2 = 0.02$, not significant). In general, male students reported more negative attitudes toward mental illness than did female students, with higher scores on DMISS anxiety ($t = 3.22$, $P = .001$), relationship disruption ($t = 2.76$, $P = .006$), hygiene ($t = 6.22$, $P < .001$), and visibility ($t = 2.54$, $P = .01$) and lower scores on DMISS treatability ($t = -4.81$, $P < .001$) and efficacy ($t = -4.78$, $P < .001$). There were no significant differences between male and female students' attitudes regarding efficacy and side effects of psychiatric medications.

Students who reported misusing a prescription psychiatric medication endorsed their primary reason for doing so. Table 4 lists reasons students endorsed for misusing psychiatric medications. All students also reported reasons they believed *other* students misused prescription psychiatric medications. These results are listed in Table 5. As seen in Table 6, the overwhelming majority of students declared that their opinions regarding the medical and nonmedical use of psychiatric medications had remained the same since entering college. However, among respondents who reported a change in their opinions regarding students who take these medications *medically*, the majority reported improved opinions. On the other hand, among respondents who reported a change in their opinions regarding students who take these medications *nonmedically*, the majority reported that their opinion had worsened.

Table 5. Beliefs Regarding Reasons Other Students Use Psychiatric Medications^{a,b}

Reason	Prescription Stimulants		Benzodiazepines		Antidepressants	
	Agree, %	Disagree, %	Agree, %	Disagree, %	Agree, %	Disagree, %
Because they have the relevant psychiatric symptoms	66.9	10.8	71.1	4.0	86.2	0.8
To help study	76.2	7.4	24.1	29.1	25.8	34.6
To improve focus or concentration	79.0	6.1	27.9	25.5	30.7	28.5
To manage stress	41.4	20.7	59.4	6.4	68.5	6.4
To help sleep	14.0	53.2	41.2	14.2	45.7	16.8
To feel like themselves	13.5	49.6	32.9	18.7	57.3	13.6
To manage emotions	20.5	43.2	48.1	12.6	67.0	5.9
To relax or "zone out"	32.0	39.9	48.7	13.6	43.6	18.9
To get high or "party"	37.9	39.5	37.4	21.4	29.8	31.1
To experiment	51.5	25.7	46.5	16.7	39.1	25.0
To counteract or enhance the effects of other drugs	21.3	36.7	21.7	24.3	20.3	27.2
"I believe that most people that are prescribed this medication legitimately have what it is used to treat"	40.7	32.8	56.6	14.2	61.9	16.8
"I believe that those who take this medication have an academic advantage"	23.9	46.8	6.2	55.9	3.5	62.9

^aDue to isolated cases of missing data, the Ns for the items in Table 5 range from 372–378.

^bResults based on the Psychiatric Medication Attitudes Scale (see eAppendix 1).

Table 6. Change in Attitudes Toward Psychiatric Medications Since Entering College (N=373)^a

Variable	Improved, %	Remained the Same, %	Worsened, %
Since going to college, my overall opinion of those taking prescription stimulants <i>medically</i> has...	12.9	82.0	5.1
Since going to college, my overall opinion of those taking prescription stimulants <i>nonmedically</i> has...	7.0	65.7	25.7
Since going to college, my overall opinion of those taking benzodiazepines <i>medically</i> has...	8.0	90.6	1.3
Since going to college, my overall opinion of those taking benzodiazepines <i>nonmedically</i> has...	3.0	78.2	18.8
Since going to college, my overall opinion of those taking antidepressants <i>medically</i> has...	11.9	85.8	2.4
Since going to college, my overall opinion of those taking antidepressants <i>nonmedically</i> has...	3.3	76.1	20.7

^aResults based on the Psychiatric Medication Attitudes Scale (see eAppendix 1).

DISCUSSION

Previous research¹¹ has reported that the misuse of prescription medications is a growing problem on college campuses. Although some studies²³ have examined motivations for prescription opioid abuse, there are limited data examining students' attitudes regarding the use and misuse of prescription psychiatric medications or their motivations

for abuse of these drugs. Results of the present study suggest that these issues merit greater attention.

The stigma associated with mental illness negatively influences public policy and remains a significant barrier to treatment. As a result, efforts have been made to increase public understanding of mental illness. Although some students in the present study reported an improved attitude toward the medical use of prescription psychiatric medications since beginning college, mental illness stigma remains on college campuses and is associated with negative beliefs about the efficacy and side effects of psychiatric medications. On the other hand, results also suggest that less stigmatized beliefs regarding mental illness are associated with

both positive beliefs about the efficacy of psychiatric medications and increased misuse of psychiatric medications. In other words, for some individuals, the pendulum has swung too far. For example, many students reported the belief that psychiatric medications enhance academic performance in the user, even when used nonmedically. In addition, although the majority of students reported believing that most students use these medications to treat relevant symptoms, they also reported believing that most students who have a prescription for these psychiatric medications do not actually have the disorder that the medication is meant to treat. Perhaps students are using the medications as a performance-enhancing substance to treat subclinical symptoms, which may help to explain the persistence of negative attitudes regarding psychiatric illnesses and their treatments. These findings also present an interesting dilemma for health educators and mental health professionals, as it appears that many students also view and utilize prescription psychiatric medications as drugs of abuse. This hypothesis is further supported by the fact that, in this sample, misusers of 1 class of medication were more likely to misuse another class of medication, as well as being more likely to abuse alcohol and illegal drugs.

Some limitations of the study should be noted. First, the use of a convenience sample may have resulted in self-selection bias. For example, it is possible that students actively participating in campus life or seeking extra credit are less likely to abuse prescription drugs. Use of a more representative sample would have been preferred but was not feasible due to the limited resources available for this project. Second, the percentage of students in our sample who reported using or misusing prescription drugs was relatively low, which precluded some analyses from being conducted. However, data from the Student Health Care Center (SHCC) of the University of Florida, Gainesville, indicated that, of

the 24,338 students who were seen at the SHCC during the year this study took place, 181 unique patients (0.74%) received a prescription for a stimulant, 204 unique patients (0.84%) received a prescription for a benzodiazepine, and 388 unique patients (1.6%) received a prescription for an antidepressant. Assuming that some students would obtain prescriptions from other providers, these data suggest that we captured a fairly representative number of prescribed psychiatric medication users. Future research should include active recruitment of prescription drug misusers in order to achieve the power needed for more in-depth analyses. Third, data collected were exclusively self-report, and students may not have been completely honest in their responses. However, we suspect that the measures employed to maintain anonymity also protected the integrity of responses. Fourth, standardized assessments were not available for all variables of interest. As a result, one measurement scale was developed for this study, and its psychometric properties are unknown. Finally, the generalizability of the data was restricted by the sample, which was relatively small and consisted of students from a single university. Future research should include larger, multisite studies with more objective measures, such as urine drug testing.

Despite these limitations, the present study provides preliminary data regarding an important and growing concern for college campuses. The results provide valuable information that can be used to improve efforts to educate the public (particularly college students) about mental illness and psychiatric medications in order to decrease stigma without encouraging abuse of prescription medications. As education regarding the abuse of alcohol, illicit drugs, and prescription painkillers is prevalent on college campuses, it is suggested that education regarding the abuse of psychiatric medications be added to existing programs. In particular, more education regarding the appropriate uses and effects of psychiatric medications is indicated. Finally, the study provides important information for physicians who prescribe psychiatric medications to patients. For example, currently there is no standard procedure for discussing prescription psychiatric medication abuse or diversion with students at the SHCC. In addition, community providers may or may not discuss these concerns with patients. As a result, it is likely that many patients do not receive adequate counseling. Patients should be better educated regarding the appropriate use of prescription psychiatric medications, counseled against sharing with family and friends, and evaluated for abuse risk at regular intervals.

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eAppendix 1 is available at PSYCHIATRIST.COM.

Appendix 1. The Psychiatric Medication Attitudes Scale

For your reference while taking this survey, please refer to the following definitions:

- **ADHD medication** can refer to any prescription stimulant, including Adderall (amphetamine/dextroamphetamine), Ritalin (methylphenidate), Strattera (atomoxetine), Focalin (dexamethylphenidate), Concerta (methylphenidate), Provigil (modafinil), etc.
- **Benzodiazepines** can refer to any prescription antianxiety sedative, including Xanax (alprazolam), Valium (diazepam), Ativan (lorazepam), Librium (chlordiazepoxide), Rohypnol (flunitrazepam), Klonopin (clonazepam), etc.
- **Antidepressants** can refer to any prescription antidepressant medication, including Zoloft (sertraline), Prozac (fluoxetine), Lexapro (escitalopram), Wellbutrin (bupropion), Effexor (venlafaxine), Cymbalta (duloxetine), Paxil (paroxetine), Celexa (citalopram), etc.

Please circle the response that best describes YOUR views. There are no right or wrong answers.

ADHD Medication	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I believe that college students use ADHD medication					
a. because they have ADHD/ADD	1	2	3	4	5
b. to help study	1	2	3	4	5
c. to improve focus/concentration	1	2	3	4	5
d. to manage stress	1	2	3	4	5
e. to help sleep	1	2	3	4	5
f. to feel like themselves	1	2	3	4	5
g. to manage their emotions	1	2	3	4	5
h. to relax/"zone out"	1	2	3	4	5
i. to get high/"party"	1	2	3	4	5
j. to experiment	1	2	3	4	5
k. to counteract or enhance the effects of other drugs	1	2	3	4	5
2. I believe that most people who are prescribed ADHD medication legitimately have ADHD.	1	2	3	4	5
3. I believe that those who take ADHD medication have an academic advantage.	1	2	3	4	5
4. I believe it is okay to seek a prescription for ADHD medication from a physician even if one does not think he or she has ADHD.	1	2	3	4	5
5. I believe it is okay to fake symptoms of ADHD in order to receive a prescription.	1	2	3	4	5
6. I believe it is okay to ask someone who is prescribed ADHD medications to give them away or to sell them.	1	2	3	4	5
7. I believe I could get ADHD medication if I wanted it.	1	2	3	4	5
8. I believe that ADHD medications are drugs of abuse on my campus.	1	2	3	4	5
9. I believe that effects of ADHD medications are better if you snort them.	1	2	3	4	5
Benzodiazepines	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I believe that college students use benzodiazepines					
a. because they have anxiety	1	2	3	4	5
b. because they are depressed	1	2	3	4	5
c. to help study	1	2	3	4	5
d. to improve focus/concentration	1	2	3	4	5
e. to manage stress	1	2	3	4	5
f. to help sleep	1	2	3	4	5
g. to feel like themselves	1	2	3	4	5
h. to manage their emotions	1	2	3	4	5
i. to relax/"zone out"	1	2	3	4	5
j. to get high/"party"	1	2	3	4	5
k. to experiment	1	2	3	4	5
l. to counteract or enhance the effects of other drugs	1	2	3	4	5
2. I believe that most people who are prescribed benzodiazepines legitimately have anxiety.	1	2	3	4	5
3. I believe that those who take benzodiazepines have an academic advantage.	1	2	3	4	5
4. I believe it is okay to seek a prescription for benzodiazepines from a physician even if one does not think he or she has anxiety.	1	2	3	4	5

(continued)

eAppendix 1 (continued). The Psychiatric Medication Attitudes Scale

5. I believe it is okay to fake symptoms of anxiety in order to receive a prescription.	1	2	3	4	5
6. I believe it is okay to ask someone who is prescribed benzodiazepines to give them away or to sell them.	1	2	3	4	5
7. I believe I could get benzodiazepines if I wanted them.	1	2	3	4	5
8. I believe that benzodiazepines are drugs of abuse on my campus.	1	2	3	4	5
9. I believe that effects of benzodiazepines are better if you snort them.	1	2	3	4	5

Antidepressants	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I believe that college students use antidepressants					
a. because they suffer from depression	1	2	3	4	5
b. because they have anxiety	1	2	3	4	5
c. to help study	1	2	3	4	5
d. to improve focus/concentration	1	2	3	4	5
e. to manage stress	1	2	3	4	5
f. to help sleep	1	2	3	4	5
g. to feel like themselves	1	2	3	4	5
h. to manage their emotions	1	2	3	4	5
i. to relax/"zone out"	1	2	3	4	5
j. to get high/"party"	1	2	3	4	5
k. to experiment	1	2	3	4	5
l. to counteract or enhance the effects of other drugs	1	2	3	4	5
2. I believe that most people who are prescribed antidepressants legitimately are depressed or have anxiety.	1	2	3	4	5
3. I believe that those who take antidepressants have an academic advantage.	1	2	3	4	5
4. I believe it is okay to seek a prescription for antidepressants from a physician even if one does not think he or she is depressed or has anxiety.	1	2	3	4	5
5. I believe it is okay to fake symptoms of depression in order to receive a prescription.	1	2	3	4	5
6. I believe it is okay to ask someone who is prescribed antidepressants to give them away or to sell them.	1	2	3	4	5
7. I believe I could get antidepressants if I wanted them.	1	2	3	4	5
8. I believe that antidepressants are drugs of abuse on my campus.	1	2	3	4	5
9. I believe that effects of antidepressants are better if you snort them.	1	2	3	4	5

Medical/Nonmedical Use	Improved	Remained the Same	Worsened
1. Since going to college, my overall opinion of those taking ADHD medication <i>medically</i> has	1	2	3
2. Since going to college, my overall opinion of those taking ADHD medication <i>nonmedically</i> has	1	2	3
3. Since going to college, my overall opinion of those taking benzodiazepines <i>medically</i> has	1	2	3
4. Since going to college, my overall opinion of those taking benzodiazepines <i>nonmedically</i> has	1	2	3
5. Since going to college, my overall opinion of those taking antidepressants <i>medically</i> has	1	2	3
6. Since going to college, my overall opinion of those taking antidepressants <i>nonmedically</i> has	1	2	3

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Abbreviations: ADD = attention-deficit disorder, ADHD = attention-deficit/hyperactivity disorder.