Impulse-Control Disorders in a College Sample: Results From the Self-Administered Minnesota Impulse Disorders Interview (MIDI)

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Objective: This study sought to examine the prevalence rates of and gender differences among impulse-control disorders in a college sample.

Method: During the fall semester of 2006, 791 college students from 2 private colleges in the Midwest completed a self-administered, modified version of the Minnesota Impulse Disorders Interview to assess lifetime rates of *DSM-IV-TR*–diagnosed impulse-control disorders. Participation was voluntary and anonymous.

Results: The mean age of the sample was 20.0 ± 1.25 years, with females comprising 67.9% of the respondents. Of the individuals, 10.4% (n = 82) met criteria for at least 1 lifetime impulse-control disorder. The most common disorders were trichotillomania (3.91%) and compulsive sexual behavior (3.66%). Kleptomania was the least common (0.38%). Males were significantly more likely to screen positive for pathological gambling ($P = .003$) and compulsive sexual behavior ($P = .002$). Females were more likely to have compulsive buying ($P = .033$).

Conclusions: Impulse-control disorders appear to be common among college students. The high rates indicate that these disorders may be incipient during late adolescence and early adulthood and should be addressed prior to onset of clinical versions of the impulse-control disorder.

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Disorders characterized by an impaired ability to resist impulses to engage in ultimately self-destructive behaviors (or ones with deleterious long-term consequences) have been categorized in the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (*DSM-IV-TR*)[1] as impulse-control disorders (ICDs) not elsewhere classified. Impulse-control disorders are disabling psychiatric illnesses affecting an estimated 8.9% of the population.[2] Data suggest that ICDs are underdiagnosed,[3] health care providers have insufficient knowledge of ICDs,[4] and insurance companies often refuse treatment coverage for these disorders.[5]

Included in the *DSM-IV-TR* section on ICDs are pathological gambling, kleptomania, intermittent explosive disorder, trichotillomania, pyromania, and impulse-control disorders not otherwise specified.[1] In addition, diagnostic criteria have been proposed for compulsive buying and compulsive sexual behavior,[6,7] as these behaviors share the following phenomenological similarities to other ICDs and may be appropriate for inclusion in future versions of the *DSM*: (1) repetitive or compulsive engagement in a behavior despite adverse consequences, (2) diminished control over the problematic behavior, (3) an appetitive urge or craving state prior to engagement in the problematic behavior, and (4) a hedonic quality during the performance of the problematic behavior.[8–10]

Despite data suggesting correlations between ICDs and psychiatric comorbidity, illegal or high-risk behavior, and significant personal, societal, and economic distress,[6,11] research pertaining to the prevalence of ICDs in the general population has been relatively scarce. Pathological gambling is the only ICD with detailed prevalence data for the general population. Several large community studies have found that lifetime rates of pathological gambling range from 0.4% to 4.7%,[1,12–14] while lifetime rates of problem gambling (meeting only 3–4 *DSM-IV-TR* criteria) range from 2.3% to 9.3%.[13–15] High lifetime rates of intermittent explosive disorder (3.9%; n = 253),[16] compulsive buying (5.8%; n = 2,513),[17] and trichotillomania (0.6%; n = 2,534)[18] have been found in community samples.

Research on impulse-control disorders in adolescence and young adults is even more limited than in older adults, even though the onset of ICD behaviors is thought to occur in late adolescence/early adulthood. Research has indicated the age at onset (in years) for these disorders as follows: pathological gambling (30.5),[19] trichotillomania (11–13),[20,21] kleptomania (18.7),[22] pyromania (18.1),[23] intermittent explosive disorder (18.3),[16] compulsive buying (17.5),[24] and compulsive sexual behavior (18).[7]

In the only previous study that examined multiple impulsive behaviors,[25] researchers examined 275 high school students in Italy using self-report questionnaires.

Clinical Points

- Impulse-control disorders appear to be common in the young adult population.
- Schools should educate their students about these conditions and the availability of treatment resources.
- Certain impulse-control disorders may appear more frequently in males, while others may be more common in females.

That study found high rates of gambling, sex, and shopping problems, illustrating that these behaviors are common in adolescence.[25] The researchers also noted significant gender differences, with males having higher rates of sex and gambling problems and females reporting higher rates of problematic spending. The study, however, did not use proposed diagnostic criteria when examining problematic shopping and sex, and it did not assess for kleptomania or pyromania.

Research on community samples suggests that certain ICDs are more common among men (eg, pathological gambling, intermittent explosive disorder), while others appear more frequently among women (eg, trichotillomania, compulsive buying).[12–18] The gender breakdown for kleptomania, pyromania, and compulsive sexual behavior has been based only on clinical samples, and findings in adolescents and adults have been inconsistent.[26]

The aims of the present study are to examine ICDs in a college sample of young adults and to examine how rates of these disorders differ in men and women. The 2 objectives of this study are to (1) determine the prevalence of ICDs in a college sample and (2) examine gender differences.

METHOD

Subjects

The study consisted of 3,945 adult men and women at 2 private colleges in the Midwest. Assessment of ICDs was performed using an anonymous, self-report survey. The survey was approved by the institutional review boards of the University of Minnesota, Minneapolis, and the participating colleges, who wished to remain anonymous. Subjects provided implicit consent to the study by completing the survey. Surveys asserted both the voluntary nature and anonymity of the project.

Procedures

All 3,945 students attending the 2 colleges who were not studying abroad during the fall semester of 2006 received the survey. The survey consisted of questions concerning demographic variables (eg, age and ethnicity) and the Minnesota Impulse Disorders Interview (MIDI).[27] The survey was placed in envelopes and distributed in the post office boxes of every on-campus student on a single day. Students returned the surveys to a secure dropbox located in close proximity to the post office boxes when completed. The MIDI was scored by the same person to assure consistency in survey rating.

The MIDI is a screening instrument for the following ICDs: compulsive buying, kleptomania, trichotillomania, intermittent explosive disorder, pyromania, pathological gambling, and compulsive sexual behavior.[27] For purposes of this study, the MIDI was used as a self-report screen for lifetime ICDs. In adult and adolescent populations, the MIDI has demonstrated excellent classification accuracy compared to diagnostic instruments.[3,26]

Diagnostic criteria for trichotillomania, pathological gambling, pyromania, intermittent explosive disorder, and kleptomania are consistent with the *DSM-IV-TR*. Compulsive buying and compulsive sexual behavior criteria are consistent with criteria developed from previous research and are detailed below.[6,7] Subjects were characterized as having a disorder if they met full criteria for an ICD.

The following diagnostic criteria were used for compulsive buying: (1) preoccupation with buying (characterized by an irresistible, intrusive, and/or senseless preoccupation with buying or buying more than one can afford; buying unneeded items; or shopping for longer durations of time than originally intended) and (2) the preoccupation to buy results in marked distress, interferes with social or occupational functioning, and causes financial problems.[6]

For compulsive sexual behavior, the following criteria were used: (1) excessive or uncontrolled sexual behavior(s) or sexual thoughts/urges to engage in behavior and (2) these behaviors or thoughts/urges lead to significant distress, social or occupational impairment, or legal and financial consequences.[7]

Data Analysis

The percentages and 95% CIs of college students with lifetime ICDs were determined. Between-group differences (male versus female) were tested using the Pearson χ^2 and 2-sided Fisher exact test for categorical variables and 2-tailed independent samples *t* tests for continuous variables. All tests of hypotheses were performed using a 2-sided significance level of .05.

Table 1. Demographic Comparison of 791 College Students With and Without an Impulse-Control Disorder (ICD)

Characteristic	Total Sample (N = 791)	Students With an ICD (n = 82)[a]	Students Without an ICD (n = 709)[b]	Statistic	*df*	*P* Value
Age, mean (± SD), y	19.96 (1.253)	19.88 (1.221)	19.97 (1.257)	Student *t* test = 0.631	788	.528
Ethnicity, n (%)				Fisher exact test = 12.497	Not applicable	.017
White	708 (89.5)	67 (81.7)	641 (90.4)			
African American	11 (1.4)	1 (1.2)	10 (1.4)			
Hispanic	14 (1.8)	4 (4.9)	10 (1.4)			
Asian American	43 (5.4)	6 (7.3)	37 (5.2)			
Native American	3 (0.4)	2 (2.4)	1 (0.1)			
Other	11 (1.4)	1 (1.2)	10 (1.4)			

[a]One student was missing ethnicity data.
[b]One student was missing age data.

Table 2. Lifetime Rates of Impulse-Control Disorders in a College Sample (N = 791)

Impulse-Control Disorder	Lifetime Prevalence, n (%)	95% CIs, %
Trichotillomania	31 (3.92)	2.73 – 5.44
Compulsive sexual behavior	29 (3.67)	2.52 – 5.15
Compulsive buying	15 (1.90)	1.11 – 3.03
Pyromania	8 (1.01)	0.48 – 1.90
Pathological gambling	5 (0.63)	0.24 – 1.38
Intermittent explosive disorder	4 (0.51)	0.17 – 1.20
Kleptomania	3 (0.38)	0.11 – 1.01

RESULTS

Of the 3,945 students to which the surveys were distributed, 791 completed the survey (20.1% response rate). Of the 791 responders, 537 (67.9%) were women, which is slightly higher than the overall prevalence of females attending both schools (58.7%). The mean age was 20.0 ± 1.25 years (range, 17–24). The majority of subjects in each group were white (n = 708; 89.5%); however, 43 (5.4%) identified as Asian American, 14 (1.8%) as Hispanic, 11 (1.4%) as African American, 3 (0.4%) as Native American, and 11 (1.4%) as "other." Results indicated that endorsing an ethnicity other than white was a risk factor for screening positive for an ICD (Table 1).

Of the 791 subjects surveyed, 82 (10.4%) met criteria for at least 1 lifetime ICD, 12 (1.5%) had at least 2 ICDs, and 1 (0.1%) screened positive for 3 ICDs. The prevalence of each disorder is presented in Table 2. The most common disorders were trichotillomania (n = 31; 3.91%) and compulsive sexual behavior (n = 29; 3.66%), while kleptomania (n = 3; 0.38%) was the least common.

Compulsive buying was the only disorder reported significantly more often in women (14 women [2.6%] compared to 1 man [0.4%]; $\chi^2_1 = 4.541$; $P = .033$) (Table 3). Men were significantly more likely to screen for compulsive sexual behavior (17 men [6.7%] compared to 12 women [2.2%]; $\chi^2_1 = 9.704$; $P = .002$) and pathological gambling (5 men [2.0%] compared to 0 women; Fisher exact test = 0.003). Rates of trichotillomania, intermittent explosive disorder, pyromania, and kleptomania did not significantly differ between women and men.

DISCUSSION

In this study, we determined the rates of lifetime ICDs in 791 college students. To our knowledge, this is the first study using *DSM-IV-TR* and previously proposed criteria to examine rates of multiple ICDs in a community sample and the first to report prevalence rates for kleptomania, pyromania, and compulsive sexual behavior in a non–treatment-seeking sample. On the basis of the high rates of ICDs found, this study underscores the importance of screening for these disorders in college students and further promotes the consideration of disorders such as compulsive buying and compulsive sexual behavior in future versions of the *DSM*.

The lifetime prevalence rates of certain ICDs in this study were comparable to previous studies of adults and are consistent with the high rates of problem behavior noted in research on high school and college students.[25,28] For example, our findings of trichotillomania in 3.91% of the sample and pathological gambling in 0.63% are consistent with previous research.[12–14,18] However, it is possible that the rate of pathological gambling seen in this sample may be on the lower end compared to previous gambling research, due to lack of transportation options to a gambling venue such as a casino for these college students and the fact that more females answered the survey. In addition, although only 0.38% of the total sample endorsed symptoms consistent with kleptomania, this rate is comparable to that estimated for adults (0.5%).[29] In contrast, the lifetime rate of compulsive buying in this study (1.89%) was notably lower than recently reported (5.8%),[17] as was the lifetime rate of intermittent explosive disorder (0.5% compared to 3.9%–7.3%).[16,30] One possible reason for these disparities is that both the compulsive buying and intermittent explosive disorder studies sampled older-aged populations (mean age for the compulsive buying study sample was 39.7 years and 50.4 years for the intermittent explosive

Table 3. Gender Comparison of Impulse-Control Disorders in 791 College Students[a]

	Female (n = 537)	Male (n = 254)	Statistic	*df*	*P* Value
Age, mean (± SD), y	19.88 (1.222)	20.12 (1.303)	Student *t* test = −2.500	788	.013
Ethnicity					
White	487 (90.7)	221 (87.0)	χ^2 test = 2.059[a]	1[b]	.151[b]
African American	6 (1.1)	5 (2.0)			
Hispanic	9 (1.7)	5 (2.0)			
Asian American	28 (5.2)	15 (5.9)			
Native American	1 (0.2)	2 (0.8)			
Other	6 (1.1)	5 (2.0)			
Trichotillomania	22 (4.1)	9 (3.5)	χ^2 test = 0.140	1	.708
Compulsive sexual behavior	12 (2.2)	17 (6.7)	χ^2 test = 9.704	1	.002
Compulsive buying	14 (2.6)	1 (0.4)	χ^2 test = 4.541	1	.033
Pyromania	4 (0.7)	4 (1.6)	Fisher exact test		.278
Pathological gambling	0 (0.0)	5 (2.0)	Fisher exact test		.003
Intermittent explosive disorder	1 (0.2)	3 (1.2)	Fisher exact test		.100
Kleptomania	3 (0.6)	0 (0.0)	Fisher exact test		.555
At least 1 impulse-control disorder	49 (9.1)	33 (13.0)	χ^2 test = 2.776	1	.096
At least 2 impulse-control disorders	6 (1.1)	6 (2.4)	χ^2 test = 1.789	1	.181
At least 3 impulse-control disorders	1 (0.2)	0 (0.0)	Fisher exact test		1.00

[a]Values expressed as n (%) unless otherwise noted.
[b]χ^2 for this analysis is based on white versus nonwhite.

disorder study).[16,17] These differences in lifetime rates may suggest that certain behaviors, although possibly starting in early adulthood, do not reach full diagnostic criteria until somewhat later in life.

This study found a high lifetime rate of compulsive sexual behavior (3.66%), a modest rate of pyromania (1.01%), and a low lifetime rate of kleptomania (0.38%). These findings may have clinical significance in that prior research demonstrated that sexual compulsivity among college students (n = 876) was associated with "risky" sexual behaviors (ie, unprotected sex, thus increasing the risk of human immunodeficiency virus/sexually transmitted disease infection).[31]

This study also found that 8 college students (1.01%) met lifetime criteria for pyromania, possibly suggesting that the current clinical profile for pyromania (ie, that it typically occurs in those with poor social skills and learning difficulties)[1] may not be entirely accurate.

Finally, although we found low rates of kleptomania in this sample (0.38%), previous research suggests that kleptomania may have a bimodal age at onset with some having onset in adolescence while others have onset at approximately 30 years.[22,32] Therefore, in a college sample with a mean age of approximately 20 years, lower rates of kleptomania may be expected.

Our second objective in this study was to examine gender differences among a college sample. Our results indicate that significantly more men met diagnostic criteria for pathological gambling and compulsive sexual behavior, while significantly more women met criteria for compulsive buying. Contrary to previous research,[5,16,33–35] however, there were no statistically significant differences in rates of men and women meeting criteria for trichotillomania, intermittent explosive disorder, kleptomania, or pyromania. These findings suggest that these disorders, at least at this age, may not be as gender specific as previously assumed. In this age group, gender research on ICDs is limited, but data on adolescents with pathological gambling indicate a 3:1 ratio of males to females, which may also account for the low rates of pathological gambling seen in this sample.[36]

This study suffers from several limitations. First, the major limitation of this study is the relatively low response rate of 20.1%. This low response rate might amplify the number of positive screens due to the fact that those affected by a disorder may have been more likely to complete the survey. Alternatively, due to the nature of shame and embarrassment associated with many ICDs,[37,38] students with these disorders may have been less likely to complete the survey. Second, no direct interviews were conducted, and a screening instrument may overdiagnose disorders. Third, although the MIDI has been found to be a valid and reliable instrument as a clinician-administered instrument, no psychometric data are available for the self-report form that we used in this study. Finally, this sample consisted only of college students aged 17–24 years. How these data generalize to young adults not in college or to older adults is not yet clear. Although the lifetime prevalence rates of certain disorders such as pathological gambling and trichotillomania are similar to those found in other studies, this was not uniformly the case. Future research on the age at onset of ICDs may further clarify how the mean age of the sample may affect prevalence rates.

CONCLUSION

Despite prevalence rates similar to or greater than those for other psychiatric disorders, such as bipolar disorder or schizophrenia, far fewer research studies

have examined the prevalence of ICDs. Although ICDs appear fairly common among college students, future studies using larger sample sizes with greater age diversity are needed to confirm and extend these findings. The impact of these disorders on young adults should also be examined. This study illustrates the need for schools to educate students about these behaviors and the availability of treatment resources. Early recognition and treatment of these disorders may significantly improve the lives of those with ICDs.

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REFERENCES

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision. Washington, DC: American Psychiatric Association; 2000.
2. Kessler RC, Chiu WT, Demler O, et al. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(6):617–627.
3. Grant JE, Levine L, Kim D, et al. Impulse control disorders in adult psychiatric inpatients. *Am J Psychiatry*. 2005;162(11):2184–2188.
4. Marcks BA, Wetterneck CT, Woods DW. Investigating healthcare providers' knowledge of trichotillomania and its treatment. *Cogn Behav Ther*. 2006;35(1):19–27.
5. Peele PB, Lave JR, Kelleher KJ. Exclusions and limitations in children's behavioral health care coverage. *Psychiatr Serv*. 2002;53(5):591–594.
6. McElroy SL, Keck PE Jr, Pope HG Jr, et al. Compulsive buying: a report of 20 cases. *J Clin Psychiatry*. 1994;55(6):242–248.
7. Black DW, Kehrberg LL, Flumerfelt DL, et al. Characteristics of 36 subjects reporting compulsive sexual behavior. *Am J Psychiatry*. 1997;154(2):243–249.
8. Lejoyeux M, Adès J, Tassain V, et al. Phenomenology and psychopathology of uncontrolled buying. *Am J Psychiatry*. 1996;153(12):1524–1529.
9. Raymond NC, Coleman E, Miner MH. Psychiatric comorbidity and compulsive/impulsive traits in compulsive sexual behavior. *Compr Psychiatry*. 2003;44(5):370–380.
10. Grant JE, Potenza MN. Compulsive aspects of impulse-control disorders. *Psychiatr Clin North Am*. 2006;29(2):539–551, x.
11. Grant JE, Potenza MN. Impulse control disorders: clinical characteristics and pharmacological management. *Ann Clin Psychiatry*. 2004;16(1):27–34.
12. Petry NM, Stinson FS, Grant BF. Comorbidity of DSM-IV pathological gambling and other psychiatric disorders: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *J Clin Psychiatry*. 2005;66(5):564–574.
13. Kessler RC, Hwang I, LaBrie R, et al. DSM-IV pathological gambling in the National Comorbidity Survey Replication. *Psychol Med*. 2008;38(9):1351–1360.
14. Shaffer HJ, Hall MN, Vander Bilt J. Estimating the prevalence of disordered gambling behavior in the United States and Canada: a research synthesis. *Am J Public Health*. 1999;89(9):1369–1376.
15. Petry NM, Armentano C. Prevalence, assessment, and treatment of pathological gambling: a review. *Psychiatr Serv*. 1999;50(8):1021–1027.
16. Coccaro EF, Schmidt CA, Samuels JF, et al. Lifetime and 1-month prevalence rates of intermittent explosive disorder in a community sample. *J Clin Psychiatry*. 2004;65(6):820–824.
17. Koran LM, Faber RJ, Aboujaoude E, et al. Estimated prevalence of compulsive buying behavior in the United States. *Am J Psychiatry*. 2006;163(10):1806–1812.
18. Christenson GA, Pyle RL, Mitchell JE. Estimated lifetime prevalence of trichotillomania in college students. *J Clin Psychiatry*. 1991;52(10):415–417.
19. Grant JE, Kim SW. Demographic and clinical features of 131 adult pathological gamblers. *J Clin Psychiatry*. 2001;62(12):957–962.
20. Christenson GA, Mackenzie TB, Mitchell JE. Characteristics of 60 adult chronic hair pullers. *Am J Psychiatry*. 1991;148(3):365–370.
21. Cohen LJ, Stein DJ, Simeon D, et al. Clinical profile, comorbidity, and treatment history in 123 hair pullers: a survey study. *J Clin Psychiatry*. 1995;56(7):319–326.
22. Grant JE, Potenza MN. Gender-related differences in individuals seeking treatment for kleptomania. *CNS Spectr*. 2008;13(3):235–245.
23. Grant JE, Won Kim S. Clinical characteristics and psychiatric comorbidity of pyromania. *J Clin Psychiatry*. 2007;68(11):1717–1722.
24. Christenson GA, Faber RJ, de Zwaan M, et al. Compulsive buying: descriptive characteristics and psychiatric comorbidity. *J Clin Psychiatry*. 1994;55(1):5–11.
25. Pallanti S, Bernardi S, Quercioli L. The Shorter PROMIS Questionnaire and the Internet Addiction Scale in the assessment of multiple addictions in a high-school population: prevalence and related disability. *CNS Spectr*. 2006;11(12):966–974.
26. Grant JE, Williams KA, Potenza MN. Impulse-control disorders in adolescent psychiatric inpatients: co-occurring disorders and sex differences. *J Clin Psychiatry*. 2007;68(10):1584–1592.
27. Grant JE. *Impulse Control Disorders: A Clinician's Guide to Understanding and Treating Behavioral Addictions*. New York, NY: WW Norton and Company; 2008.
28. Weinstock J, Whelan JP, Meyers A. College students' gambling behavior: when does it become harmful? *J Am Coll Health*. 2008;56(5):513–522.
29. Goldman MJ. Kleptomania: making sense of the nonsensical. *Am J Psychiatry*. 1991;148(8):986–996.
30. Kessler RC, Coccaro EF, Fava M, et al. The prevalence and correlates of DSM-IV intermittent explosive disorder in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2006;63(6):669–678.
31. Dodge B, Reece M, Cole SL, et al. Sexual compulsivity among heterosexual college students. *J Sex Res*. 2004;41(4):343–350.
32. Baylé FJ, Caci H, Millet B, et al. Psychopathology and comorbidity of psychiatric disorders in patients with kleptomania. *Am J Psychiatry*. 2003;160(8):1509–1513.
33. Christenson GA, MacKenzie TB, Mitchell JE. Adult men and women with trichotillomania: a comparison of male and female characteristics. *Psychosomatics*. 1994;35(2):142–149.
34. Woods DW, Flessner CA, Franklin ME, et al; Trichotillomania Learning Center-Scientific Advisory Board. The Trichotillomania Impact Project (TIP): exploring phenomenology, functional impairment, and treatment utilization. *J Clin Psychiatry*. 2006;67(12):1877–1888.
35. Presta S, Marazziti D, Dell'Osso L, et al. Kleptomania: clinical features and comorbidity in an Italian sample. *Compr Psychiatry*. 2002;43(1):7–12.
36. Jacobs DF. Youth gambling in North America: long term trends and future prospects. In: Derevensky JL, Gupta R, eds. *Gambling Problems in Youth: Theoretical and Applied Approaches*. New York, NY: Kluwer Academic/Plenum Publishers; 2004:1–26.
37. Grant JE, Kim SW. Clinical characteristics and associated psychopathology of 22 patients with kleptomania. *Compr Psychiatry*. 2002;43(5):378–384.
38. Stein DJ, Christenson GA, Hollander E, eds. *Trichotillomania*. Washington, DC: American Psychiatric Press; 1999.