

Impact of Substance Abuse Discharge Recommendation Compliance on ED Readmission Rate in a College Population

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Abstract

- ✳ Substance misuse continues to be a significant problem facing college campuses nationwide. As in previous years, the 2013 SAMHSA data showed a higher rate of current alcohol use (59.4%), binge drinking (39%), and heavy drinking (12.7%) amongst full-time college students ages 18-22 compared to their peers (50.6%, 33.4%, and 9.3%, respectively), with males being more likely to binge and heavy drink than their female counterparts. Illicit substance use amongst full-time college students is similar to that of their peers (22.3% versus 23% respectively), with higher prevalence rates amongst males than females, and higher rates amongst whites, followed by Hispanics, blacks, and then Asians. The estimates for prevalence of current alcohol use, binge drinking, and heavy drinking in college age students all exceed those estimates in the general population (ages 12 and up) by 6.7%, 16%, and 6.5%, respectively. This indicates that nearly twice as many college students are engaging in heavy drinking compared to the general population. Similarly, the prevalence of current illicit drug use in the college population was more than twice that of the general population (10.2%).
- ✳ We have previously shown, in our own epidemiological study representing a cohort of undergraduate students at the University of Virginia who presented to the University Hospital ED, that a significant number of these visits were related to alcohol, illicit substance, or pharmaceutical drug abuse. Thirteen percent (13%) of these undergraduates were seen either solely or in-part due to substance misuse. By chart review, we also looked at the referrals these students were given on discharge and found that the majority (70%) were referred back to University Student Health, which has a division of Counseling and Psychological Services, or CAPS.
- ✳ For many, the Emergency Department (ED) represents a unique opportunity to speak to a health care provider about substance abuse and receive education, an appropriate referral, and even a brief intervention. Emergency Department studies of both injured and non-injured patients have found alcohol or drug related ED visits to be predictive of future ED admissions with similar presentations. We therefore reanalyzed our data on our student population to determine the prevalence of students with repeated ED visits related to substance misuse. This allows us to possibly identify a subgroup of particularly high risk college-aged substance abusers, as well as determine if these individuals received adequate follow up after any of their substance-related ED visits and any potential association between adequate follow up and ED readmission. We will conclude with a discussion of considerations for referrals from the ED for this high risk population.

Objectives

- ✳ Learn the prevalence of undergraduate college students with multiple (two or more) substance-related ED visits between July 2009 and June 2014.
- ✳ Understand the demographic characteristics of this high-risk college student population.
- ✳ Learn the prevalence of those students presenting to CAPS after their ED visit.
- ✳ Determine any potential association between CAPS follow up and substance-related ED readmission.

Methods

- ✳ ED admissions were queried for all unique admissions and identified as substance-related admissions through a range of diagnostic codes.
- ✳ ED readmissions were tallied based on medical record numbers with repeat substance-related ED admissions.
- ✳ The prevalence of repeat admissions was calculated as the portion of students with repeat substance-related ED admissions.
- ✳ Demographics for the subset of students were collected from a University student database.
- ✳ CAPS visits for each student in the subset were queried by student ID number to include visits before, between, and after ED visits.

ED Admissions

	n (total = 825)	%
1 visit	780	94.5
2 visits	39	4.7
3 visits	4	0.5
4 visits	2	0.2

Demographics

	2 or more ED visits		3 or more ED visits		General University Population %
	n (total = 45)	%	n (total = 6)	%	
Gender					
Male	24	53.3	3	50	44
Female	21	46.7	3	50	56
Race/Ethnicity					
White	37	82.2	6	100	60.7
African American	2	4.4	0	0	6.1
Hispanic	4	8.9	0	0	5.8
Asian	2	4.4	0	0	12.1
Pacific Islander	1	2.2	0	0	0.05
Undergraduate School					
Arts & Sciences	33	73.3	3	50	69.6
Engineering	6	13.3	2	33.3	17.0
Other	2	4.4	1	16.7	13.4
Greek Affiliation	26	57.8	5	83.3	35

CAPS Follow Up

	2 or more ED visits		3 or more ED visits	
	n (total = 45)	%	n (total = 6)	%
Never	14	31.1	3	50
Before 1 st ED visit	12	26.7	1	16.7
Between ED visits	19	42.2	2	33.3
After last ED visit	19	42.2	1	16.7
Continuous	4	8.9	0	0

Conclusions

Undergraduate students with multiple substance-related ED visits did not fully fit the expected high-risk group demographic.

- ✳ The majority of undergraduate students with substance-related ED visits only presented once. However, more than 5% of students with one substance-related ED visit presented on more than one occasion during an estimated 4-year time period typical for an undergraduate degree.
- ✳ The prevalence of substance-related ED readmission was nearly equivalent in male and female college students, which is inconsistent with known higher rates of current and binge drinking in the college population amongst males compared to females. However, this is consistent with emerging data for increased medical consequences for women who drink alcohol due to differences in metabolism between genders.
- ✳ Nearly 60% of students with multiple substance-related ED visits had a Greek (ie fraternity or sorority) affiliation. This re-emphasizes the potential risks of a college subculture known for alcohol and illicit drug consumption. This population was overrepresented in comparison to the estimated 35% of Greek-affiliated undergraduates. However, the more than 40% of non-Greek affiliated students may be overlooked in prevention planning due to the known high rate of substance use in Greek organizations.

The majority of these students were seen at CAPS either before, during, or after substance-related ED visits.

- ✳ Almost one-third of students with multiple substance-related ED visits never sought follow up care at CAPS, despite previous data indicating 70% were referred to University Student Health and an additional 5% were referred to their PCP (which is most often Student Health during the academic year).
- ✳ About one-fourth of these students sought care at CAPS prior to their first ED visit and less than 10% had continuous care at CAPS around the time of their multiple ED visits. This smaller population may represent students with comorbid psychiatric illness and/or increased psychosocial stress.

Students with the most ED visits had the least amount of CAPS follow up.

- ✳ Half of the students with 3 or more ED visits never had follow up with CAPS and none of them had continuous care at CAPS. This may suggest that students who are getting their care regularly within CAPS are less likely to be involved in repeated substance related ED visits, but the sample size is too small to make such conclusion and we do not have data on care received outside of Student Health.

ED physicians and staff may be the first and last health professionals with the opportunity to ensure appropriate follow up for high-risk college substance users.

- ✳ While determining the association between CAPS follow up and ED readmission is complicated by a small sample size, the low rates of follow up in this population magnifies the importance of appropriate referrals from the ED.
- ✳ ED health care professionals should consider more proactive approaches at scheduling students with proper follow up care that includes substance abuse treatment. Additionally, it would be important to work more collaboratively with the referral sources (CAPS in this instance) to encourage better follow up compliance. This data indicates that the chance of follow up after subsequent ED visits is low.

References

Substance Abuse and Mental Health Services Administration, Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-48, HHS Publication No. (SMA) 14-4863. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014.
Blevins D, Khanna S, Robinson D, Vakkalanka P, Ait-Daoud N, Holstege P. “Prevalence and Impact of Substance and Alcohol Misuse on College Students Presenting to the Emergency Department and Evaluation of Practical Referrals.” 168th Annual Meeting of the American Psychiatric Association; 2015 May 16-20; Toronto, Canada.