RESEARCH ARTICLE

Alcohol use in an academic medical school environment: A UC San Diego Healer Education Assessment and Referral (HEAR) Report

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BACKGROUND: Medical students and physicians in training and in practice are at risk for excessive alcohol use and abuse, potentially impacting the affected individuals as well as their family members, trainees, and patients. However, several roadblocks to care, including stigma, often keep them from seeking treatment.

METHODS: We analyzed data from anonymous questionnaires completed by medical students, house staff, and faculty from 2009 to 2014 as part of a depression awareness and suicide prevention program at a state-supported medical school in the United States. The authors explored associations between self-reported "drinking too much" and depression, suicidal ideation, substance use, intense affective states, and mental health treatment.

RESULTS: Approximately one-fifth of the respondents reported "drinking too much." "Drinking too much" was associated with more severe depression and impairment, past suicide attempts and current suicidal ideation, intense affective states, and other substance use. Those who were "drinking too much" were more likely than others to accept referrals for mental health treatment through the anonymous interactive screening program, suggesting that this program may be effective in skirting the stigma barrier for accessing mental health care for this at-risk population.

CONCLUSIONS: The self-reported prevalence of "drinking too much" among medical students, house staff, and faculty is high and associated with negative mental health outcomes. Targeted, anonymous screenings may identify at-risk individuals and provide mental health care referrals to those in need.

INTRODUCTION

Medical students and trainees are not immune to problems associated with excessive drinking and other substance use seen in other young adults.[1-3] Although some studies have found that alcohol abuse may occur less frequently in medical students in their clinical years compared with pre-clinical years,[1] and that older medical students were less likely to binge drink than younger students,[4] others have found that alcohol consumption increases as medical students progress into residency.[5,6] The trend doesn't stop there, as physicians in practice consume and abuse alcohol at substantial rates, at a rate at least as high as their counterparts in the general population.[7] Alcohol use disorders among physicians are associated strongly with physician distress, including emotional exhaustion, quality of life degradation, career dissatisfaction, depersonalization, depression, and suicidal ideation.[7,8]

This report focuses on self-reported unhealthy alcohol use and behaviors of medical students, house staff, and faculty at a state-supported medical school in the United States, and the relationship between the self-perception of "drinking too much" and other demographic, clinical, and treatment features. In this report, we (1) examine the number of students and physicians who checked off each of the 3 survey items that may identify potentially risky drinking behaviors: drinking "more than usual," drinking "too much," and experiencing "alcohol-related problems at school or work"; (2) examine the demographic variables associated with "drinking too much" in our sample, including position (medical student, house staff, and faculty); (3) assess the relationship between self-reported "drinking too much" to other indices of mental health and suicide risk; and (4) explore the role "drinking too much" may play in accepting mental health treatment.

METHODS

Overview

Since 2009, the University of California (UC) San Diego Healer Education Assessment and Referral (HEAR) program has provided educational seminars to School of Medicine students, house staff, and faculty about physician burnout, depression, and suicide. On an ongoing basis, the HEAR program invites all UC San Diego School of Medicine medical students, house staff, and faculty to participate in an anonymous online depression screening and referral program (interactive screening program [ISP]) supported by the American Foundation for Suicide Prevention (AFSP).

We collected the data reported in this paper from responses to the anonymous online Stress and Depression Screening Questionnaire completed by HEAR program participants through the ISP. This program and procedure have been described in detail elsewhere,[9-14] including in previous reports from the UC San Diego School of Medicine HEAR program that focused on the feasibility and initial results of the ISP,[11] medical student participation and referrals,[10] and suicide risk.[9] The UC San Diego Institutional Review Board approved this study and the UC San Diego Medical Center Ethics Committee approved the methodology of the program. Completing the online questionnaire implied informed consent.

Participants

From the inception of the UC San Diego HEAR program in May 2009 through April 2015, the HEAR program invited 1,134 medical students, 1,380 house staff (residents and fellows), and 1,922 faculty to participate in the online ISP. Students, house staff, and faculty received an invitation each year, thus more invitations were sent than there were unique recipients and some individuals may have participated more than once. From the invitations we sent to 4,436 individuals, we received 1,152 responses. However, we excluded 71 responses from program participants who completed the survey more than once (in those cases, only the most recent response was included) and another 5 responses based on discrepancies within reported demographics (eg, respondent reported being a 19-year-old faculty member). After these exclusions, we received 1,076 (24%) unique and usable responses from 411 medical students, 267 house staff, and 398 faculty members, reflecting response rates of 36%, 19%, and 21%, respectively.

The average age of participants was 35.07 (SD = 12.21) years (medical students: 25.55 [SD = 3.24], house staff: 30.84 [SD = 4.72], faculty: 47.81 [SD = 10.51]). Fifty-six percent of participants were female (medical students: 56%, house staff: 63%, faculty: 51%). Females were slightly over-represented in our respondent sample compared with the target population; about 48% of medical students, 50% of house staff, and 38% of faculty at UC San Diego are

female.[15,16] The majority (55%) of participants classified themselves as white (medical students: 43%, house staff: 55%, faculty: 69%); however, there was also a significant minority (22%) of participants of Asian descent, particularly among medical students (medical students: 32%, house staff: 21%, faculty: 14%). With respect to ethnicity, our sample approximates the UC San Diego School of Medicine population, in which about 39% of medical students, 44% of house staff, and 67% of faculty are white and about 33% of medical students, 19% of house staff, and 25% of faculty are Asian.[15,17] Compared with medical schools across the United States, UC San Diego School of Medicine has a higher Asian (33% vs 20%) and lower white population (39% vs 56%) of medical students.[17]

Measures

In collaboration with the UC San Diego School of Medicine HEAR program, AFSP modified the Stress and Depression Questionnaire items from the Depression and Suicide Screening Project Survey used in AFSP's initial ISP.[13,14] The modified Stress and Depression Questionnaire[9-11] includes items reflecting recent alcohol and drug use; the 9-item Patient Health Questionnaire (PHQ-9),[18] current suicidal thoughts, behaviors, and plans, and past suicide attempts; affective distress (eg, anxiety, panic, rage, hopelessness, desperation, loss of control) that have been linked to depression with suicidal ideation[19]; current psychiatric treatment including medications and/or counseling; and age, sex, race, and position in the program. We describe the measures in detail below. Unless otherwise noted, item responses were: "not at all" (0), "some of the time" (1), "a lot of the time" (2), and "most or all of the time" (3). Unless otherwise indicated, we considered items to be endorsed if the participant selected the item at all (ie, responded at least "some of the time").

Alcohol use. Participants rated the frequency of their behaviors within the last 4 weeks for the following items: "Drinking alcohol (including beer or wine) more than usual," "Feeling like you were drinking too much," and "Feeling that your work or school attendance or performance was affected by your drinking." We chose the item "Feeling you were drinking too much" for the predictor variable in the logistic regression analyses on the basis of its relative frequency of endorsement and its face validity as a measure of potentially risky drinking even if occurring only "some of the time." Because so few participants checked off "drinking too much," "a lot," or "most of

the time," and to make a distinction between those who endorsed this item "some of the time" and the higher responses, we combined responses to create a 3-level response scale "not at all," "some of the time," or "a lot or most of the time," rather than use the binary format we used for the outcome variables.

Other drug use. Participants rated the frequency of the following item during the last 4 weeks: "Using drugs (such as marijuana, cocaine, etc.) or taking prescription medications without medical supervision."

Depression severity. Participants completed the validated PHQ-9[18] that mirrors DSM-IV criteria for major depressive disorder.[20] We calculated the PHQ-9 total score and created a binary variable using a cut-off score of 15 to differentiate those with "moderately severe" or "severe" depression severity for the last 2 weeks.[18] The global functional impairment item was administered at the end of the survey and was revised slightly from the PHQ-9[18] item to: "If you checked off any problems on this questionnaire, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?" Item responses were "not difficult at all" (0), "somewhat difficult" (1), "very difficult" (2), or "extremely difficult" (3). We considered this item endorsed if participants reported experiencing any difficulty at all.

Suicidal ideation, behaviors, and risk. Participants rated the frequency of their behaviors in response to the questions: "How often during the last 2 weeks have you (a) had thoughts about taking your own life? (b) done things to hurt yourself? and (c) planned ways of taking your own life?" We combined these 3 variables plus the suicide ideation item from the PHQ-9 to create a binary "current suicide ideation" variable; participants who checked off any of these 4 items were rated as positive for "current suicide ideation." Additionally, we asked respondents if they had ever made a suicide attempt; participants could answer that question with a "yes" or "no."

Associated intense negative affective states. Participants rated how often they experienced feelings of irritability, stress, intense anxiety or panic attacks, intense loneliness, intense anger, hopelessness, desperation (an urgent need for relief), and feeling out of control during the past 4 weeks. Each of these affective states may signal suicidal crisis in depressed patients.[19] This scale and its scoring were adapted from the Affective State Questionnaire.[21] We combined these 8 variables to create a binary "intense affect" variable; participants who

endorsed at least 3 of these items as occurring "a lot of the time" or "most or all of the time" were rated as positive for "intense affect."

Current mental health treatment. Participants reported if they currently were taking medications for anxiety, depression, stress, sleep, or pain and if they were receiving counseling or therapy. Item responses were "yes" or "no."

Dialoguing and accepting referrals. The program counselors encouraged dialogue with participants through the anonymous ISP, which tracked how often participants talked with program counselors. Whenever possible, the program counselors tracked, by participant's user ID, whether or not a participant accepted referrals. However, program participants also had the option to call the counselors directly for referrals and were not required to identify themselves by their participant user ID.

Demographics. Participants completed demographic questions about age, race, sex, and position in the program (medical student, house staff, or faculty). We created the following categories for race: white (included white [Non-hispanic] or European American), Asian (included Asian, Asian-American, Pacific Islander, or Native Hawaiian), and Other (include Black, African-American, American Indian, Alaskan Native, Hispanic, Multiracial, Prefer Not To Answer, or Other). Sex included "male" or "female" only. With respect to position, "house staff" included both residents and fellows.

Data analysis

We used Stata Release 13.0[22] to perform all statistical analyses. We presented descriptive data as either frequencies and percentages or means and standard deviations. To evaluate age, sex, and race differences between those who endorsed "drinking too much" at different levels, we used chi-square tests for categorical variables and analyses of variance for continuous variables. We used logistic regressions to examine the relationship between self-rated "drinking too much" and other substance use, depression, suicidal ideation and behaviors, distressing affective states, as well as mental health care utilization. We used Firth's penalized maximum likelihood estimation to account for small cell sizes. Adjusting for age, sex, and ethnicity, we modeled each binary outcome variable in separate models with "drinking too much" status as the predictor variable. We present data as odds ratios (OR), with 95% confidence intervals (CI). We also present *P* values, noting

when results are statistically significant using a more conservative cut-off of $P \le .006$ (.05 divided by 8 comparisons) for the mental health indicators and $P \le .013$ (.05 divided by 4 comparisons) for the treatment variables to correct for multiple comparisons (Bonferroni corrections).

RESULTS

Self-reported alcohol use across sample (and/or by position). **TABLE 1** shows how frequently participants endorsed each of 3 risky drinking items with respect to the last 4 weeks, in total, and by position. For each item, a majority of the responses fell into the "not at all" category. About one-fifth of the sample reported drinking "more than usual" (23%) or "too much" (18%), although less than 4% of respondents felt their work or school attendance or performance was affected by their drinking in the last 4 weeks. Very few respondents left these items blank (missing data for "drinking more than usual", n = 0; "drinking too much", n = 2; "work or school performance affected", n = 3).

Demographic characteristics by level of endorsing "drinking too much" in the last 4 weeks. With respect to "drinking too much" during the last 2 weeks, we only found significant differences related to race ($\chi^2[4, N = 979] = 14.57, P = .006$). Due to list-wise deletion of cases with missing data (demographic variables: n = 95; "drinking too much" item: n = 2) in the subsequent logistic regression analyses, the analysis sample is actually smaller than the study sample. Therefore, in order to present demographics of the sample analyzed in the subsequent analyses, data summarized in **TABLE 2** includes only cases with complete data for the demographic and outcome variables. Trends for race and other variables are even stronger when all cases are included, regardless of missing data.

Relationships between "drinking too much" in the last 4 weeks and other behaviors and mental health indicators. Adjusting for age, sex, race, and position, participants who reported "drinking too much" also were more likely to report drinking more than usual (OR = 22.99, 95% CI, 15.21-34.76, *P* < .001), that drinking is affecting school or work performance (OR = 13.51, 95% CI, 7.62-23.93, *P* < .001), and using illicit or prescription drugs without medical supervision (OR = 2.13, 95% CI, 1.31-3.48, *P* < .05). Their depression was more likely to be rated moderately severe to

TABLE 1

Medical students, house staff, and faculty responses to alcohol use items

During the last 4 weeks have you experienced any of the following:	Position	Not at all	Some of the time	A lot of the time	Most of the time
Drinking alcohol (including beer or wine) more than usual (missing n = 0)	Medical students	325 (79.1%)	73 (17.8%)	12 (2.9%)	1 (0.2%)
	House staff	195 (73.0%)	64 (24.0%)	7 (2.6%)	1 (0.4%)
	Faculty	305 (76.6%)	82 (20.6%)	9 (2.3%)	2 (0.5%)
	TOTAL	**825 (76.7%)**	**219 (20.4%)**	**28 (2.6%)**	**4 (0.4%)**
Feeling like you were drinking too much (missing n = 2)	Medical students	346 (84.6%)	55 (13.4%)	7 (1.7%)	1 (0.2%)
	House staff	219 (82.0%)	45 (16.9%)	2 (0.7%)	1 (0.4%)
	Faculty	312 (78.4%)	70 (17.6%)	14 (3.5%)	2 (0.5%)
	TOTAL	**877 (81.7%)**	**170 (15.8%)**	**23 (2.1%)**	**4 (0.4%)**
Feeling that your work or school attendance or performance was affected by your drinking (missing n = 3)	Medical students	398 (96.8%)	13 (3.2%)	0 (0%)	0 (0%)
	House staff	257 (97.0%)	8 (3.0%)	0 (0%)	0 (0%)
	Faculty	378 (95.2%)	18 (4.5%)	1 (0.3%)	0 (0%)
	TOTAL	**1033 (96.3%)**	**39 (3.6%)**	**1 (0.1%)**	**0 (0%)**

severely (OR = 2.22, 95% CI, 1.43-3.46, $P < .001$) and be impaired by their problems (OR = 1.66, 95% CI, 1.24-2.22, $P = .001$). Those who reported "drinking too much" more likely were to endorse suicidal ideation and behaviors (OR = 1.83, 95% CI, 1.27-2.64, $P = .001$) and more likely to have attempted suicide in the past (OR = 3.49, 95% CI, 1.97-6.20, $P < .001$). Finally, "drinking too much" was associated significantly with endorsement of "intense affective states" (OR = 2.01, 95% CI, 1.50-2.70, $P < .001$). **TABLE 3** summarizes the association of "drinking too much" from each logistic regression model, adjusted for age, sex, race, and ethnicity and shows the frequencies of "drinking too much" responses for each outcome variable.

Relationships between "drinking too much" in the last 4 weeks and mental health treatment utilization. We found no statistically significant association between "drinking too much" and likelihood of currently being in therapy (OR = 0.22, 95% CI, 0.11-4.51, $P = .33$) or taking anxiety or depression medication (OR = 1.57, 95% CI, 1.08-2.28, $P = .02$). Although those who "drank too much" were not more or less likely to talk to program counselors (OR = 1.11, 95% CI, 0.81-1.53, $P = .52$), they were more likely to accept a mental health referral (OR = 1.79, 95% CI, 1.20-2.67, $P < .01$), significant at the more conservative cut-off of $P \le .013$ (Bonferroni correction for 4 comparisons).

DISCUSSION

In this report, we summarized self-reported, subjective drinking behaviors of a sample of medical students, house staff, and faculty at a university-based, state-supported medical school who completed a web-based, anonymous survey initially designed to identify those at risk for suicide. We also explored relationships between self-reported excessive drinking and other mental health indicators as well as mental health care utilization.

Although most medical students and physicians who responded anonymously to the ISP did not report that they were drinking "more than usual," "too much," or that their work or school attendance or performance was affected by their drinking, a meaningful minority of trainees and professionals did report these behaviors and feelings. Specifically, about 20% of the respondents felt they were drinking more than usual in the preceding 4 weeks and/or felt they were drinking too much, and almost 5% felt that their work or school attendance or performance was affected by their drinking. In general, these reported drinking behaviors were similar across medical students, house staff, and faculty. Albeit using a different measure and construct with limitations discussed below, our findings support evidence from previous studies reporting rates of alcohol use disorder among physicians and physicians in training ranging from 7% to 15%,[23] although they do not

TABLE 2

Relationships between self-rated "drinking too much" and demographic variables among sample evaluated in logistic regression (n = 979)

	Not at all (n = 792)	Some of the time (n = 163)	A lot or most of the time (n = 24)	χ² or *F*	*P*
Age [Mean (SD)]	34.66 (12.00)	36.64 (12.80)	38.63 (13.98)	2.83	.060
Sex					
Female	449 (82.7%)	79 (14.5%)	15 (2.8%)	4.20	.123
Male	343 (78.7%)	84 (19.3%)	9 (2.1%)		
Race					
White	417 (76.7%)	110 (20.2%)	17 (3.1%)	14.57	.006
Asian	187 (85.4%)	28 (12.8%)	4 (1.8%)		
Other	188 (87.0%)	25 (11.57%)	3 (1.4%)		
Position					
Medical students	311 (83.6%)	53 (14.2%)	8 (2.2%)	6.32	.177
House staff	198 (80.5%)	45 (18.3%)	3 (1.2%)		
Faculty	283 (78.4%)	65 (18.0%)	13 (3.6%)		

support some previous findings that drinking behaviors increase with age and/or experience as a physician.[23,24]

We also found significant relationships between "drinking too much" and other risky drinking and substance use behaviors, symptoms of depression, suicidal ideation, and other distressing affective states. The complex relationships between alcohol use, depressive and anxiety disorders, and suicide long have been recognized.[25-27] Thus, it was not surprising to find that respondents with greater depression, history of lifetime suicide attempts, or those who reported feeling intense negative affects "a lot" or "most of the time," were more likely to endorse "drinking too much" as well. Indeed, we report elsewhere[9] that those who feel their drinking is affecting their ability to work are 2 to 10 times more likely to report suicidal ideation. Although our finding of an association between depression and "drinking too much" is consistent with previous reports that indicate depressed individuals have more alcohol-related problems than the general population,[27] these results cannot speak to causality—whether those who are stressed and depressed turn to alcohol as self-medication, whether alcohol consumption begets depression, or whether both drinking and depression are causally related to other common factors. However, our findings do suggest that screening for depression or potentially risky alcohol use may identify some of the same individuals and may be fruitful path-

ways for identifying those at risk for suicidal thoughts and behaviors.

With respect to current mental health treatment utilization, we found no statistically significant relationship between "drinking too much" and receiving mental health care or talking to a counselor through the ISP. Yet, those who reported, "drinking too much" exhibited greater overall distress, depression, and suicidality, suggesting a troubling unfulfilled need for treatment in this high-risk group. That said, we were gratified to see that those who reported "drinking too much" were more likely to accept referrals, suggesting that the HEAR program may be helping this potentially undertreated population to find much needed support.

Implications

Health professionals, including physicians, do not cope necessarily with their personal problems in healthier ways than the general public, and this may be especially true for mental health,[28,29] including alcohol use.[30] Medical students and physicians may find it difficult to see themselves as patients and are either unable or unwilling to access relevant services, even when these are readily available.[3,23] The tragedy of lack of self-care is manifested not only in physicians' own personal and family lives, but also in the quality of care they provide.[8,31] Indeed, studies suggest physicians struggling with alco-

TABLE 3

Relationships between self-rated "drinking too much" and other mental health indicators[a]

		Not at all (n = 792)	Some of the time (n = 163)	A lot or most of the time (n = 24)	Adjusted[b] odds ratio (95% CI)	P
Drinking more than usual (missing n = 0)	Yes	90 (38.5%)	120 (51.3%)	24 (10.3%)	22.99 (15.21-34.76)	<.001[c]
	No	702 (94.2%)	43 (5.8%)	0 (0%)		
Drinking affecting school or work attendance or performance (missing n = 3)	Yes	3 (8.6%)	20 (57.1%)	12 (34.3%)	13.51 (7.62-23.93)	<.001[c]
	No	786 (83.5%)	143 (15.2%)	12 (1.3%)		
Using drugs (such as marijuana, cocaine, etc.) or taking prescription medications without medical supervision (missing n = 0)	Yes	34 (64.2%)	17 (32.1%)	2 (3.8%)	2.13 (1.31-3.48)	.002[c]
	No	758 (81.9%)	146 (15.8%)	22 (2.4%)		
PHQ-9 score ≥15 (moderately severe to severe depression over last 2 weeks) (missing n = 0)	Yes	37 (64.9%)	16 (28.1%)	4 (7.0%)	2.22 (1.43-3.46)	<.001[c]
	No	755 (81.9%)	147 (15.9%)	20 (2.2%)		
Problems made it at least somewhat difficult to do work, take care of things at home, or get along with other people (missing n = 9)	Yes	416 (78.2%)	97 (18.2%)	19 (3.6%)	1.66 (1.24-2.22)	.001[c]
	No	368 (84.0%)	65 (14.8%)	5 (1.1%)		
Current suicidal ideation (last 2 weeks) (missing n = 3)	Yes	77 (72.6%)	22 (20.8%)	7 (6.6%)	1.83 (1.27-2.64)	.001[c]
	No	712 (81.8%)	141 (16.2%)	17 (2.0%)		
Ever made suicide attempt (lifetime) (missing n = 0)	Yes	14 (58.3%)	5 (20.8%)	5 (20.8%)	3.49 (1.97-6.20)	<.001[c]
	No	778 (81.5%)	158 (16.5%)	19 (2.0%)		
Endorsed at least 3 intense affective states (missing n = 4)	Yes	176 (72.7%)	54 (22.3%)	12 (5.0%)	2.01 (1.50-2.70)	<.001[c]
	No	613 (83.7%)	107 (14.6%)	12 (1.6%)		

[a]All indicators reference behaviors in last 4 weeks unless otherwise noted.
[b]Adjusted for age, sex, and ethnicity.
[c]Significant at more conservative $P \leq .006$ (Bonferroni correction for 8 comparisons).

PHQ-9: 9-item Patient Health Questionnaire.

hol abuse or dependence were substantially more likely than other physicians to report making major medical errors.[7,8] Further, physicians with alcohol-related problems may be less likely to identify and provide treatment for patients with alcohol use disorders.[32]

At the medical student level, while many students believe that students' potentially unhealthy substance use should be addressed by the medical school, substance-using students are less likely to report substance use impairment among their peers.[33,34] Students report they do not know how to help a classmate[34] struggling with substance use, and even medical directors across training programs may not consistently report and address substance use disorder among trainees.[35] Organizational approaches for early identification of risky alcohol consumption among physicians followed by intervention and treatment where indicated should be supported strongly,[7] including providing education for fellow trainees and program leaders.

Even when care is available and accessible, barriers to care for health professionals may include lack of time, fear of stigmatization and discrimination, concerns about jeopardizing future job prospects, insurance and practice restrictions, fear of unwanted intervention, or issues regarding confidentiality and privacy.[36-39] Some of these fears may be well-founded; many physicians report that they believe medical professionals with a history of mental health disorders are less competent, less likely to be appointed to positions, and that experiencing depression or anxiety was a sign of personal weakness.[40] Relapse among physicians with alcohol and other substance use disorders identified during training may be common and those who relapse often eventually face criminal charges, loss of job or license, and even death.[35] Given the frequency and patterns of potentially risky drinking, the negative consequences associated with excessive drinking among physicians, and the reluctance for physicians to seek appropriate mental health care, focused interventions in medical education, training programs, and health care facilities may be necessary.

One such intervention is the UC San Diego School of Medicine HEAR program. The primary goal of the

HEAR program is to prevent suicide in medical students, house staff (residents and fellows), and faculty. To accomplish this goal, the HEAR program provides educational conferences and seminars to all departments and several key committees and programs in the medical school environment, focusing on education regarding physician burnout and suicide risk and promoting wellness and mental health treatment. In addition, the HEAR program has partnered with AFSP to administer AFSP's anonymous ISP, designed to identify individuals at risk for suicide and facilitate referrals to treating psychiatrists and other mental health professionals. Implemented at 8 medical schools across the country,[12] including the UC San Diego School of Medicine,[9-11] the ISP contains items that screen for depression, suicidal ideation and behaviors, alcohol and drug use, and intense affective and cognitive states that have been associated with suicide risk.

One of the unique features of programs such as the ISP described in this report is that it gives physicians an opportunity to seek mental health support and treatment anonymously. It is possible that, even with this "anonymous" system for seeking treatment, the stigma of mental health disorders, including the potential negative consequences of admitting to alcohol use disorders in the health care setting, still may keep individuals in need from seeking treatment. It is our hope that the findings from this report may help pave the way for more informed and targeted interventions, which might be more effective if programs can break the stigma barrier.

Limitations

There are several major limitations to this study. First, the alcohol use items in this questionnaire are not a validated measure for indicating the clinical presence of an alcohol use disorder, and the survey questions do not quantify the type or the amount of drinking and only pertain to the most recent 4 weeks. "Drinking too much" depends upon each individual's perception of "too much," which may vary depending upon the norms within each individual's social group. Nor is it clear that medical student and physician self-reports of "drinking too much" correlate with actual consumption or with actual alcohol-related problems, or that medical students, residents, and faculty physicians define what it means to "drink too much" similarly. There is no evidence to suggest the rates of "drinking too much" reported here correspond to alcohol use disorders in the general population. Thus, for future studies or programs wishing to detect potential substance abuse more accurately, it would be important to use validated and reliable measures of substance use and substance-related disorders, including assessments of alcohol, tobacco, and other psychoactive substance use.

With respect to our findings about the number of referrals resulting from contact with counselors through the ISP, it is important to note that not all referrals were linked to the participant ID in the system because participants had the option to call the counselors directly and to remain anonymous. As reported elsewhere,[9] at least 73 additional referrals were made by the HEAR program, but there is no way to know whether those who chose not to identify themselves had reported "drinking too much." Therefore, these data should be regarded as incomplete.

We cannot say, with any certainty, that the rates of "drinking too much" in our respondents mimic, exceed, or even fall behind the rates in those medical students, house staff, and faculty not responding to our survey. The goal of the HEAR program is to engage individuals who are at increased risk for depression and suicidal thinking by encouraging them to complete an anonymous screen. This focus may result in a sampling bias by engaging distressed individuals selectively. Thus, it is possible that the small percentage of participants who responded were more distressed and in need of support compared with those who did not respond. Conversely, it also is possible that those who did not respond were more impaired and less likely to ask for help. Although the response rate reported in this paper is more than double the response rate of some other studies using the ISP (eg, Garlow et al[14] reported an 8.1% response rate), over time we hope to increase our response rate. Additionally, the cross-sectional nature of this study does not allow for causal conclusions and the absence of any control groups limits comparisons to other populations. Finally, as noted above, the demographics of students, house staff, and faculty at UC San Diego School of Medicine is unique, with fewer whites and more Asians compared with many other U.S. institutions, and thus the generalizability of our results should be viewed cautiously. Because many institutions now are beginning to use AFSP's online interactive screening program,[10,12] it may become feasible to conduct multi-site studies on these important issues in the future, ideally incorporating control groups.

CONCLUSIONS

Despite the limitations, our findings suggest that a significant number of medical students, house staff, and faculty at this institution engage in potentially risky drinking behaviors. "Drinking too much" was associated with symptoms of depression, suicidal ideation, and other distressing affective states. However, most medical students and physicians were not seeking care. The effect of untreated alcohol and other mental health disorders among physicians is likely to affect not only the untreated providers themselves, but also their families, the patients in their care, and the future generations of physicians whom they mentor, teach, and lead. As students advance to become house staff and house staff emerge as faculty and practicing physicians, they have an increasing impact on patients and can serve as role models for the upcoming generation of physicians.

By destigmatizing mental health treatment for themselves and providing resources to colleagues to address mental health issues, including risky drinking, physicians may be in a better position to serve as positive role models for mental and physical health and to provide quality care to the patients they serve. Mental health screenings, such as the one used in this study, are one small, but potentially important, step in identifying those at risk and directing them toward appropriate care and support. Institutions also might consider implementing programs, such as the HEAR program,[9-11] to provide support and professional care for their providers. Such programs may not only be potentially beneficial to physicians and the patients they treat, but also may benefit the institution by mitigating risks associated with the negative outcomes of physicians with potentially unhealthy alcohol use and/or other mental health issues who are practicing while untreated. ∎

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