ORIGINAL ARTICLE

Prevalence of Alcohol Use Disorders Among American Surgeons

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Objectives: To determine the point prevalence of alcohol abuse and dependence among practicing surgeons.

Design: Cross-sectional study with data gathered through a 2010 survey.

Setting: The United States of America.

Participants: Members of the American College of Surgeons.

Main Outcome Measures: Alcohol abuse and dependence.

Results: Of 25 073 surgeons sampled, 7197 (28.7%) completed the survey. Of these, 1112 (15.4%) had a score on the Alcohol Use Disorders Identification Test, version C, consistent with alcohol abuse or dependence. The point prevalence for alcohol abuse or dependence for male surgeons was 13.9% and for female surgeons was 25.6%. Surgeons reporting a major medical error in the previous 3 months were more likely to have alcohol abuse or dependence (odds ratio, 1.45; $P < .001$). Surgeons who were burned out (odds ratio, 1.25; $P = .01$) and depressed (odds ratio, 1.48; $P < .001$) were more likely to have alcohol abuse or dependence. The emotional exhaustion and depersonalization domains of burnout were strongly associated with alcohol abuse or dependence. Male sex, having children, and working for the Department of Veterans Affairs were associated with a lower likelihood of alcohol abuse or dependence.

Conclusions: Alcohol abuse and dependence is a significant problem in US surgeons. Organizational approaches for the early identification of problematic alcohol consumption followed by intervention and treatment where indicated should be strongly supported.

Arch Surg. 2012;147(2):168-174

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THE HEALTH AND WELL-being of American surgeons has become the focus of several recent studies.[1-8] These studies have addressed interactions among quality of life (QOL), burnout, depression, suicidal ideation, and medical errors. However, the prevalence of alcohol use disorders and their relationship to these outcome measures were not explored.

See Invited Critique at end of article

For editorial comment see page 110

The prevalence of substance use disorders in the United States has been well documented.[9] Among the US population older than 12 years, 9.4% meet current criteria for substance abuse or dependence (including alcohol and all other abusable substances). Male subjects are twice as likely as female individuals to have met the criteria for alcohol dependence or abuse in the past year (10.5% vs 5.1%), and these findings are generally consistent across demographic groups.[10]

However, the prevalence of alcohol use disorders among physicians is unknown. Available data come from licensing boards, mortality studies, hospital statistics, treatment programs, surveys of training programs, and medical societies. From these sources, the prevalence of substance use disorders among US physicians has been estimated to range from 10% to 15%.[11-16] In addition, because of prescribing authority and access to high-potency opioids, physicians are more likely than the general population to abuse prescribed opioids and benzodiazepines.[16,17]

Recognizing the role that alcohol use disorders play in causing clinically significant impairment or distress in social, occupational, and other areas of functioning, we conducted a follow-up study of American surgeons in 2010 to determine the actual prevalence of such disorders among this population and to explore the relationships with personal and professional characteristics, surgeon distress, and recent self-reported events (eg, malpractice suits and medical errors).

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METHODS

PARTICIPANTS

Study eligibility and administration process were identical to the previous 2008 American College of Surgeons (ACS) study.[1-8] All surgeons who were members of the ACS, had an e-mail address on file with the ACS and permitted their e-mail to be used for correspondence with the ACS were eligible for participation in this study. Participation was voluntary and all responses were anonymous. The study was commissioned by the ACS Committee on Physician Competency and Health with oversight with respect to protection of human subjects by the Mayo Clinic institutional review board.

DATA COLLECTION

Surgeons were surveyed electronically in October of 2010. A cover letter stated that the purpose of the survey was to better understand the factors that contribute to satisfaction among surgeons. Participants were blinded to any specific hypothesis of the study. The survey included approximately 70 questions about a wide range of characteristics, including demographic information, practice characteristics, burnout, QOL, symptoms of depression, career satisfaction, substance use, malpractice suits, and medical errors.

Validated survey tools were used to identify burnout,[18-21] mental and physical QOL,[22,23] and symptoms of depression.[24,25] The Maslach Burnout Inventory (MBI) is the criterion standard for the assessment of burnout[18]; however, its length (22 items) limits its feasibility for use in long surveys addressing multiple topics. Many studies of burnout have focused on the presence of high levels of emotional exhaustion or depersonalization as the foundation of burnout among medical professionals.[26,27] In the present study, symptoms of burnout were assessed using 2 single-item measures adapted from the full MBI.[28] Emotional exhaustion was assessed by the question, "How often do you feel burned out from your work?" Depersonalization was assessed by the question, "How often do you feel you've become more callous toward people since you started your residency?" Each question was answered on a 7-point Likert scale with response options ranging from never to daily, identical to the MBI. These single items have been shown to correlate strongly with the emotional exhaustion and depersonalization domains of burnout as measured by the full MBI in a sample of more than 10 000 medical students, residents, and practicing physicians.[28]

Symptoms of high emotional exhaustion were defined by a frequency of feeling burned out from work of at least once a week. Similarly, symptoms of high depersonalization were defined by a frequency of feeling more callous toward people at least once a week. The areas under the receiver operating characteristic curve for the emotional exhaustion and depersonalization single items against their respective full MBI domain measure in previous studies were 0.94 and 0.93, respectively.[28] The positive predictive values of the single-item thresholds for high levels of emotional exhaustion and depersonalization were 88.2% and 89.6%, respectively, with positive likelihood ratios of 14.9 and 23.4, respectively.[28] When compared with the full MBI domain scores in studies of medical students, residents, and practicing physicians, these single-item measures have also been shown to provide similar estimates of effect for associations between burnout and key outcomes, including subsequent self-reported major medical errors, suicidality, and professional behaviors (L.N.D. and T.D.S.; unpublished data; 2009).

Symptoms of depression were identified using the 2-item Primary Care Evaluation of Mental Disorders, a standardized depression screening tool that performs as well as longer instruments.[24,25] Quality of life was measured by a single-item linear analog self-assessment in a variety of domains, including mental, physical, and overall QOL.[22,23] Each QOL domain was assessed on a scale ranging from 0 to 10, with response anchors ranging from "as bad as it can be" (0) to "as good as it can be" (10). Linear analog self-assessment instruments have been validated across a broad range of conditions and are widely used in QOL research.[22,23] Population-based normative data suggest that mean scores on QOL instruments for healthy individuals are generally greater than 70 when scaled on a range of 0 to 100 (eg, ≥7 on a scale of 0-10).[22,23]

Additional questions were developed to explore demographic factors and professional characteristics. Two questions, based on similar measures from previous physician surveys, were used to assess career satisfaction.[4,8] A career choice question asked, "If given the opportunity to revisit your specialty choice, would you choose to become a physician again?" The second specialty choice question asked, "If given the opportunity to revisit your career choice, would you choose to be a surgeon again?" Response options included definitely not, probably not, not sure (neutral), probably, and definitely yes. Surgeons with children were also asked whether they would recommend that their children pursue a career as a physician or surgeon, using the same response options. Responses of probably or definitely yes to these questions were considered to indicate greater career satisfaction. Recent malpractice suits were evaluated by asking surgeons, "Have you gone through a medical malpractice suit in the last 2 years?"

SCREENING FOR ALCOHOL USE DISORDERS

Studies have demonstrated that screening for heavy drinking is sensitive and that participants are willing to give honest information about their alcohol consumption when appropriate survey methods are used.[29] Although several methods have been shown to have efficacy,[30-32] we chose the Alcohol Use Disorders Identification Test, version C (AUDIT-C) to assess for heavy drinking in this anonymous survey because of its brevity and clarity.[33] The AUDIT-C is composed of the first 3 questions of the World Health Organization AUDIT.[34] The AUDIT-C was first described in patients undergoing treatment at Department of Veterans Affairs institutions but has now been validated in other US clinical populations.[35] Scores on the AUDIT-C range from 0 to 12. Higher AUDIT-C scores suggest a more likely consumption pattern of alcohol dependence.[33] According to standard scoring, a score of at least 4 for men or at least 3 for women constitutes problematic alcohol consumption (misuse), whereas a score of at least 5 for men or at least 4 for women indicates symptoms of alcohol abuse or dependence.[32,33,35] Problematic alcohol consumption consists of drinking that is risky and unhealthy without meeting *Diagnostic and Statistical Manual of Mental Disorders* (Fourth Edition, Text Revision)[36] criteria for abuse or dependence.

STATISTICAL ANALYSIS

Descriptive statistics were used to characterize sample demographics. We tested comparisons between surgeons with and without alcohol abuse or dependence using Wilcoxon Mann-Whitney tests and Fisher exact tests. Such comparisons with 3627 and 3570 surgeons reporting in the 2 groups have 95% power to detect an average difference of less than 5% of the standard deviation, a small effect size.[37,38] Accordingly, the *P* values in this article are not as important as the observed effect sizes. Consistent with recent advances in the science of QOL assessment, we defined a 0.5 SD in QOL scores a priori as a clinically meaningful effect size.[37,38] Linear regression was used to evaluate the in-

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Table 1. Relationship Between Personal and Professional Characteristics and Alcohol Abuse/Dependence

	No. (%) of Respondents		*P* Value
	No Symptoms	Symptoms[a]	
Age, y			
<35	161 (83.0)	33 (17.0)	<.001
35-44	1289 (80.8)	307 (19.2)	
45-54	1859 (83.1)	379 (16.9)	
55-64	1789 (86.1)	288 (13.9)	
≥65	910 (89.7)	105 (10.3)	
Sex			
Male	5233 (86.1)	846 (13.9)	<.001
Female	775 (74.4)	266 (25.6)	
Relationship status			
Single	483 (83.6)	95 (16.4)	<.001
Married	5307 (84.9)	946 (15.1)	
Partnered	158 (73.5)	57 (26.5)	
Widowed or widower	41 (82.0)	9 (18.0)	
Satisfaction with relationship with partner or spouse			
Extremely satisfied	3472 (85.8)	573 (14.2)	.003
Somewhat satisfied	1446 (82.4)	308 (17.6)	
Neutral	191 (83.8)	37 (16.2)	
Somewhat dissatisfied	245 (80.6)	59 (19.4)	
Extremely dissatisfied	106 (80.9)	25 (19.1)	
Have children			
Yes	5398 (85.3)	929 (14.7)	<.001
No	610 (76.9)	183 (23.1)	
Population of community where practice			
≤5000	64 (91.4)	6 (8.6)	.24
5001-20 000	357 (85.8)	59 (14.2)	
20 001-50 000	485 (85.4)	83 (14.6)	
50 001-100 000	769 (85.1)	135 (14.9)	
100 001-500 000	1635 (84.8)	292 (15.2)	
>500 000	2663 (83.4)	530 (16.6)	
Time in practice, y			
<10	1202 (81.3)	276 (18.7)	<.001
10-19	1613 (82.6)	339 (17.4)	
20-30	1995 (85.1)	348 (14.9)	
>30	1049 (89.2)	127 (10.8)	
Time worked, h/wk			
<40	482 (84.6)	88 (15.4)	.02
40-49	532 (82.1)	116 (17.9)	
50-59	1050 (82.7)	220 (17.3)	
60-69	1939 (84.8)	347 (15.2)	
70-79	754 (83.4)	150 (16.6)	
≥80	915 (87.5)	131 (12.5)	
No. of nights on call per week			
>Median	2234 (86.4)	351 (13.6)	<.001
≤Median	3418 (83.0)	699 (17.0)	
Primary practice setting			
Private practice	3117 (84.3)	581 (15.7)	.09
Academic medical center	1745 (83.1)	354 (16.9)	
Veterans hospital	143 (89.9)	16 (10.1)	
Active military practice	80 (85.1)	14 (14.9)	
Not in practice or retired	163 (84.9)	29 (15.1)	
Other	625 (86.8)	95 (13.2)	
Major medical error in past 3 mo			
Yes	161 (22.3)	561 (77.7)	<.001
No	943 (14.8)	5413 (85.2)	

[a] Indicates a score of at least 5 for men or at least 4 for women on the Alcohol Use Disorders Identification Test, version C.

cremental relationship of each measure of distress with the presence of alcohol abuse or dependence. In addition, we calculated the odds ratios (ORs) for abuse or dependence associated with positive screening results positive for depression, experience of burnout, each 1-point change in the burnout or the QOL score, and career satisfaction items. The multivariable associations among demographic characteristics, professional characteristics, and distress with alcohol abuse or dependence were assessed using logistic regression. We used forward and backward elimination methods to select significant variables for the models where the directionality of the modeling did not affect the results. The independent variables used in this model included age, sex, relationship status, children, specialty area, size of community, years in practice, hours worked per week, number of nights on call per week, practice setting, burnout (high scores on emotional exhaustion or depersonalization), depression, and major medical errors. All analyses were performed using commercially available software (SAS, version 9; [SAS Institute, Inc] or R [R Foundation for Statistical Computing]).

RESULTS

Of the 65 844 fellows and associate fellows (surgeons in their first year of practice) in the ACS at the time of the survey, 27 457 had e-mail addresses on record with the ACS and permitted use of their e-mail address for correspondence. Of these 27 457, a correct e-mail address could be confirmed for 25 073 (91.3%). Among these surgeons, 7197 (28.7%) returned surveys.

To separate alcohol consumption that may be problematic (misuse) from alcohol abuse or dependence, we analyzed the results using the 2 different scorings of the AUDIT-C. A score of at least 4 for men and 3 for women on the AUDIT-C is diagnostic of alcohol misuse, which is better defined as "unhealthy or problematic drinking."[32,33,35] A score of at least 5 for men and 4 for women indicates alcohol abuse and possible dependence.[32,33,35]

Overall, 15.4% of the 7197 respondents had an AUDIT-C score consistent with alcohol abuse or dependence. The relationships between demographic and practice characteristics and alcohol abuse or dependence are summarized in **Table 1**. Age, sex, and relationship status had a strong association with the presence of alcohol abuse or dependence. Female surgeons had almost twice the rates of abuse or dependence as male surgeons ($P<.001$). In addition, alcohol abuse or dependence was more likely in those who were younger ($P<.001$) and partnered ($P<.001$). Being dissatisfied with the relationship with a spouse or partner and not having children was more common in the presence of abuse or dependence ($P=.003$ and $P<.001$, respectively). There was no association with the size of the practice community. The longer surgeons were in practice, the less likely they were to have abuse or dependence ($P<.001$). A similar association occurred with hours worked ($P=.02$) and nights on call ($P<.001$), for which longer hours and more nights on call lowered the prevalence of abuse or dependence. Surgeons with alcohol abuse or dependence constituted 77.7% of surgeons reporting a medical error in the previous 3 months ($P<.001$).

Figure 1 and **Figure 2** demonstrate the univariate relationship between the emotional exhaustion and depersonalization domains of burnout and alcohol abuse or dependence. In Figure 1, greater frequency of the symptoms of emotional exhaustion resulted in higher percentages of alcohol abuse or dependence ($P<.001$). In Figure 2, greater frequency of the symptoms of callousness toward people resulted in higher percentages of alcohol abuse or dependence ($P<.001$).

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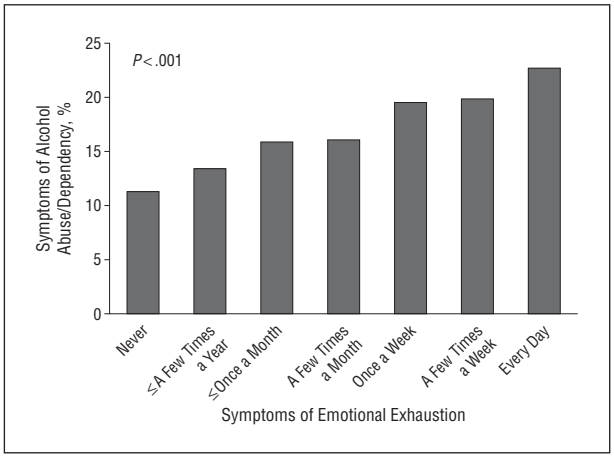

Figure 1. Emotional exhaustion and alcohol abuse/dependence among responding surgeons. Symptoms of alcohol abuse/dependence are indicated by a score of at least 5 for men or at least 4 for women on the Alcohol Use Disorders Identification Test, version C.

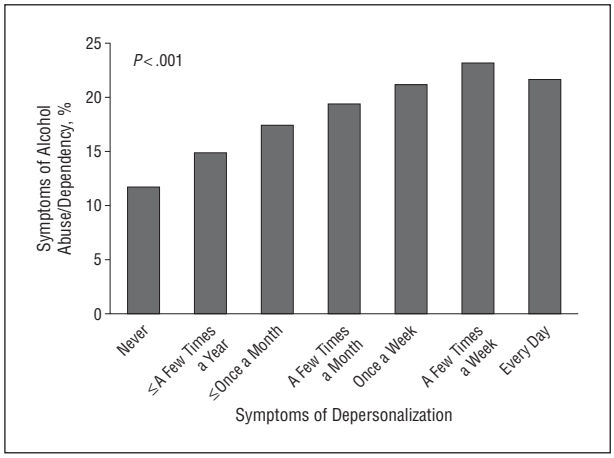

Figure 2. Depersonalization and alcohol abuse/dependence among responding surgeons. Symptoms of abuse/dependence are indicated by a score of at least 5 for men or at least 4 for women on the Alcohol Use Disorders Identification Test, version C.

Table 2 demonstrates the univariate relationship between alcohol use and burnout, depression, suicidal ideation, QOL, and career satisfaction. Burnout was more frequent in surgeons with alcohol misuse ($P<.001$) and in surgeons with alcohol abuse or dependence ($P<.001$). A positive screening result for depression was more likely with alcohol misuse ($P<.001$) and alcohol abuse or dependence ($P<.001$). Suicidal ideation in the preceding 12 months was present in 6.1% of surgeons with alcohol misuse ($P<.001$) and 7.9% of surgeons with alcohol abuse or dependence ($P<.001$). Career satisfaction and QOL were rated lower in surgeons with alcohol abuse or dependence ($P<.001$ for both).

Finally, we performed multivariable logistic modeling to identify factors independently associated with the presence of alcohol abuse or dependence (**Table 3**). Alcohol abuse or dependence was strongly and independently associated with burnout (OR, 1.25; $P=.01$), depression (OR, 1.48; $P<.001$), and recent major medical errors (OR, 1.45; $P<.001$) after we controlled for other personal or professional characteristics. The same was true for relationship status designated as partner vs single (OR, 2.29; $P<.001$).

COMMENT

In this large national study, 15.4% of surgeons met diagnostic criteria for alcohol abuse or dependence. To our knowledge, this study is the first of its kind to specifically look at the point prevalence of substance use disorders among physicians. Although this point prevalence may not be significantly different from what is found in the general population, the repercussions of use may be more consequential in physicians. Indeed, while we cannot determine cause and effect in this cross-sectional study, surgeons with alcohol abuse or dependence were substantially more likely to report a major medical error in the past 3 months, suggesting a potential relationship with quality of care.

Alcohol abuse or dependence was also strongly associated with surgeon distress, including emotional exhaustion, depersonalization, depression, suicidal ideation, QOL, and career satisfaction. We know from previous studies that the health and well-being of physicians affects the quality of care that they provide.[39-44] It is reasonable to surmise that emotional exhaustion, depersonalization, depression, suicidal ideation, decreased QOL, and decreased career satisfaction would have an adverse effect on quality of care. A variety of practice characteristics were also related to alcohol abuse: surgeons with abuse/dependence were more likely to be younger, female, working fewer hours per week, less often on call, and less likely to have children.

This study provides further evidence in support of a proactive approach to identify and treat a prevalent disorder that may affect the surgeon's ability to practice with skill and safety. In a previous report,[44] we hypothesized that surgeons experience a greater degree of stigma, shame, and fear when found to be chemically dependent than their nonsurgical colleagues and that surgeons are less likely to return to practice after treatment for chemical dependency. Through the present study, the ACS has taken a leadership role in the identification of alcohol abuse and dependence among its members and, in so doing, destigmatization of this disorder with the intent of promoting appropriate intervention and treatment. We hope that this study will serve as a model for other professional associations to follow. Alcohol abuse and dependence is a treatable and reversible condition with an excellent prognosis when identified early with appropriate intervention, treatment, and monitoring.[44,45] The relapse rate for surgeons who have been monitored for 5 years after treatment for chemical dependency is equal to that of nonsurgeons and one-third that of the general population.[45,46] Furthermore, with adequate monitoring, surgeons can safely be returned to the operating room after treatment.[44]

Our study is subject to a number of limitations. Although similar to other national survey studies of physicians,[47,48] our response rate of 28.7% is lower than that of physician surveys in general.[49] Although this low rate increases the possibility of response bias, several studies

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Table 2. Univariate Relationship Between Alcohol Use and Burnout, Depression, Suicidal Ideation, Quality of Life, and Career Satisfaction[a]

	Alcohol Misuse			Alcohol Abuse/Dependence		
	Respondents			Respondents		
	Symptoms[b]	No Symptoms	*P* Value	Symptoms[c]	No Symptoms	*P* Value
Overall burnout[d]	730 (29.6)	1172 (25.3)	<.001	387 (34.9)	1515 (25.3)	<.001
Positive screening result for depression	1036 (42.0)	1745 (37.8)	<.001	547 (49.5)	2234 (37.4)	<.001
Suicidal ideation						
Yes	150 (6.1)	173 (3.7)	<.001	88 (7.9)	235 (3.9)	<.001
No	2314 (93.9)	4444 (96.3)		1022 (92.1)	5736 (96.1)	
Quality of life, mean score						
Overall	7.4	7.4	.66	7.2	7.4	<.001
Mental	7.1	7.3	<.001	6.8	7.3	<.001
Physical	6.9	6.9	.47	6.6	7.0	<.001
Career satisfaction						
Would become a physician again (career choice) (n = 7177)	1812 (73.3)	3470 (74.8)	.18	775 (69.7)	4507 (75.1)	<.001
Would become a surgeon again (specialty choice) (n = 7166)	1962 (79.4)	3647 (78.7)	.49	859 (77.2)	4750 (79.2)	.14
Would recommend your children pursue a career as a physician[e]	1312 (61.3)	2459 (59.2)	.11	546 (59.2)	3225 (60.0)	.65
Would recommend your children pursue a career as a surgeon[e]	1087 (50.7)	2008 (48.4)	.08	441 (47.8)	2654 (49.4)	.37

[a] Unless otherwise indicated, data are expressed as number (percentage) of surgeons.
[b] Indicates a score of at least 4 for men or at least 3 for women on the on the Alcohol Use Disorders Identification Test, version C (AUDIT-C).
[c] Indicates a score of at least 5 for men or at least 4 for women on the AUDIT-C.
[d] Indicates that symptoms of emotional exhaustion and/or depersonalization are experienced weekly or more often.
[e] Data provided for those who answered yes.

Table 3. Factors Independently Associated With Symptoms of Alcohol Abuse/Dependence[a]

Independent Predictor	OR (95% CI)	*P* Value
Male (vs female) sex	0.56 (0.46-0.67)	<.001
Partnered (vs single)	2.29 (1.52-3.43)	<.001
Have children	0.77 (0.61-0.98)	.03
Hours worked per week, for each additional hour	0.99 (0.98-0.99)	<.001
Nights on call per week, for each additional night	0.94 (0.91-0.98)	.001
Other practice vs private	0.71 (0.55-0.92)	.01
Veterans practice vs private	0.46 (0.26-0.83)	.01
Burned out	1.25 (1.06-1.48)	.01
Positive screening result for depression	1.48 (1.26-1.73)	<.001
Major error in past 3 mo	1.45 (1.17-1.78)	<.001
Age, for each additional year older	0.99 (0.98-0.99)	<.001

Abbreviation: OR, odds ratio.
[a] Indicates a score of at least 5 for men or at least 4 for women on the Alcohol Use Disorders Identification Test, version C.

failed to identify significant differences between responding and nonresponding physicians in cross-sectional surveys.[49,50] We do not know whether more distressed surgeons are less likely to complete surveys because of apathy or more likely to complete surveys looking for resolution to their distress. We also do not know whether surgeons with alcohol abuse/dependence are less likely to respond to surveys. However, our sample size provides abuse/dependence estimates within 1.2% of the population rate with 95% confidence. If we had obtained a response from most of the surgeons, the accuracy would only have been within 0.63%. Although this error rate is based on the assumption that data are missing at random, even if a systematic bias existed such that those who did not respond had an 8% rate of abuse/dependence (eg, approximately half the rate of respondents), it would decrease our abuse/dependence estimate for the population by only 0.33%. Given our large sample size, our estimate of the abuse/dependence rate is therefore likely to have relatively small bias, even under a scenario of major nonresponse bias.

The second limitation is that by performing a cross-sectional study, we are unable to determine whether the associations between alcohol abuse/dependence and burnout, depression, medical errors, and QOL issues are causally related or the potential direction of the effects. Although the associations are strong and of substantial magnitude, we cannot determine, for example, whether alcohol abuse/dependence causes depression or the depression causes the alcohol abuse/dependence.

Finally, one can question the choice of the AUDIT-C as the screening instrument for alcohol abuse or dependence. The psychometric properties of the AUDIT-C for identifying problematic drinking (eg, hazardous to health, occupation) have a sensitivity of 0.86 and a specificity of 0.72 for men with a score of at least 4 and a sensitivity of 0.66 and a specificity of 0.94 for women with a score of at least 3.[33,35] We chose the cutoff of at least 5 for male surgeons and at least 4 for female surgeons because a representative sensitivity and specificity, respectively, for male surgeons at that level consistent with alcohol abuse or dependence is 0.68 and 0.90 and for female surgeons is 0.67 and 0.94.[33,35] The chance of the score being falsely positive at that level was 10% for male surgeons and 6% for female surgeons. This result allowed for a stronger association with alcohol consumption consistent with abuse or dependence and the other variables. However, higher specificity lowered sensitivity. Accordingly, by choosing these higher levels of the AUDIT-C, the results may actually underrepresent the problem.

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In conclusion, surgeons have alcohol use disorders at the same rate of or slightly higher than their counterparts in the general population. The presence of alcohol abuse/dependence among US surgeons has a strong association with several personal (ie, age, sex, relationship status, relationship satisfaction, and having children) and professional practice characteristics (ie, years in practice, hours worked, and nights on call), burnout, depression, suicidal ideation, QOL, career satisfaction, and recent medical errors. Support of this study by the ACS should serve as an example to other medical societies. These findings should also decrease the shame and stigma associated with alcohol abuse or dependence and encourage surgeons to pursue treatment and rehabilitation to promote patient safety and personal well-being.

Accepted for Publication: September 7, 2011.
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Author Contributions: Dr Oreskovich had full access to all the data in the study and takes responsibility for the integrity of the data and accuracy of the data analysis. *Study concept and design:* Oreskovich, Kaups, Balch, Hanks, Sloan, Meredith, Dyrbye, and Shanafelt. *Acquisition of data:* Oreskovich and Shanafelt. *Analysis and interpretation of the data:* Oreskovich, Kaups, Balch, Satele, Sloan, Buhl, and Shanafelt. *Drafting of the manuscript:* Oreskovich, Kaups, Hanks, Satele, Sloan, and Buhl. *Critical revision of the manuscript for important intellectual content:* Oreskovich, Kaups, Balch, Hanks, Satele, Sloan, Meredith, Dyrbye, and Shanafelt. *Statistical analysis:* Satele and Sloan. *Obtained funding:* Oreskovich, Hanks, and Shanafelt. *Administrative, technical, and material support:* Oreskovich, Kaups, Hanks, Buhl, Dyrbye, and Shanafelt. *Study supervision:* Oreskovich and Shanafelt.
Financial Disclosure: Ms Buhl and Dr Meredith were paid as coinvestigators by the Washington Physicians Health Program.
Additional Contributions: The ACS Board of Governors, Committee on Physician Health and Competency, provided the opportunity to perform this study and vigilance to all issues relating to physician health and well-being.

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INVITED CRITIQUE

Surgeon, Heal Thyself

Surgeons are not immune to alcohol problems. The article by Oreskovich et al[1] highlights a problem that has the potential to impair a surgeon's ability to practice with skill and safety. Alcohol use disorders in surgeons are often accompanied by other psychiatric disorders and professional burnout, all potentiating the risk of medical errors. Of particular concern is that the point prevalence for alcohol abuse or dependence in male surgeons was found to be 13.9% and for female surgeons almost double at 25.6%. This critical finding must serve as a catalyst for future investigation as to the cause, effective treatment, and prevention of alcohol use disorders among female and male surgeons.

Prevalence rates of alcohol disorders were determined using a validated instrument, the AUDIT-C. This study identifies surgeons who are in practice longer—and thus assumed to be more senior in age—to have lower rates of alcohol abuse and dependence. This deserves further exploration and clarification. Other special populations, such as international medical school graduates, also require additional scrutiny.

This study primarily focuses on alcohol, with no attention to the significant problem of short-acting opioid abuse and addiction,[2] primarily administered intravenously and diverted in the context of cardiac catheterization laboratories, operating and recovery areas, and emergency departments. Finally, all surgeons should know that there is help for these problems. Physician health programs are found in almost every state and provide confidential referral to treatment, guidance, and monitoring of the recovery process.[3]

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Financial Disclosure: None reported.

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