ORIGINAL CONTRIBUTION

Detecting Symptoms of Alcohol Abuse in Primary Care Settings

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Background: Studies on alcohol abuse are frequently based on patients who meet minimum diagnostic criteria, thus ignoring patients with individual symptoms of harmful or hazardous use. Consequently, we are unable to characterize alcohol-abusing patients with sufficient clarity to effectively focus screening for primary prevention.

Objective: To determine the prevalence of harmful and hazardous use of alcohol, assess screening instruments for detecting alcohol abuse or dependence, and assess the impact of alcohol use on other diagnoses treated in outpatient settings.

Design: Survey (cross-sectional study).

Setting: Hospital-based outpatient clinic.

Participants: Three hundred randomly selected adults (aged 18 years and older).

Main Outcome Measure: Diagnosis of alcohol abuse or dependence based on the Diagnostic Interview Schedule (DIS).

Results: About 18% met *DSM-IV* (*Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*) criteria of abuse or dependence while almost 50% had at least one symptom of harmful or hazardous use. The T-ACE questionnaire, a modified version of the CAGE questionnaire, was the most effective screening instrument for both men and women. Selected diagnoses, personal characteristics such as family history of alcohol abuse, and self-reported patterns of alcohol use could identify patients likely to meet diagnostic criteria.

Conclusions: Many symptoms of substance use disorders are not adequately addressed in outpatient practice. Little is known about how alcohol use in varying quantities affects health care utilization and treatment of conditions commonly seen in outpatient medicine. Consequently, we lack a full appreciation of the burden of disease borne by alcohol use and have yet to achieve a universally accepted method of approaching primary and secondary prevention of alcohol-related problems.

Arch Fam Med. 2000;9:814-821

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THE PREVALENCE of alcohol abuse or dependence in outpatient settings generally varies from about 15% to 20% depending on the population and the diagnostic criteria applied.[1-4] However, much of the burden of morbidity and mortality caused by substance use disorders is borne by patients who have fewer than the minimum number of symptoms required to meet diagnostic criteria or have experienced these symptoms for a shorter time than required.[5-8] Furthermore, alcohol abuse is known to cause or exacerbate many conditions commonly treated in outpatient settings even though the contribution of alcohol often is not recognized.[9,10] However, much of the research to date on substance use disorders in primary care settings has focused

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on secondary and tertiary prevention among patients meeting current diagnostic criteria. Much less is known about the epidemiology of alcohol use and how it affects conditions normally treated in outpatient settings or the impact of office-based primary prevention by clinicians on morbidity and mortality from alcohol use.

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SUBJECTS AND METHODS

Subjects were selected from the adult population of a hospital-based outpatient clinic that serves as the primary teaching site for a family medicine residency program in the Northeast. The practice population consists of approximately 10 600 active patients (60% adults and 40% children) who reside in a moderately sized industrialized city. The adult population is predominantly women between the ages of 18 and 45 years (approximately 75%), with a relatively small minority (mostly Hispanic) population of about 20%. Approximately 55% of the population were on Medicaid, 8% were older than 65 years, and fewer than 7% were uninsured.

Selection criteria included all English-speaking adult patients (aged 18 years or older at the time of the reference appointment) who were judged by their physician to be mentally competent (ie, able to understand and respond honestly to the questions asked), physically and emotionally fit to be interviewed, and who appeared for a scheduled appointment at the clinic during a 19-month period ending in February 1995. A random sample of patients was selected from the daily appointment logs of all scheduled appointments, which included new and established patients as well as routine, follow-up, and unscheduled acute visits.

Appointment logs consist of cells representing 15-minute intervals for each physician scheduling patients during a given clinic session (ie, morning, afternoon, or evening). There is 1 column on the log for each physician and a row for each 15-minute interval. Each physician was assigned a number and a computer-generated random number selected a physician for each clinic session. We used the first scheduled appointment for an eligible patient for that physician as the starting point. Thereafter, we would go to the next physician on the schedule and select the next appointment beginning 45 minutes after the first (ie, we expected the interviews to last approximately 30 minutes and allowed an extra 15 minutes leeway). Age was the only eligibility criterion that could be determined for established patients prior to the interview. We also checked the patient log to be sure the patient had not been previously interviewed or refused. New patients were generally selected unless the purpose of the visit was stated as a Well-Child Check, in which case we assumed that the patient was a child. Otherwise, new patients were selected and declared ineligible at the time of their appointment if they turned out to be younger than 18 years.

A total of 1021 unique patients were selected for study, 162 of whom had been selected more than once. Ultimately, 300 were interviewed, 114 refused, 61 were ineligible, 45 were unable at the time and never were reselected, and 501 never attended a scheduled appointment. If a patient was unable to be interviewed on a given appointment but did not refuse, he or she was retained on the eligible patient list and could be selected on subsequent visits. Only patients who refused or were found to be ineligible were taken off the eligibility list. The most common reasons for ineligibility (n=61) were language (24 [40%]), mental illness (15 [25%]), and age (12 [20%]). Three patients were ineligible because they were admitted to the hospital and 1 patient was deaf. There were no significant differences between participants and nonparticipants, although nonparticipants were a bit more likely to be female (86.0% vs 80.3%) ($P=.18$), about 4.6 years younger ($P=.06$), and had been patients in the practice for a shorter time (77.5 months vs 81.1 months) ($P=.61$) than participants.

A letter introducing the study was placed in the patient's chart with a note to the physician requesting that he or she attempt to recruit this patient unless there was some compelling medical or personal reason why the patient should not be interviewed on that particular day

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The US Preventive Services Task Force recommends screening all adolescent and adult patients not only against diagnostic criteria for abuse and dependence but also for potential harmful and hazardous use of alcohol.[11] While many screening instruments are widely accepted for use in medical practice, their performance is known to vary according to the age, sex, ethnicity and other characteristics of the population being screened, including the prevalence of cases in the population.[12-19] As such, it may not be reasonable to expect the same screening instrument to be effective for all patients in any outpatient setting.

Similarly, the effectiveness of treatment varies according to patient characteristics and drinking patterns as well as the frequency and intensity of the intervention.[20-22] For example, the effectiveness of brief interventions on heavy drinkers varies by patient sex and the clinical context under which the intervention is presented. Not surprisingly, studies have found that the effectiveness of the intervention is inversely related to the severity of the symptoms (ie, brief interventions are more effective on less severe cases).[20] Furthermore, any intervention is likely to be more effective when presented in the context of health problems that are recognized as related to alcohol abuse.[20]

Despite these findings, we still lack an established method of screening for harmful and hazardous use of alcohol as well as diagnosing and treating patients who meet full diagnostic criteria for abuse or dependence. We also need to identify screening instruments designed to detect symptoms of alcohol abuse in diverse demographic groups. In addition, we lack an adequate under-

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(common reasons for failing to recruit included patients not feeling well or the patient had just undergone an unpleasant treatment or distressing news that, in the physician's judgment, made it unreasonable to expect the patient to participate in a study [n=6]). All practicing physicians (including attendings and residents) at the clinic had been informed of the study in advance and agreed to cooperate. If they had any questions on the selection criteria or purpose of the study, they had access to one of the principal investigators during all clinic sessions.

If the patient agreed to be interviewed, the physician introduced the patient to the interviewer, who presented the patient with a consent form that had been approved by the internal review board, explaining the purpose of the study and any potential risks involved in participation. Since the only intervention was a standardized interview, there were no medical or treatment risks involved in participation. However, patients also agreed to allow the researchers access to their medical records to correlate their responses with their medical history. Diagnoses were chosen by the physician and based on the *International Classification of Primary Care*.[26]

The interview consisted of routine demographic questions as well as administration of the alcohol section of the Diagnostic Interview Survey (DIS),[27] the CAGE (**C** Have you ever felt the need to *c*ut down on your drinking? **A** Have you ever felt *a*nnoyed by criticism of your drinking? **G** Have you ever felt *g*uilty about your drinking? **E** Have you ever taken a drink ([*e*ye opener]) first thing in the morning?),[28] modified T-ACE (**T** *t*olerance to alcohol, **A** being *a*nnoyed by other's comments about drinking, **C** attempts to *c*ut down, and **E** having a drink first thing in the morning [*e*ye-opener],[29] and the Alcohol Use Disorders Identification Test (AUDIT)[30] screening tests, as well as a questionnaire developed by the authors to assess subclinical features of alcohol abuse. For example, patients were asked the question: "After you have had 1 drink containing alcohol, how often do you feel like you have had enough?" Responses were scored on a 5-point Likert scale as always, usually, sometimes, seldom, or never.

The T-ACE questionnaire is a modified version of the CAGE that replaces the guilt question with one on tolerance (ie, how many drinks does it take to make you feel high?). The interview took approximately 30 to 45 minutes and was conducted at the clinic, in person, by 1 of 5 trained interviewers immediately after the clinic visit. All interviewers were trained by a licensed clinical psychologist, who monitored their performance throughout the study.

We modified the scoring on the T-ACE by assigning only 1 point to the tolerance question while keeping positivity set at 2 or more of the possible 4 questions. The T-ACE was originally developed for a prenatal population to detect risk of fetal alcohol syndrome where a positive response to the tolerance question was sufficient for further inquiry. However, in a general clinic population, the modest increase in sensitivity resulting from lowering the threshold of positivity is not offset by the considerable drop in specificity (ie, false positives). Positivity on the CAGE was set at 2 or more positive responses out of 4 questions and a score of 4 or more was considered positive on the AUDIT.

The DIS queries more than 30 parameters of alcohol use and groups these into 9 symptoms of dependence and 2 symptoms of abuse. While a person must have at least 3 of these symptoms for a period of at least 1 month to meet diagnostic criteria, we treat each symptom here as evidence of harmful or hazardous use suitable for primary care intervention.

The analysis was performed using SAS version 6.07 off a mainframe. Differences in means were assessed using unpaired *t* tests, while differences in proportions were assessed using a χ^2 test and odds ratios with 95% confidence intervals (CIs). Logistic regression was used to calculate adjusted odds ratios.

standing of how alcohol use to any extent affects conditions commonly treated in outpatient practice and how this affects utilization patterns and treatment outcomes among alcohol-consuming patients.

A cross-sectional study of 5505 adult patients found that documentation of an alcohol abuse problem in the medical record was significantly associated with 29 of 34 diagnoses examined (W.H.M., S.M.L., M.R.L., S.W.D., unpublished data, 1993), confirming a large body of research associating alcohol abuse with conditions commonly treated in outpatient practice.[23-25] These diagnoses included both medical conditions, such as hypertension, diabetes, and gastritis, as well as psychosocial diagnoses, such as depression, anxiety, and marital problems. This study suggested that as many as 3 of 4 patients meeting diagnostic criteria for alcohol abuse or dependence were never diagnosed as having an alcohol problem and, conversely, that many of the patients who were treated for alcohol problems did not meet minimum diagnostic criteria for alcohol abuse or dependence.

The present study was designed to assess the prevalence of individual symptoms of harmful and hazardous use of alcohol as well as patients meeting full diagnostic criteria for abuse or dependence using standardized instruments. We also wanted to identify screening instruments that could be shown to be effective in a family practice clinic population. Finally, we wanted to learn more about the clinical epidemiology of alcohol abuse as it presents in primary care settings and characterize the alcohol-abusing patient in a way that would help focus screening efforts more effectively.

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Table 1. Patients Meeting Diagnostic Interview Schedule (DIS) Criteria for Diagnosis of Lifetime Abuse or Dependence vs Patients Whose Conditions Were Diagnosed by Their Physician

Physician Diagnosis	DIS Criteria, No. (%)		Total No. (Mean No.)
	Positive	Negative	
Positive	9 (17.0)	5 (2.0)	14 (4.7)
Negative	44 (83.0)	242 (98.0)	286 (95.3)
Total	**53** (17.7)	**247** (82.3)	**300** (100.0)

RESULTS

While the lifetime prevalence of alcohol abuse or dependence as detected by the DIS in this study was 17.7% (n=53) (**Table 1**), fewer than 5% of the adult population had ever had an alcohol use disorder diagnosed in their medical record. As such, only 9 (17%) of the 53 patients meeting DIS criteria were recognized by their physician as having an alcohol-related problem; 44 (83%) were missed. On the other hand, among the 14 patients (4.7%) who had been treated for an alcohol problem, 5 (36%) did not meet sufficient diagnostic criteria for abuse or dependence using the DIS.

Performance of the various screening instruments commonly used in primary care practice are compared in **Table 2** and stratified by sex. The CAGE had an overall sensitivity of 66% against the DIS, with a specificity of 92%. The instrument performed comparably on both parameters for men and women, although it was somewhat more sensitive for men (69% vs 65%). The AUDIT had an overall sensitivity of 68% but considerably less specificity (79%) and was considerably more sensitive among men than women (81% vs 62%). The modified T-ACE performed better than either the CAGE or the AUDIT in the population as a whole and in both sexes. Like the other 2 tests, the T-ACE was more sensitive in men than women (81% vs 70%) but somewhat more specific in women than men (92% vs 86%). None of the instruments performed more than 90% on both parameters.

The prevalence of the individual DIS symptoms of dependence and abuse in this population are shown in **Table 3** and vary from 7% to 27%. More than 25% of the population (n=77) admitted to frequent intoxication, developing tolerance (ie, needing more alcohol to achieve a desired effect), persistent desire (ie, difficulty cutting down or making rules for yourself), or drinking despite harm (ie, continued drinking after social, legal, or medical problems caused by drinking). Less frequent, but quite common, symptoms include consuming more than intended (51 [17.0%]) and spending inordinate amounts of time consuming alcohol or getting over its effects (33 [11.0%]). Abuse despite risk (48 [16.0%]) includes symptoms such as driving under the influence of alcohol or accidentally injuring oneself while drinking.

Some of the less common but more severe symptoms among subjects, such as withdrawal (31 [10.3%]), use to relieve symptoms of withdrawal (21 [7.0%]), or forgoing important activities to drink (23 [7.7%]), are worthy of closer scrutiny. For example, experiencing physiological withdrawal symptoms, such as tremors, sweating, and tachycardia, and needing to relieve these symptoms with alcohol are evidence of excessive use over an extended period. Similarly, forgoing important job or family obligations to drink is an important indicator of addiction severity.

Table 2. Performance of Screening Instruments in Detecting Diagnostic Interview Schedule Criteria for Alcohol Abuse or Dependence (n = 300)

	Sensitivity, %	Specificity, %
AUDIT (≥4)		
Men	81	77
Women	62	79
Total	68	79
CAGE (≥2)		
Men	69	93
Women	65	92
Total	66	92
T-ACE (≥2)		
Men	81	86
Women	70	92
Total	74	91

**AUDIT indicates Alcohol Use Disorders Identification Test. For a more complete definition of CAGE and T-ACE, please see the "Subjects and Methods" section.*

Table 3. Diagnostic Interview Schedule Symptoms of Alcohol Dependence and Abuse

Symptoms*	No. (%)
Dependence	
Consume more than intended	51 (17.0)
Persistent desire	79 (26.3)
Time spent consuming	33 (11.0)
Frequent intoxication	81 (27.0)
Forgo activities to drink	23 (7.7)
Drink despite harm	77 (25.7)
Tolerance	81 (27.0)
Withdrawal	31 (10.3)
Use to relieve withdrawal symptoms	21 (7.0)
Abuse	
Abuse despite harm	77 (25.7)
Abuse despite risk	48 (16.0)

**See text for further explanation of symptoms. n = 300.*

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Table 4. Prevalence of DIS Symptoms of Alcohol Abuse or Dependence and Most Recent AUDIT Symptom and Self-perceived Excessive Drinking*

	No. (%)
No. of DIS symptoms	
None	152 (50.7)
1	48 (16.0)
2	27 (9.0)
3	25 (8.3)
4	15 (5.0)
≥5	33 (11.0)
At least 1 DIS symptom	148 (49.3)
At least 1 AUDIT symptom in past year	112 (37.3)
Self-perceived excessive use of alcohol (past 30 days)	55 (18.3)

**DIS indicates Diagnostic Interview Schedule; AUDIT, Alcohol Use Disorders Identification Test. n = 300.*

Table 5. Diagnoses and Patient Characteristics Associated With Lifetime History of Alcohol Abuse or Dependence Diagnosis*

	DIS Criteria, No. (%)		
	Positive	Negative	OR (95% CI)
Diagnoses			
Anxiety	16 (30.2)	34 (13.8)	2.71 (1.36-5.40)†
Depression	16 (30.2)	31 (12.6)	3.01 (1.50-6.05)†
Tobacco abuse	17 (32.1)	47 (19.0)	2.01 (1.04-3.88)†
Low back pain	12 (22.6)	45 (18.2)	1.31 (0.64-2.70)
Obesity	7 (13.2)	42 (17.0)	0.74 (0.31-1.76)
Diabetes mellitus	4 (7.6)	30 (12.2)	0.59 (0.20-1.75)
Hypertension	12 (22.6)	54 (21.9)	1.05 (0.51-2.13)
Gastric ulcers	13 (24.5)	36 (14.6)	1.91 (0.93-3.91)
Gastritis	2 (3.8)	20 (8.1)	0.45 (0.10-1.97)
Asthma	7 (13.2)	18 (7.3)	1.94 (0.77-4.90)
Characteristics			
Family history of alcohol abuse	33 (62.3)	110 (44.5)	2.06 (1.12-3.78)†
Depressive symptoms (≥2)	32 (60.4)	74 (30.0)	3.56 (1.93-6.58)†
History of physical abuse as a child	36 (67.9)	73 (29.6)	5.05 (2.67-9.56)†
History of sexual abuse as a child	24 (46.1)	59 (24.0)	2.72 (1.46-5.04)†
Not satisfied with 1 drink	38 (71.7)	98 (40.3)	3.75 (1.96-7.18)†

**DIS indicates Diagnostic Interview Schedule; OR, odds ratio; and CI, confidence interval. n = 300.*
†P<.05.

Not only are these symptoms common independently, but collectively they identify a considerable at-risk population in the primary care setting. Almost half (148 [49.3%]) had at least 1 symptom of alcohol abuse or dependence during their lifetime (**Table 4**), any one of which is suitable for secondary preventive interventions. In addition, 112 (37.3%) had at least 1 AUDIT symptom in the past year and 55 (18.3%) admitted to "drinking too much" within a month of the interview. These findings suggest that symptoms are not only common but also appear in close proximity to the medical encounter.

Table 6. Alcohol Abuse and Dependence Using Logistic Regression Main Effects Model

Variables	Odds Radio (95% CI)*
Family history	1.92 (0.98-3.75)
Age, y (30-39, reference group)	2.10 (1.05-4.20)
Depressive symptoms	3.83 (1.97-7.46)
Not satisfied with 1 drink†	4.50 (2.23-9.09)

**CI indicates confidence interval. The log likelihood of –2 was 45.63; P<.0001; df = 4.*
†Patients who responded never, rarely, or sometimes to the question "After 1 drink of alcohol, how often do you feel like you have had enough?" were considered to lack satiation.

In this study, we confirmed significant associations between alcohol abuse or dependence (as detected by the DIS) and diagnoses of depression and anxiety (**Table 5**). Patients meeting DIS criteria for alcohol abuse or dependence were 2.71 times more likely to have anxiety disorders (95% CI, 1.36-5.40) and 3.01 times more likely to be diagnosed as having depression (95% CI, 1.50-6.05). Similarly, conditions such as gastric ulcers, asthma, and low back pain tended to be somewhat positively associated with alcohol abuse or dependence but failed to reach significance in this study. The positive associations with hypertension, diabetes, and gastritis observed in our earlier study were not confirmed here.

On the other hand, several personal characteristics proved helpful in distinguishing alcohol abusing or dependent patients. For example, smokers were 2.01 times more likely (95% CI, 1.04-3.88) and patients with a family history of alcohol abuse in a first-degree relative were 2.06 times more likely (95% CI, 1.12-3.78) to meet DIS criteria for abuse or dependence. Similarly, patients with a history of physical abuse as a child were 5 times more likely to develop alcohol abuse or dependence (95% CI, 2.67-9.56), and a history of sexual abuse as a child increased the risk of meeting DIS criteria by 2.72 times (95% CI, 1.46-5.04). Also, admitting to at least 2 of 3 depressive symptoms (ie, a month or more of feeling blue, lack of pleasure, or loss of energy) was significantly associated with alcohol abuse or dependence (OR, 3.56; 95% CI, 1.93-6.58). Finally, patients who were not at least usually satisfied with 1 drink were 3.75 times more likely to meet DIS criteria for alcohol abuse or dependence (95% CI, 1.96-7.18). This battery of questions has a sensitivity of 71.7% and a specificity of 59.7% and may prove to be a powerful indicator of a patient's propensity to abuse alcohol.

Several logistic regression models were tested using various stepwise techniques and the main effects model presented in **Table 6** represents the most par-

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simonious and clinically relevant model tested. Age was grouped and dichotomized, using ages 30 to 39 years as the reference group and younger than 30 years or older than 39 years as the control group (note that stratified analysis by age in 5-year intervals showed that the prevalence of alcohol abuse peaked in the 30- to 39-years age groups). Ultimately, a positive family history of alcohol abuse, age (30-39 years), admitting to at least 2 depressive symptoms, and reporting not being satisfied with 1 drink were the risk factors most powerfully associated with meeting DIS criteria of alcohol abuse or dependence. Adjusting for family history and age, patients with depressive symptoms were 3.83 times more likely to meet diagnostic criteria (95% CI, 1.97-7.46), and patients who were not usually satisfied with 1 drink were 4.50 times more likely to meet diagnostic criteria (95% CI, 2.23-9.09). Similarly, patients between ages 30 and 39 years were twice as likely (95% CI, 1.05-4.20) and patients with a family history were 1.92 times more likely to meet diagnostic criteria (95% CI, 0.98-3.75).

COMMENT

The purpose of this study was to characterize alcohol-abusing patients in a manner that would help focus screening efforts in primary care settings to prevent morbidity and mortality resulting from alcohol abuse. We found that 17.7% of the adult population met DIS criteria for alcohol abuse or dependence, but only 17.0% of those (n=51) had ever been treated for an alcohol problem. These findings support previous studies that suggest that as many as 5 of 6 patients who meet DIS criteria for abuse or dependence go unrecognized in primary care settings and that a considerable burden of disease is borne by these patients.[5-8]

All the standardized screening instruments tested in this study were more sensitive in men than women, lending support to the suspicion that there is a sex bias in these instruments. The CAGE was the least sex-biased, with only a 4-point difference in sensitivity and virtually identical specificities. The AUDIT showed the largest disparity in sensitivity between sexes, followed by the T-ACE.

While any of the standardized screening instruments tested improved detection of alcohol-abusing patients, the T-ACE, with our modification to the scoring of the tolerance question, was more effective than either the CAGE or the AUDIT in identifying patients who meet diagnostic criteria (sensitivity) and distinguishing patients who do not meet criteria (specificity). Even more remarkable, the T-ACE, which had been developed for a prenatal population to minimize false-positive responses to the guilt question on the CAGE, had comparable specificity in both sexes and was actually more sensitive among men than women.[27] Perhaps the tolerance question, which queries the number of drinks required to achieve a certain effect, may be more associated with a pattern of abuse than the CAGE guilt question, which could be answered positively even after 1 regretful episode. Furthermore, among the patients who were T-ACE positive but DIS negative, 82% had at least 1 symptom of alcohol abuse or dependence and only 4 (18%) were asymptomatic. In any case, the T-ACE was a more effective screening instrument in this population, but further study is needed to determine if it is equally effective in other patient settings.

Among the more compelling findings is discovery of the high prevalence of individuals with symptoms of harmful and hazardous drinking among otherwise a-symptomatic patients in primary care settings. Until recently, much of the attention on alcohol abuse has focused on patients who met full diagnostic criteria for the disorder, ignoring a sizable group of people whose use of alcohol puts them and others at increased risk of progressive morbidity and eventual mortality and, also, ignoring symptoms that need to be taken into consideration when prescribing certain habit-forming cross-dependent medications such as benzodiazepines. These findings also support the notion that alcohol use disorders represent more of a spectrum of illness than previously recognized and that morbidity and mortality needs to be assessed on a continuum rather than as a dichotomous entity.

Patient characteristics, such as family history, age, and related symptoms, could be used to focus screening efforts for alcohol abuse and dependence in much the same way as they are used with other chronic diseases, such as cancer and heart disease. In particular, patients who have a family history of alcohol abuse, symptoms of depression, and/or admit that they usually are not satisfied with 1 drink are significantly more likely to meet diagnostic criteria for abuse or dependence. Furthermore, any combination of the risk factors identified in the logistic model significantly contribute to its predictive value and should be taken into consideration in focusing attention in primary care. Although both male sex and being between 30 and 39 years of age were strong predictors of meeting DIS criteria, for obvious reasons we would not recommend limiting screening to men between ages 30 and 39 years.

We were somewhat less successful in identifying the extent to which alcohol abuse (or use) affects medical conditions commonly treated in outpatient practice. While patients who met diagnostic criteria for alcohol abuse or dependence were significantly more likely to be treated for anxiety and depression,

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we were unable to establish similar relationships between alcohol abuse and hypertension, diabetes, gastritis, ulcers, and other conditions known to be caused or exacerbated by alcohol use (W.H.M., S.M.L., M.R.L., S.W.D., unpublished data, 1993).[23,24] Furthermore, we were unable to estimate the extent to which alcohol contributed to added complexity in the treatment and management of these conditions as they appear in primary care settings. Further research with larger samples will be needed to verify these important relationships. Excessive alcohol consumption is known to cause or exacerbate many conditions (eg, gout, diabetes mellitus, hypertension) commonly treated in outpatient settings, and proper treatment of these conditions requires that alcohol use be accurately assessed and monitored.

These results offer empirical support for the US Preventive Services Task Force recommendation to screen all adolescent and adult patients not only against diagnostic criteria for alcohol abuse and dependence but also for symptoms of harmful or hazardous use as part of routine preventive care. Studies suggest that harmful and hazardous symptoms are quite common in primary care settings, and there is a growing body of evidence that such symptoms are very amenable to brief interventions by primary care physicians.[20] Such efforts require a more complete assessment of quantity and frequency of alcohol use as well as assessment of the medical, psychosocial, and cultural context in which it is used. However, these findings also present a challenge to primary care physicians, many of whom currently are doing a suboptimal job of diagnosing and referring patients who meet full diagnostic criteria for abuse and dependence. By screening every patient for signs of trouble from drinking, they will have an opportunity to increase their sensitivity to recognizing alcohol problems, and possibly intervening before serious consequences cause a decline in their patients' health and likelihood of successful recovery.

This study was conducted in an adult, predominantly female population seeking primary care at a hospital-based outpatient family practice clinic with a relatively small minority (mostly Hispanic) population. The advantage of this population for this type of study is that it is often overlooked in studies on alcohol abuse in outpatient settings, which frequently focus on older, predominantly male patients. In addition, this population is quite similar to many primary care practice populations throughout the country where these results may be directly generalizable.

Finally, it is becoming increasingly clear that more precise screening instruments are needed to assess potential harmful and hazardous use of alcohol as well as alcohol abuse or dependence in various demographic populations. As such, these results may not apply to adolescents or the elderly and the relationships observed here may be different among various racial and ethnic groups. As we learn more about patterns of use and abuse of alcohol in these different populations, we will be in a better position to recommend effective techniques of primary as well secondary and tertiary prevention of morbidity and mortality due to alcohol.

Accepted for publication June 6, 2000.

This study was funded in part by grant G9312 from the American Academy of Family Physicians (Mr McQuade and Dr Levy).

This article is dedicated to the memory of Arthur F. McQuade, Sr.

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Clinical Pearl

Patient Satisfaction With General Practitioner Care After Breast Cancer Higher Than Specialist-Care Hospital Setting

In Ottowa, 296 women were randomly assigned to follow-up of their breast cancer by their own general practitioner or by a hospital outpatient specialty clinic. During and at the end of the trial, statisically significant differences were seen in 9 of 12 patient satisfaction questions, favoring general practice follow-up. The hospital outpatient specialty clinics had greater satisfaction for only 1 item about service delivery. (*Br J Gen Pract*. 1999;49:705-710.)

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