Use of the Family CAGE in Screening for Alcohol Problems in Primary Care

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Use of the Family CAGE in Screening for Alcohol Problems in Primary Care

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Objective: To establish the reliability and validity of the Family CAGE (an acronym indicating Cut down on drinking; Annoyed by complaints about drinking; Guilty about drinking; had an Eye-opener first thing in the morning), a four-item instrument intended to assess family alcohol–related problems.

Design: Two distinct cross-sectional studies using a survey, and in one study, retrospective chart review.

Participants: A random sample of 172 adult patients presenting for nonurgent care to a network of family practice settings and a convenience sample of 107 patients who smoked presenting to a university family practice residency training setting.

Main Outcome Measures: The Family CAGE was compared with alcohol-related variables and scales measuring psychosocial constructs. In the first study, these scales included the Family Stress and Coping Scale; Profile of Mood States; the Family Problems Checklist; and the Duke/ University of North Carolina Mini-Health Profile. Chart review included medical utilization rates and prescription of medications. In the second study, a revised version of the Family CAGE was compared with other scales such as the standard CAGE questionnaire; an "Anomy" Scale; the Catchment Epidemiologic Study–Depression Scale; a global self-assessment of alcohol-related problems; and a self-report of lifetime history of major depression and recent self-limited depression.

Results: The Family CAGE showed strong internal consistency reliability, with Cronbach's α coefficients of .84 in the first study and .89 in the second. Construct validity was supported by Family CAGE correlations with family stress, family problems, depression, anxiety, individual stress, and marital dissatisfaction. The Family CAGE was strongly correlated with global assessment of family alcohol-related problems, and was superior to this variable in predicting help-seeking behavior. The Family CAGE was also significantly correlated with a higher sick visit rate and more medications prescribed (despite no difference in functional health status). The standard CAGE was correlated with a recent history of self-limited depression, while the Family CAGE was correlated with a lifetime history of major depression. Sensitivity and specificity rates vary depending on the criterion addressed, but a cutoff score of 2 or more appears to offer the best clinical information.

Conclusion: The Family CAGE appears to be a reliable, valid, utilitarian measure of family alcohol problems. It offers more information than either a single-item global assessment regarding family alcohol-related problems or the standard CAGE questionnaire. The Family CAGE is strongly correlated with other important psychosocial problems, prescription of psychotropic medications, and health-care utilization. It is brief, understandable, and equally effective in interview and self-administered formats.

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E ffective screening is the first step in the diagnosis and treatment of alcoholism. Physicians have long recognized the importance of family corroboration of alcohol history to avoid underdiagnosis resulting from patient denial.[1] Little effort, however, has been made to screen the presenting patient for alcohol problems in other family members. Use of such a screening device could help identify nonattending family members, who could then be recruited to early treatment.

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MATERIALS AND METHODS

THE FAMILY CAGE

The CAGE questionnaire is a four-item alcohol-screening instrument with demonstrated relevance for primary care in clinical, educational, and research settings.[4-6] The CAGE asks whether the respondent has ever "needed to *Cut* down on their drinking; felt *Annoyed* by complaints about their drinking; felt *Guilty* about their drinking; or, had an *Eye*-opener first thing in the morning." The Family CAGE is a parallel instrument that simply broadens the standard CAGE items to include "you or anyone in your family" (**Table 1**). The instrument is intended to screen for *alcohol problems* in families, *not* to diagnose family alcoholism. A positive finding on the Family CAGE implies a greater relative risk for alcoholism in the family and should be followed by a more thorough diagnostic assessment. This article reports on two versions of the Family CAGE used in two different primary-care studies. In one study (sample A, examining family stress and coping), only one response set was offered, requiring that patients lump their own alcohol use with that of their family. The second study (sample B, undertaken to investigate the relationship between tobacco dependence and depression) asked the same questions, but allowed the patient to distinguish between personal and family alcohol use. In each study, respondents were instructed to define their family.

EXISTING FAMILY ALCOHOL SCREENING INSTRUMENTS

Several instruments have been studied for detection of family alcohol problems. A family version of the Michigan Alcoholism Screening Test,[9] the Short Michigan Alcoholism Screening Test,[10] the Self-Administered Alcoholism Screening Test,[11] and a family tree questionnaire for assessing alcohol problems[12] have each demonstrated valid correlations with individual alcoholism testing. The Children of Alcoholics Screening Test is not an instrument for screening for family alcohol problems, but rather was designed to identify behavioral consequences of family alcoholism in adult children of alcoholics.[13] Of these instruments, only the Family Michigan Alcoholism Screening Test has been studied in a primary-care setting. This instrument categorized 34% of patients as having "definite alcohol problems" in their families.[14] In a pediatric study that examined alcohol use in the nuclear family, 15% of hospitalized children were believed to have alcoholism in their family, by virtue of the available parent's response to the Brief Michigan Alcoholism Screening Test and CAGE as a proxy for the nonattending parent.[15] A review of 39 studies on the familial incidence of alcoholism[16] concluded, "A major concern in studies such as these is the accuracy of subject's (or family members) description of familial alcoholism." Family alcoholism in these studies was often assessed with a single item. There was no "gold standard" family alcoholism instrument cited for use in the different studies.

Research questions addressed in this article are: (1) What are the epidemiologic characteristics of family alcohol problems in primary care? (2) Does the Family CAGE demonstrate internal reliability? (3) Does the Family CAGE have valid relationships with other mental health or health-care utilization outcomes? (4) What score most accurately predicts family alcohol problems or other evidence of psychosocial distress? (5) Does the Family CAGE offer an advantage over a single-item global assessment asking about "family problems with alcohol"?

METHODS

It should be noted that validation of the Family CAGE was not the express purpose of either study reported here. As such, no gold standard, if such actually exists, was included against which to measure the Family CAGE. Nonetheless, substantial data are available to evaluate issues of reliability and validity. The Family CAGE and personal CAGE items in these studies were scored on a three-point scale (never, 0; occasionally, 1; and often, 2) to enhance internal reliability. While

The powerful effect of alcoholism on the entire family may make such screening equally important for the nonalcoholic family member.[2,3] Despite potential advantages of early detection through family screening, reviews of existing screening instruments[4] and research directions for alcohol screening[5] have ignored this opportunity, focusing instead on the individual. In this article, we describe the reliability and validity of the Family CAGE (an acronym indicating *Cut* down on drinking; *Annoyed* by complaints about drinking; *Guilty* about drinking; had an *Eye*-opener first thing in the morning), adapted from the commonly used CAGE questionnaire for alcoholism,[6] as a screening device for alcohol-related problems in the family. Although family use of the CAGE questionnaire has been suggested,[7,8] there has been no research, to date, into the reliability and validity of the instrument.

Table 3 describes the distribution of responses on the two versions of the Family and the personal CAGE. The distributions of Family CAGE scores were remarkably similar in each study, with nearly 60% relating at least one positive response. In each study, 48% had a score of 2 or more, while about one quarter of the respondents had a score of 4 or higher. In sample B, 42% had at least one positive response on the personal CAGE, while 15% scored 2 or 3, and another 15% had a score of 4 or more.

Internal consistency reliability of the three CAGE versions reveals a Cronbach α of .84 or higher for each of the instruments (see Table 3). Internal reliability improved when family responses were separated (α=.89) rather than lumped

the CAGE questionnaire has traditionally been a dichotomous scale requiring "yes/no" responses, it was believed that the psychometric properties of the scale could be improved by broadening the response options.[17] Comparison of mean CAGE scores with those of previous studies should be made with caution. In both studies, data collection included interview and self-administered formats. Responses were not significantly different based on method of questionnaire administration. Because different versions of the Family CAGE were examined in each study, it is not possible to combine the two samples.

Family Stress Study (Sample A)

This was a cross-sectional analysis of a convenience sample of 172 adult patients presenting for nonurgent care to 12 family practice sites in the Cleveland, Ohio, area. **Table 2** describes the diverse demographic characteristics of the sample. Most respondents (n≈62) were gathered at a university family practice residency site where charts were reviewed, allowing health-care utilization and health outcome data on this subgroup to be compared. In addition to the Family CAGE, the questionnaire included the Perceived Family Stress Scale (S.H.F., S.J.Z., A.V.G., unpublished data, 1992); the Family Problems Checklist[18]; the Duke University Functional Social Support Scale[19]; the Perceived Stress Scale[20]; the anxiety, depression, and vitality scales of the Profile of Mood States[21]; and a functional health status measure (Duke/University of North Carolina Mini-Health Profile[22]). Chart variables included diagnoses, psychosocial diagnoses, health-care utilization (sick care and well care), family utilization rate (sick care and well care), medications, psychotropic medications, and recording of alcohol problems.

Tobacco Dependence and Depression Study (Sample B)

This was a cross-sectional study consisting of a convenience sample of 107 smokers presenting to a university hospital family practice training program. The demographic characteristics of this group are described in Table 2. Because this sample was entirely made up of smokers, results must be interpreted with caution, since smokers may be likely to drink more or may come from drinking families. In addition to the Family CAGE, the Tobacco Dependence and Depression questionnaire included a number of depression variables (the Catchment Epidemiologic Study–Depression Scale,[23] a self-report of lifetime history of depression and recent self-limited depression). In addition, this study included an "anomy" scale (S.H.F., S.J.Z., A.V.G. unpublished data, 1992) intended to measure a sense of being left aside, or not valued by society.[24]

Analysis

In evaluating the psychometric properties of the Family CAGE, three types of analyses were performed. Initially, the internal consistency reliability of each of the three versions of the CAGE was assessed with corrected item-total correlations and with the Cronbach α statistic. Next, concurrent validity was determined by testing for associations between the Family CAGE and selected psychosocial and utilization outcomes. In these analyses, the Family CAGE was considered a continuous measure and associations with other psychosocial scales were evaluated with Pearson correlation coefficients. Association between the Family CAGE and study demographics were assessed by means of one-way analysis of variance for categorical variables and t tests for dichotomous variables. Significant and nonsignificant associations with demographic variables contribute to the assessment of construct validity of the Family CAGE. Finally, sensitivity and specificity analyses were used to evaluate different cutoff values of the Family CAGE in relation to selected criteria. Positive and negative predictive values as well as χ^2 statistics were computed and compared for three different cutoff scores.

with personal responses (α=.85). Both Family CAGE versions demonstrated the same item-total correlation pattern, with "Annoy" having the highest correlation, followed by "Cut down" and "Guilty," and "Eye-opener" being the lowest. On the personal CAGE, Guilty had the highest item-total correlation. Although Eye-opener had the lowest item-total correlations in each CAGE version, it demonstrated its highest correlation when oriented toward family rather than self (.67 vs .55), implying less denial when answered by a family member than by the individual. Item-total correlations ranged from .55 to .87.

Table 2 displays the demographic characteristics of both study samples, and the relationship of these factors to CAGE responses. In both studies Family CAGE scores were significantly higher in blacks with divorced or separated marital status, in families with children, and among the unemployed. Both studies also demonstrated a trend toward higher Family CAGE scores in women (P<.1). In sample B, the Family and personal CAGE scores were also significantly higher in those with less education and lower income. Personal CAGE scores were significantly higher in men.

In sample A, the Family CAGE was correlated with family stress, family problems, anxiety, depression, individual stress, and marital dissatisfaction (**Table 4**). Among family problems, the Family CAGE was correlated with alcohol problems, spouse communication problems, drugs other than alcohol, sexual problems, personal habits, jealousy, power struggles, and decision making. Respondents were also asked about past psychosocial help-seeking and present need for psychosocial help. The Family CAGE was correlated with past and present need for alcohol/drug counseling; family violence counseling; past marital counseling;

Table 1. Family CAGE (Revised)*

The following questions help us understand the way you and your family use alcohol (including beer, wine, and wine coolers). Please check the answer that best describes you and your family.

• Have you ever felt that *you or anyone in your family* should *cut down* on your/their drinking?

You?	___ 1. Never	___ 2. Occasionally	___ 3. Often
Family?	___ 1. Never	___ 2. Occasionally	___ 3. Often

• Have *you or anyone in your family* ever felt *annoyed by complaints* about drinking?

You?	___ 1. Never	___ 2. Occasionally	___ 3. Often
Family?	___ 1. Never	___ 2. Occasionally	___ 3. Often

• Have *you or anyone in your family* ever felt *bad or guilty* about your/their drinking?

You?	___ 1. Never	___ 2. Occasionally	___ 3. Often
Family?	___ 1. Never	___ 2. Occasionally	___ 3. Often

• Have *you or anyone in your family* ever had a *drink first thing in the morning* to steady nerves or get rid of a hangover?

You?	___ 1. Never	___ 2. Occasionally	___ 3. Often
Family?	___ 1. Never	___ 2. Occasionally	___ 3. Often

*CAGE is an acronym indicating Cut down on drinking; Annoyed by complaints about drinking; Guilty about drinking; had an Eye-opener first thing in the morning.

Table 2. Study Demographics and Their Relationship to the Family and Personal CAGE*

Variable	Sample A (n=172)	Sample B (n=107)
Mean age, y	36	38
Gender, % F	77	67†
Race, %		
W	57	60
B	43‡	40‡
Marital status, %		
Married/LT	61	45
Never married	21	29
Divorced/separated	17‡	23‡
Widowed	7	3
Children, %	78‡	71‡
Employment, %		
Full-time	52	60
Part-time	13	14
Homemaker	11	8
Unemployed	24‡	10‡
Income, %		
<$20 000	33	40§
$20 000-39 999	40	30
>$39 999	27	30
Education, %		
<High school	16	10§
High school	28	23
>High school, <College	34	30
College or more	23	36

*CAGE is an acronym indicating Cut down on drinking; Annoyed by complaints about drinking; Guilty about drinking; and had an Eye-opener first thing in the morning. LT indicates living together.
†Differences were evaluated using t test for dichotomous variables; analysis of variance for categorical variables; and Pearson correlations for continuous variables. P<.05 for CAGE.
‡P<.05 for Family CAGE.
§P<.05 for both Family CAGE and CAGE.

need for individual counseling; sex counseling; emotional support from their physician; and stress management. The Family CAGE was also correlated with medications prescribed ($r=.33$; $P<.01$) and use of psychotropic medications ($r=.23$; $P<.05$). The prescription rate was higher despite no significant difference in functional health status as measured by the Duke/University of North Carolina Mini Health Profile. Families with alcohol problems, as indicated by the Family CAGE, showed a trend toward a lower family well visit rate ($r=-.14$; $P<.1$), but a higher family sick visit rate ($r=.34$; $P<.01$).

In sample B, patients with a high personal score on the CAGE questionnaire were more likely to have a recent self-limited depression ($r=.25$; $P<.05$), while patients with family alcohol problems were more likely to report a lifetime history of major depression ($r=.33$; $P<.01$). Family alcohol problems were correlated with symptoms of depression and anomy (**Table 5**) including a sense of failure, a view of other people as unfriendly, the "blues," tearful episodes, impaired communication, the belief that it is unfair to bring new children into the world, and a disinclination to choose another life like their current one. Personal alcohol problems, in contrast, were correlated with lack of concentration, fearfulness, a sense of life being an effort, experiencing loss of control over life, the perception of their life being worse than it appears to others, and the feeling of life being painful and boring. The presence of family alcohol problems also increases the likelihood of personal alcohol problems. Only 12% of patients with negative findings on the Family CAGE had positive findings on the personal CAGE, while 44% of patients who tested positive on the Family CAGE had positive findings on the personal CAGE (relative risk of 3.7). In fact, 77% of those who tested positive on the personal CAGE also tested positive on the Family CAGE.

Table 3. Frequency Distribution of Family CAGE, Family CAGE (Revised), and CAGE*

Statistical Findings	Distribution, %		
	Family CAGE (Sample A)	Family CAGE (Revised) (Sample B)	CAGE (Sample B)
Score			
0	42	41	58
1	10	11	13
2	10	13	8
3	14	8	7
≥4	24	27	15
Mean	2.1	2.2	1.2
Range	0-8	0-8	0-8
Cronbach α	.85	.89	.84

*CAGE is an acronym indicating Cut down on drinking; Annoyed by complaints about drinking; Guilty about drinking; had an Eye-opener first thing in the morning.

To determine the best cutoff score for patients with positive findings on the Family CAGE, sensitivity, specificity, and positive and negative predictive values were examined for three criteria. Ideally, such analysis targets a gold standard, but when no gold standard is available, it is equally valid to direct these statistics to other criteria, so long as those criteria are clearly described. **Table 6** shows different cutoff options for single-item self-report of (1) alcohol problems in the family; (2) past counseling for alcohol problems; and (3) needing help for alcohol problems. In choosing a cutoff for a screening instrument, emphasis is placed on sensitivity and negative predictive value to minimize false-negative results. False-positive results can be detected with further diagnostic testing, but false-negative results exclude further attention to diagnosis. Lower cutoff scores increase sensitivity and negative predictive value, but decrease specificity and positive predictive value. Lower specificity results in more false-positive results, and therefore may risk offending patients when further alcohol assessment is undertaken. Ironically, defensiveness regarding alcohol assessment may itself be a diagnostic sign of denial and alcohol problems.

When examining the Family CAGE as a predictor of self-identified family alcohol problems, a cutoff score of 2 or higher provides excellent sensitivity and negative predictive value, with acceptable specificity. However, if perceived need for help is considered the criterion, the same cutoff provides substantially lower sensitivity than a cutoff score of 1 or more. Since family alcohol problems occur over a spectrum of severity, the higher the Family CAGE score, the more likely it is that a family member is an alcoholic. The Family CAGE (cutoff score of 2 or higher) also identifies 87% of respondents with a jealous relationship, 83% who have sought help for family violence, 81% with family drug problems, 74% with sexual problems, 67% with

spouse communication problems, and 67% of those who express the need for help for family violence.

If assumptions are reversed and the predictive characteristics of the single item regarding family alcohol problems are examined, the item provides high specificity (96%) and positive predictive value (90%), but low sensitivity (39%) and negative predictive value (62%) for the Family CAGE. When the family alcohol problems item is used to examine past help, or need for help, specificity is good (79% for each), but sensitivity is poor (47% and 44%, respectively). These values are a full 40 points lower than the sensitivity of the Family CAGE in predicting the same outcomes. In other words, a positive response to a single question about family alcohol problems can be viewed as a valid predictor, but a negative response has little value.

COMMENT

Criteria for effective screening include the following: (1) the condition should occur with sufficient prevalence to warrant screening; (2) accurate screening technology must be available; (3) the condition should have a significant effect on quality of life; (4) there should be an asymptomatic phase during which early diagnosis holds an advantage; (5) acceptable treatment methods should be avail-

Table 4. Pearson Correlations for Family CAGE With Related Psychosocial Constructs (Sample A; n=172)*

Psychosocial Constructs	r
Marital Dissatisfaction Scale	.38
Perceived Individual Stress Scale	.21
Depression Scale	.20
Anxiety Scale	.19
Perceived Family Stress Scale	.19
Family Problems Checklist	.26
Alcoholism or drinking problems	.51
Jealousy	.27
Communication with spouse	.26
Drugs other than alcohol	.26
Appearance or personal habits	.24
Sex problems	.23
Power struggles	.20
Decision-making	.20
Marriage counseling	.22
Individual counseling	.22
Past alcohol or drug counseling	.38
Need alcohol or drug counseling	.24
Past counseling for family violence	.21
Need counseling for family violence	.25
Need sex counseling	.26
Need stress management	.20
Need emotional support from physician	.23

*CAGE is an acronym indicating Cut down on drinking; Annoyed by complaints about drinking; Guilty about drinking; had an Eye-opener first thing in the morning. P<.05 for all correlations.

Table 5. Pearson Correlations for Family CAGE With Symptoms of Anomy and Depression (Sample B; n=107)*

	r	
Symptoms	Family CAGE	CAGE
Depression		
Felt my life was a failure	.26†	NS
Felt people were unfriendly	.26†	NS
Had restless sleep	.22	.18
Had decreased appetite	.19	.18
Couldn't shake the blues	.18	NS
Had crying spells	.18	NS
Talked less than usual	.18	NS
Had trouble keeping my mind on what I was doing	NS	.21
Felt fearful	NS	.19
Everything was an effort	NS	.18
Anomy		
It would be unfair to bring new children into the world	.29†	NS
I would not like another life like the one I have	.18	NS
My life feels out of my hands and out of control	NS	.19
Even if my life looks fine to other people, it just doesn't feel right to me	NS	.23
Each day is a painful and boring experience	NS	.21

*CAGE is an acronym indicating Cut down on drinking; Annoyed by complaints about drinking; Guilty about drinking; had an Eye-opener first thing in the morning. NS indicates not significant.
†P<.01.

able; and (6) the screening instrument should be acceptable to the patient and physician.[25]

PREVALENCE

The first research question addresses the epidemiologic characteristics of family alcohol problems. Nearly half of the patients presenting in these primary-care studies identified family alcohol problems, with almost 60% reporting at least one positive response. Even accepting a higher cutoff score of 3 or higher still revealed a prevalence of 35% to 38%, while approximately a quarter of each sample had a score of 4 or higher. Personal scores on the CAGE were greater than 4 in 15% of patients and higher than 3 in 22% of patients. Clearly, prevalence rates of both personal and family alcohol problems warrant screening.

ACCURACY

The Family CAGE displays excellent internal reliability. This analysis is limited by the absence of a true gold standard for ensuring accuracy. Regardless, compelling, clinically relevant relationships between the Family CAGE,

family alcohol variables, and other psychosocial measures support its validity. Because of the lack of a gold standard, no firm cutoff score for the Family CAGE can be described. Table 5 allows physicians to examine the ability of the Family CAGE to predict important family alcohol variables and then decide for themselves what Family CAGE score indicates need for further assessment of family alcohol problems. On balance, we advocate a cutoff score of 2 or higher. In fact, one positive response on the Family CAGE was 40% more sensitive at predicting psychosocial help-seeking than a single question asking whether the patient perceived family alcohol problems.

QUALITY OF LIFE

The effect of family alcohol problems on quality of life is twofold—an indirect effect on the nonalcoholic family members, and a direct effect on the alcoholic. The direct effect of alcoholism on the individual includes a broad range of health problems, including a higher relative mortality risk of 4.96 for the relapsing alcoholic compared with those with stable abstinence.[26] The effect on the family is demonstrated by Family CAGE correlations with family and individual stress, depression, anxiety, marital dissatisfaction, family problems, and psychosocial help-seeking. Families with alcohol

Table 6. Predictive Characteristics of the Family CAGE at Different Cutoff Points (Sample A; n=172)*

	Cutoff Point		
Variable	≥1	≥2	≥3
Criterion: Do you have family problems with alcoholism or drinking?			
Sensitivity, %	93.5	90.3	77.4
Specificity, %	49.6	62.4	72.6
Positive predictive value, %	33	38.9	42.9
Negative predictive value, %	96.7	96.1	92.4
Criterion: Have you ever participated in alcohol or drug counseling programs?			
Sensitivity, %	87	80	80
Specificity, %	41	55	68
Positive predictive value, %	18	20	26
Negative predictive value, %	96	95	96
Criterion: Do you think it might be helpful to participate in an alcohol or drug counseling program?			
Sensitivity, %	88	68	60
Specificity, %	45	55	68
Positive predictive value, %	30	29	33
Negative predictive value, %	93	87	86

*CAGE is an acronym indicating Cut down on drinking; Annoyed by complaints about drinking; Guilty about drinking; had an Eye-opener first thing in the morning.

problems are more likely to present for sick visits and less likely to seek preventive care. The family member of an alcoholic is more likely to have had a lifetime history of major depression and is more likely to be receiving psychotropic medication. The appropriateness of these medications was not evaluated, but a related study demonstrated the tendency of physicians to prescribe more medications when confronted with stressed patients, independent of severity of illness.[27] Although the dual diagnosis of alcoholism and depression has been described, there has been less emphasis on depression in the alcoholic's family. In sample B, the Family CAGE scores were more highly correlated with depression than were the personal CAGE scores.

ASYMPTOMATIC PHASE AND EARLY TREATMENT BENEFIT

A number of studies have documented the difficulty of early detection of family alcohol problems.[14,15] In our chart review (sample A), physicians noted family alcohol problems on 18% of charts, while the Family CAGE identified family alcohol problems in 47% of the same patients. Of those patients identified by their physician, 91% (10 of 11) were also identified with the Family CAGE. Increasing evidence supports effectiveness of early physician intervention in treating alcoholism.[28] Several randomized, controlled studies of early intervention in primary care[29-31] have demonstrated efficacy in reducing γ-glutamyl transpeptidase levels, problem drinking, hospital days, loss of work days, and mortality rates. Studies have also demonstrated a "dose-response curve" with increasing physician involvement correlated with more positive change in drinking behavior.[26,32] Early family intervention has not been studied. However, if physicians prescribe medications for family members who are stressed as a result of living with an alcoholic without detecting the reason for the stress, an opportunity to discuss the effect of alcohol on family members' lives is lost. By helping the family discuss the taboo topic of alcoholism, they cannot maintain the same level of denial.[12]

EFFECTIVE TREATMENT AVAILABLE

Five-year sobriety rates for standard alcoholism treatment ranges from a low of 10% for end-stage alcoholics to a high of 80% for recovering physicians and other professionals.[33] Family alcohol screening could contribute to treatment success through early diagnosis, helping maintain an intact and supportive family, and allowing appropriate family intervention, all of which are positive prognostic signs for recovery.

ACCEPTABLE SCREENING INSTRUMENT

Acceptability of the Family CAGE to patients and physicians can only be presumed because of the brevity of the

instrument (3 minutes to administer). In our clinical experience, not only is the the Family CAGE acceptable, but patients often express relief when given the opportunity to raise these issues. An important consideration of patient acceptability involves the fundamental confidentiality of the information gathered through the Family CAGE. To approach the alcoholic family member with this information without the permission of the primary-care patient is to risk both the doctor-patient relationship and patient safety. While many family members are eager to facilitate a visit for the alcoholic patient, others are more reticent. If the presenting patient does not want the alcoholic to know of the communication, the physician can simply encourage individual counseling and attendance at meetings of Alanon, Alateen, or Adult Children of Alcoholics. Further, if the patient fears the consequences of this information being communicated, careful questioning about family violence should be undertaken, with anonymous shelter recommended when appropriate. Little or no skill is required to administer the screening instrument, since it may be given in interview and self-administered forms. Communication of the results, however, does require an ability to express nonjudgmental concern and knowledge of community resources for re-

Family CAGE was correlated with alcohol problems, spouse communication problems, drugs other than alcohol, sexual problems, personal habits, jealousy, power struggles, and decision making

ferral. If the physician does not know what to do with positive screening results, he or she is unlikely to place himself or herself in a position of ignorance. Continued emphasis needs to be placed on training physicians to effectively communicate the diagnosis of alcoholism to the patient.

In summary, the Family CAGE appears to be an accurate method of assessing family alcohol problems, a clinical problem of high prevalence that is difficult to diagnosis, and for which early intervention appears to be useful. The screening technique is simple and brief, and resources exist to treat those identified by it. Potential benefits of the Family CAGE include (1) corroboration of alcohol history received from other family members; (2) decreased rate of false-negative results by reducing denial; (3) access through family members to alcoholics who may not otherwise seek routine health care; (4) intervention with the nonalcoholic family members, who may be more motivated for change than the alcoholic; and (5) better definition of the epidemiologic character of family alcohol problems. Depending on the purpose of testing, a score of 2 or higher appears to be the most functional,

optimal cutoff. The Family CAGE offers information exceeding that offered by a single screening question. The Family CAGE may be particularly appropriate for patients presenting with emotional or family problems, for high utilizers of health care, for patients with multiple diffuse symptoms, during prenatal care, or in pediatric settings.

This analysis is limited by the lack of a gold standard against which to measure the Family CAGE. In addition, analysis was complicated by the use of two different versions of the Family CAGE in two different study populations. Results from sample B must be interpreted with caution since smokers may be more likely to drink more or may come from drinking families. Sample A offered one global response set. Sample B encouraged more specificity by allowing the subjects to differentiate between themselves and their family. In the future, it is suggested that three response sets be offered: for "you," "the family you grew up in," and "the family you live with now."

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