Is the Health Profile of Problem Drinkers Different From That of Other Patients?

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Health problems presented to the family physician over a 2-year period were compared between a group of 108 problem drinkers and a group of matched control subjects. Although the problem drinkers had a higher prevalence of many types of problems, the major differences occurred for traumatic injury, digestive disorders, and family or social dysfunction. Such problem areas could comprise a brief checklist to aid in the detection of problem-drinking patients. Information presented to the patient concerning the wide range of problems associated with their drinking may also help break through the denial so characteristic of this population. **J FAM PRACT 1990; 31: 42-46.**

O ver the past decade, a concerted research effort has been aimed at increasing the involvement of family physicians in the early detection and management of alcohol problems in their patient population.[1] Within this research context a small number of studies have sought to describe the types of health problems that problem drinkers present to the family physician.[2-4] An underlying rationale for these studies is that unique features of the medical history of known cases may serve as useful indicators of alcohol abuse in patients whose problem remains undetected. Although the health profiles of problem drinkers have been described, there is not complete agreement on which types of health problems typically distinguish these patients. Some studies find large differences between problem drinkers and control groups on several health problems such as injuries and digestive disorders. The most recent study,[4] however, found that the presenting complaints of patients with and without alcohol problems did not differ significantly along any dimension.

The objective of the present research was to determine what kinds of health-related problems distinguish the clinical record of problem drinkers in Canadian family prac-

tice settings. The study extends the previous research in this area by using a control sample matched on a wide range of variables, including social class. In addition, both bivariate and multivariate methods of analysis were employed, the latter allowing for an evaluation of the independent associations between problem drinking and various health-related conditions.

METHODS

Two family medical centers in London, Ontario, were used as the sites for the study. Both centers are teaching practices affiliated with the Department of Family Medicine at the University of Western Ontario. One full-time physician at each of the centers consented to the use of his or her practice for the study.

The medical records were used as the source of data. All patient data within each practice were routinely registered with the use of a problem-oriented classification system developed for patient management and research.[5] This system necessitated routine screening and documenting of alcohol problems. The manual[6] provided a broad definition of an alcohol problem: "if the use of alcohol interferes with the person's physical, psychological or social well-being or achievement of need satisfaction, or that of significant others, to the extent that it is identified by the person, his health care attendant or others as a problem." In terms of more conventional diagnostic nomenclature, patients identified by the clinics in-

cluded those considered as alcohol-dependent and nondependent abusers of alcohol. The term *problem drinker* was used to describe the research population.

A total of 164 potential problem drinkers were selected through a search of the patient classification system and verification of the drinking problem on the patient's chart. A final study population of 108 problem drinkers was chosen. The selected research subjects were matched to control patients within the respective physician's practice for age, sex, social status, living arrangements, and family size. All potential control patients were identified from the database. If there was more than one eligible control for a given patient, the selection was random.

Social status was determined on the basis of the patient's occupation during the study period and coded according to the Blishen-McRoberts occupation codes.[7] These codes range from I (eg, a professional such as a dentist or lawyer) to VI (eg, an unskilled laborer). One code was added to the end of this scale for people receiving public assistance. Living arrangements were coded as (1) living with a spouse or under a common-law arrangement, or (2) not living with a spouse or under a common-law arrangement. More details concerning eligibility and matching criteria are available in previous reports.[8,9]

Given the retrospective nature of this study, no data were available on the completeness of subject identification. In one of the clinics, a point prevalence of 15.8% was estimated for identified problem drinking. This rate is similar to that expected from other research in Canadian family practice.[10] All of the physicians had been trained in the use of the patient classification system, and their patient assessments and case notes had been closely supervised by full-time physicians involved in the system's development. It is unlikely, however, that all of the problem drinkers were identified. To avoid contamination of the control group with such false-negatives, the charts of all potential control subjects were reviewed for notes pertaining to alcohol abuse, and the members of the physician's team were asked whether these patients or their family members had ever discussed concerns about alcohol abuse. As a result, one control subject was excluded. If false-negatives remained in the control group, the differences related to problem drinking would have tended to be diminished rather than increased.

Of the 108 patients recognized as problem drinkers, 75 (69.4%) were male, and their average age was 39.4 years (SD = 14.5). Cases of problem drinkers were clustered in the middle-lower social strata: classes I to III (20%), IV to VI (52%), and public assistance (28%). Fifty-nine subjects (54.6%) lived with a spouse, while the remainder lived alone or with other family members. The mean duration of attendance at their family practice was 47.2 months (SD = 41.5).

The type of health problem diagnosed at each encounter was used to compare the problem-drinking group with the control group. Health problems were coded with the use of the International Classification of Health Problems in Primary Care (ICHPPC).[11] To facilitate the analysis of the data and the comparison of the results with those of previous studies,[12] the ICHPPC categories were subdivided into 23 categories. These categories are described elsewhere.[8] Interrater reliability of the coding of health problems was assessed by two independent coders for a subsample of case and control subjects. For 345 problems coded and grouped into the study categories, an error rate of 1.5% was obtained.

RESULTS

Type of Problems Diagnosed by the Physician

Problem drinkers and their control group were first compared by each category of health-related problems in a series of bivariate analyses. Of the 23 categories of problems employed in the analysis, there were no occurrences for either group within two categories: congenital anomalies and perinatal conditions (Table 1). A comparison on a third category, alcohol abuse or dependence, was not relevant since a difference between groups was predetermined by the nature of the study. When the remaining 20 diagnostic groupings were examined, a statistically significant association with problem drinking status was evident for 10 categories: neoplasms; endocrine, nutrition, or metabolic disorders; mental health; drug abuse (including tobacco); respiratory tract disorders; digestive tract disorders; diseases of the skin and subcutaneous tissue; signs, symptoms, and ill-defined conditions; injuries or adverse effects; and social, marital, or family problems. Table 1 shows the odds ratio calculated for each diagnostic category. For the 10 categories in which case subjects and control subjects were significantly different, the odds ratio was usually close to 3 or higher. Thus, these differences between groups were reasonably large and clinically relevant.

The 23 broad diagnostic categories shown in Table 1 are made up of about 360 specific diseases and patient problems grouped together in the ICHPPC coding manual. For the 10 broad categories that showed a significant difference between the problem drinkers and the control group, it is of interest to examine the more specific health-related problems subsumed by the category.

Neoplasms. Of 15 problem drinkers visiting the clinic at least once during the study period for neoplasms, there were two cases with lung tumors and one case each of breast, uterine, parotid, and prostate cancer. The remain-

TABLE 1. COMPARISON OF PROBLEM DRINKERS AND THEIR MATCHED CONTROL SUBJECTS ON THE HEALTH-RELATED PROBLEMS DIAGNOSED DURING THE CONTACTS WITH THEIR PHYSICIAN

Category of Health-Related Problems	Problem Drinkers (n = 108)		Matched Controls (n = 108)		Unadjusted Odds Ratio	Adjusted Odds Ratio
	No.	%	No.	%		
Infective and parasitic	26	24.1	19	17.6	1.4	—
Neoplasms	15	13.9	2	1.9	7.5†	5.0
Endocrine, nutrition, metabolic	28	25.9	12	11.1	2.6†	2.2
Blood	5	4.6	1	.9	5.0	—
Mental health	54	50.0	30	27.8	2.7‡	1.3
Alcohol abuse or dependence	48	44.4	0	0.0	—	—
Drug abuse (including tobacco)	29	26.9	7	6.5	5.4‡	1.9
Nervous system or sense organs	43	39.8	35	32.4	1.4	—
Circulatory	30	27.8	20	18.5	1.8	—
Respiratory	57	52.8	36	33.3	2.5†	2.0
Digestive	46	42.6	25	23.1	2.8†	3.7*
Genitourinary	15	13.9	12	11.1	1.3	—
Obstetrical	15	13.9	12	11.1	1.3	—
Skin, subcutaneous tissue	44	40.7	23	21.3	3.3‡	2.0
Musculoskeletal or connective tissue	38	35.2	27	25.0	1.6	—
Congenital anomalies	0	0.0	0	0.0	—	—
Perinatal	0	0.0	0	0.0	—	—
Signs, symptoms, ill-defined	31	28.7	9	8.3	4.7‡	2.5
Injuries or adverse effects	60	55.6	31	28.7	3.4‡	5.5‡
Preventive or family planning	49	45.4	48	44.4	1.1	—
Social, marital, family	55	50.9	24	22.2	3.8‡	3.0*
Administrative	4	3.7	4	3.7	1.0	—
Miscellaneous	1	.9	0	0.0	—	—

The **unadjusted odds ratio** is a maximum likelihood estimate equal to the ratio of discordant pairs, $\psi = n_{10}/n_{01}$. The difference in the proportion in each group with at least one encounter in the diagnostic category was assessed with McNemar's test of proportions for matched samples. Statistical significance is indicated by P < .05*, P < .01†, or P < .001‡.

The **adjusted odds ratio** equals the exponent of the beta coefficient in a logistic regression equation including the 10 categories of problems that were significant in the bivariate analyses as predictor variables. Statistical significance evaluates whether this odds ratio equals 1, at P < .05*, P < .01†, or P < .001‡.

ing nine patients all presented with a variety of papillomas, moles, or other benign skin cancers.

Endocrine, Nutrition, and Metabolic Disorders. The difference between groups in this category was primarily attributable to a higher proportion of problem drinkers presenting with acute gout and obesity. Of the problem drinkers, 6.5% presented with gout compared with 0.0% in the control group. Interestingly, all but one of the seven patients with gout among the problem drinkers were from the upper social strata. With respect to obesity, 17.6% of the problem drinkers presented with a weight problem compared with 11.1% of the control group.

Mental Health. With the exception of psychotic disorders, such as organic psychosis and schizophrenia, there was a trend for the problem drinkers to present more often than the control group for many types of mental health problems. Problems such as sleep disturbances, tension headaches, and personality or character disorders were more common among the problem drinkers. The major difference between groups, however, was on neurotic disorders such as chronic anxiety and depression.

Drug Abuse (including tobacco). The difference between groups on this category was primarily a reflection of more frequent abuse of tobacco by the problem drinkers. In addition to the difference on smoking, there were eight problem drinkers in contact with their physician at least once concerning drugs other than tobacco. The substances being abused were tranquilizers (5 cases), analgesics (1 case), marijuana (1 case), and laxatives (1 case).

Respiratory Disorders. The difference between groups with respect to respiratory tract illness arose primarily from a greater proportion of problem drinkers being diagnosed with serious respiratory tract problems such as pneumonia, chronic obstructive lung disease, bronchitis, and bronchospasms. The groups were more comparable with respect to less serious upper respiratory tract infections (eg, colds, sore throats) and symptoms such as cough.

Digestive Disorders. The problem drinkers differed from control subjects primarily on three types of digestive disorders: (1) ulcers in the mouth and diseases of the teeth and gums, such as gingivitis; (2) diseases of the stomach and esophagus, such as esophagitis, peptic ulcers, and gastritis; and, (3) diseases of the liver such as cirrhosis and alcoholic hepatitis. The groups were comparable on digestive symptomatology (eg, abdominal pain, heartburn, or nausea) as opposed to organic disease.

Diseases of Skin and Subcutaneous Tissue. Three subcategories of skin disease accounted primarily for the difference between groups on this broad category. Problem drinkers were more likely to present with (1) skin problems, such as boils, cellulitis, and skin abscess; (2) pruritis and related conditions, such as neurodermatitis; and (3) other problems such as skin lesions and dry skin. Also, as noted above with respect to neoplastic disease, groups were markedly different on the frequency of diagnosis for skin moles and benign skin tumors.

Signs, Symptoms, and Ill-defined Conditions. The difference between groups in this category arose primarily from differences in the proportion presenting to their physician with chest pain, general malaise, and edema. Groups were not different with respect to weight loss or generalized symptoms such as excessive sweating.

Injuries and Adverse Effects. Problem drinkers more often had fractures and sprains diagnosed as well as other trauma such as burns, lacerations, bruises, and concussion.

Social, Marital, and Family Problems. This category included a wide variety of problems related to the patient's financial, housing, educational, occupational, family or marital, and other social problems (eg, isolation). Of these various problems, the one factor most responsible for the overall difference between groups on the broad category was family or marital dysfunction.

A multivariate logistic analysis was conducted to assess the relative importance of each diagnostic category in discriminating between problem drinkers and control subjects. In this analysis, the 10 variables that had been significant in the bivariate analyses were used to predict status as a problem drinker or matched control patient. Table 1 shows the adjusted odds ratio for each of the 10 diagnostic categories, reflecting the strength of the association that remained with problem drinking status when all 10 categories were included in the multivariate analysis. Based on these adjusted odds ratios, only three categories of health-related problems were independently as-

sociated with problem drinking at a level of conventional statistical significance ($P < .05$). These categories were (1) injuries and adverse effects, (2) social, marital, and family problems, and (3) digestive disorders. Thus, of all of the categories of morbidity considered in this analysis, these three represented the most important, independent types of problems that distinguished the problem drinkers from their control counterparts.

DISCUSSION

The health profiles of known problem drinkers have been examined in a British family practice setting[2] and in American health maintenance organizations.[3] The usual finding has been a higher than expected consultation rate and a higher prevalence of mental health dysfunction, gastrointestinal problems, traumatic injury, and social or family problems. The present research is similar in design to these studies and replicates the results in Canadian family practice settings. Building on this previous research, study subjects were matched by social status, and differences on a wide variety of health-related problems still emerged. Thus, concerns about potential confounding resulting from social status[2] appear unfounded. A rate of consultation twice that of control patients was also found and has been reported previously.[9]

Nicol and Ford[4] have approached this area of research using methods slightly different from those used here and in other studies.[2,3] Rather than examine the primary care consultations of known problem drinkers over a 1- to 2-year period, they screened a family practice population for both detected and undetected cases and described the presenting health problem on the day that the screening took place. No differences in presenting problems were evident between case and control subjects. The disparate findings between this research and the present study may be due to differences in methods and sample composition. For example, their sample was predominantly female, whereas the majority of the patients reported here were male. Alternatively, the health profile of known problem drinkers may differ from that of patients whose drinking problems remain undetected. The latter may have a health profile more similar to non-problem-drinking patients. Consequently, when previously undetected cases are included in the research (as in the Nicol and Ford[4] study), differences between case-control subjects may be diminished. While this issue has yet to be fully resolved in this line of research, it is unlikely that differences between detected and undetected cases would completely account for many of the strong, positive associations obtained here. In the one study practice for which a point prevalence estimate was possible, an estimate of about 15% was

obtained. Based on this finding, a large pool of undetected problem drinkers in the study population is unlikely.

To further extend previous research, multivariate analyses were also used to determine the strongest independent associations between problem drinking and the various categories of health problems. Results showed that social or family dysfunction, digestive disorders, and traumatic injury were the best independent predictors. Such problem areas could comprise a brief checklist committed to memory and used during chart review to aid in the detection of problem-drinking patients. The checklist may be particularly useful in reviewing the chart of a puzzling case where alcohol abuse has not been ruled out, and it may be a cost-efficient way to form an initial opinion on a new patient whose records have been forwarded. Given the low cost in time and effort, physicians should be particularly sensitive to previous consultations for accidental injury, digestive disorders, and social or family dysfunction. Problems evident in one or two of these three areas should immediately raise a "red flag" with respect to excessive drinking. In addition to these three general categories, special attention should be paid to the occurrence of specific health problems. For example, gout and peripheral nerve palsy caused by pressure are two conditions often having a significant alcohol involvement that may be overlooked.

A suspicion of alcohol abuse that is initially based on a review of past health problems can then be supplemented either by more systematic case-finding procedures[13,14] or direct questions concerning current and past drinking practices. Although checking for past difficulties in key problem areas would be better than having made no purposive investigation into potential alcohol abuse, these other more sophisticated methods are also available and would probably be more efficient if used routinely.[8]

It should also be noted that whatever the means of case finding, the physician must still confront the patient and attempt to break through the denial so characteristic of this patient population. With a suspicion of alcohol abuse that is grounded in the clinical record, the wide range of problems that may be linked to the patient's excessive use of alcohol can be pointed out. This information concerning the extent to which alcohol has touched on such a diverse range of bodily and social systems may be of some assistance in breaking through the patient's denial.

Finally, physicians experience some difficulty in treating problem drinkers, and attitudinal factors may be inhibiting more active case finding.[15] Treating problem drinkers is often viewed as a thankless task made difficult, for example, by lack of agreement on the risk levels of alcohol consumption, social class differences in problem definition, and the physicians' own personal use of alcohol.[16] While physicians are trained to recognize disease and cure it, the expectations for the treatment of alcohol abuse should be modified to fit the chronic nature of the problem. Successful intervention often requires a long-term approach, and the circumstances that can trigger behavioral change sometimes arise quite unpredictably.[16] Work with these patients should be accepted as professional challenge rather than a thankless task.

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