

At Risk Drinking in Primary Care: report from a survey in Sao Paulo, Brazil

EDUARDO IACOPONI,¹ RONALDO RAMOS LARANJEIRA²
& MIGUEL ROBERTO JORGE³

¹Research Associate, General Practice Research Unit, Institute of Psychiatry, ²Research Associate, Addiction Research Unit, Institute of Psychiatry & ³Senior Lecturer, Departamento de Psiquiatria e Psicologia Medica, Escola Paulista de Medicina, Brazil

Summary

This article describes the prevalence of at risk drinking among patients attending the primary health care sector in the city of Sao Paulo, Brazil. Five percent of the screened population answered positively to two or more questions on the CAGE questionnaire; 12% of male and 3% of female subjects were considered to be at risk drinking. Patients socio-demographic characteristics were analysed by means of logistic models. Variables sex, age, employment status and years living in Sao Paulo had significant effects on the risk of being a CAGE high-scorer.

Introduction

The World Health Organization has in the past few years been concerned with the impact of alcohol problems in the health services of most nations, particularly the less industrialized ones.¹⁻³ Planning for the administration of alcohol problems in the broader perspective of other health, psychosocial, and economic problems would lead to emphasis on using the existing resources to deal with various aspects of alcohol problems rather than on establishing separate services.⁴ The network of Primary Health Care services in a community emerges as an ideal setting for the management of alcohol problems. Primary Health Care has some attributes that distinguish it from other forms of health care:⁵ it is the first health contact of patients and potential patients; it is accessible, temporally, spatially and economically to all patients; it offers comprehensive care, where the great majority of health problems can be assisted; and it provides continuity of care, and coordination with other forms of health care.

Kamerow *et al.*,⁶ in a review of the impact of alcohol, other drug abuse and mental disorders in

medical practice, suggested that "If substance abuse and mental disorders are common and underdiagnosed in primary care, and if many of them are treatable with modern medications and therapy, then physicians in primary care are in a position to play a critical role". Although the above suggestions seem to be true for the more developed countries, its worldwide usefulness is still to be shown.

Data about alcoholism in Brazil is scarce. In one big city 50% of car accidents are related to drinking driving.⁷ In a recent community survey Santana & Almeida using a random representative sample of 1511 individuals aged 14 years or more in a suburb of the city of Salvador (north-east of Brazil) found that 3.5% of the interviewees were diagnosed as having alcoholism.⁸ Carlini *et al.*⁹ conducted a survey in a sample of students between 9 and 18 years old, to evaluate, among other things, the extent of alcohol consumption. Abstinence was found in 27% of the interviewed population; 14% were classified as moderate drinkers and 5% as heavy drinkers. Although the last 20 years have seen many other studies in general hospitals and out-

patients clinics,^{10,11} these investigators employed different criteria, making it difficult to establish judicious comparisons.

The aim of this paper is to describe the prevalence of at risk drinking among patients attending the primary health care sector in the city of Sao Paulo, and to investigate the socio-demographic characteristics of attenders that are often associated with this condition. The city of Sao Paulo is the key urban development of Brazil, with its 10 million inhabitants producing about two-fifths of the country's industrial output.¹² It is estimated that, due to the intense migration from poorer areas of the country, and to natural increase, the population will double by the year 2000.¹³ The city has shown a slow but continuous development of public health services since the beginning of the century, but it is only in the last two decades that a network of health centres has been built to cover most of the urban area.¹⁴ There are today 335 primary care clinics in the city, providing free medical services mainly to the urban poor.

Method

Sampling

In order to obtain a non-biased sample of the adult population attending primary health clinics in the city, a proportional stratified sampling procedure was performed, including in its original list only those health centres (115 out of 335) that also offered non-specialized medical services for the adult population (all centres have services for children and mothers, vaccination programmes, dental services, public health advisory units, etc). Forty health centres were thus selected, proportionally representing all the districts of the city. Consecutive patients aged 16 years or over, attending these clinics for consultation on the study days, were asked to participate in the survey; the study days covered all days of the weeks and all three periods of surgeries (morning, afternoon and early evening).

Instruments

Sociodemographic Questionnaire. This was used to acquire information in a standardized way about sex, age, marital status, race, place of birth, years living in Sao Paulo, educational background, employment status, family income per capita, reason

for consultation and number of previous consultations with the same doctor.¹⁵

The *CAGE* questionnaire. This is a well-known instrument devised for the screening of at risk drinking in general and clinical populations.^{16,17} It consists of four items:

- (1) Have you ever felt you ought to cut down on your drinking?
- (2) Have people annoyed you by criticizing your drinking?
- (3) Have you ever felt bad or guilty about your drinking?
- (4) Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover?

At a cut-off point of two or more positive replies, the *CAGE* has consistently shown acceptable values of sensitivity and specificity when compared both to clinical^{18,19} and laboratory criteria.²⁰ It has been translated into Portuguese and validated against clinical criteria in a psychiatric hospital in Sao Paulo.²¹ Since then it has been widely used, particularly in general hospitals and general medical clinics.

Patients were considered to be *CAGE*-positives when two or more affirmative answers were given. The term 'at risk drinking' will be used in this text, although we are well aware that it implies the *CAGE*-positive group only.²²

Procedure

Consecutive adult patients (16 years or more) attending the selected health centres were invited to answer the above questionnaires, before their consultation, i.e. in the clinics facilities, while waiting to be called by the doctors. Because one third of the patients attending primary care in Sao Paulo are illiterate, it was decided to read the items to all patients, in order to standardize the procedure. Five research assistants were trained for this purpose, and they conducted the interviews privately, in proper consulting rooms, separated from other patients. Data thus collected were coded and transferred to computer facilities, and analysed by means of two statistical packages, SPSS-X²³ and GLIM.²⁴

Results

Data collection lasted for 15 weeks, from 10 September to 18 December 1987: 1502 patients

were approached, of whom 4.6% (69 patients) did not answer the questionnaire. Two were unable to comply because of acute ill-health, three were deaf and illiterate, two displayed symptoms of acutely disturbed behaviour, and another two could not communicate, probably due to chronic mental deficiency. The remainder in this group simply refused to answer the interview, even though they did not know its content.

The screened sample consisted then of 1123 women and 310 men, a predominance of women attenders producing a sex ratio of 1:3.6 (male/female). Subjects' mean age was 43.8 years, ranging from 16 to 87 years. Mean family income per person, here expressed in pounds, was approximately £30 per month, although its values ranged from £10 to £450 per month. Five per cent of the patients were unemployed, 14% retired, and 43% were housewives. Most respondents were not born in Sao Paulo (85%), although the majority of them (84%) had been living in the town for more than 2 years.

Table 1 shows the frequency distribution of affirmative answers on the CAGE questionnaire. It can be seen that exactly 5% of the screened population scored two or more, and this is the group considered to be at risk drinking. Men showed a rate of caseness 4.2 times higher than women, a difference that is statistically significant at 0.01 level (chi-square=42.8; d.f.=1). About 8% of the group aged 31-45 years were high-scorers. The two subgroups that demonstrated the highest proportions of cases were the unemployed (16.2%; chi-square=37.6; d.f.=5) and those that were living in Sao Paulo for more than 6 months and less than 1 year (13.8%; chi-square=13.5; d.f.=5). For both variables, Employment Status and Migration Length, values of chi-squared were significant at the 0.01 level, and the subgroups of unemployed and of new immigrants, respectively, were responsible for the association. Other subgroups did not show significant differences.

To analyse the joint effects of sociodemographic factors on the at risk drinking group, the independent variables were put in a linear logistic model, three each time. Sex, age, job situation and number of years living in Sao Paulo proved to have significant and independent effects on the risk of being a CAGE high-scorer. Figure 1 displays the effect of the above variables on the risk of being alcoholic. From the same model, it is possible to build a linear logistic regression equation, from which the log odds of being a case for each of the variables subgroups can be calculated. In the present case, a woman in her sixties, that lived in Sao Paulo for more than 2 years and is retired, had only one chance in a thousand of answering affirmatively to more than two of the CAGE questions. On the other hand, a newly immigrant man in the 31-45 years group and that is also unemployed, has 58% risk of being a CAGE positive.

Discussion

The data presented here were obtained from a cross sectional survey performed at the primary care level in a large industrial city in Brazil. The setting has some important characteristics that must be described before we discuss the results. First, the primary health care network in the city of Sao Paulo is a service mainly for the urban poor; it is administered by the state/city departments of health, and provides medical services free-of-charge. Despite its extensive distribution within the city limits, it is seldom utilized by the more affluent members of the community, who attend different types of private medicine clinics. Second, it is not known, even approximately, what proportion of the population is registered in the health centres; it is very common for a family to keep appointments in more than one clinic in the same period of time.

Table 1. Subjects Scores on the CAGE

CAGE (Total score)	Male		Female		Total		Cumulative (%)
	n	(%)	n	(%)	n	(%)	
0	236	76	1063	95	1299	91	91
1	36	12	27	2	63	4	95
2	16	5	19	1.6	35	2	97
3	17	5	10	1	27	2	99
4	5	2	4	0.4	9	1	100

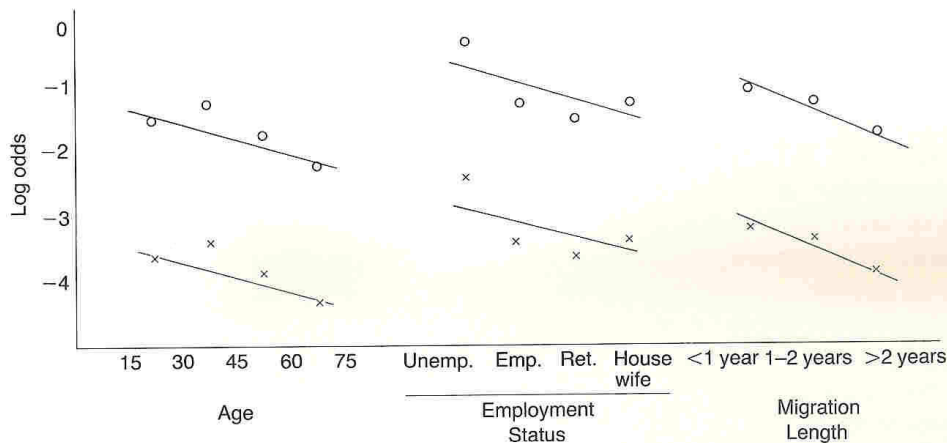


Figure 1. Effects of age, employment status and migration length on CAGE positives: ○ male; × female.

These characteristics of primary care in Sao Paulo make it not feasible for us to generalize our data to all available alternatives of first-contact medical care, or to obtain prevalence rates for the entire community. Thus, our results are representative of the population consulting the state/city primary care network only.

At Risk Drinking in the Screened Population

Only 5% of this population was considered to be at risk drinking, a low proportion, particularly when compared to the prevalence of other mental and physical disorders observed in primary care.^{25,26} It could be argued that a source of bias might have occurred when the CAGE items were read by the interviewers, instead of being completed by the patients themselves. Whether this fact could have lowered the rate of caseness in our sample or not is difficult to know only from the analysis of the present data. However, this finding is in strict accordance with previous research in this area: most investigations report low prevalence of alcoholism in primary care settings. In England, Shepherd *et al.*,²⁷ based on standardized assessments of general practitioners, observed a rate of just under two cases of alcoholism per 1000 at risk, and they commented that "This is a higher rate than most general practice studies have furnished for alcoholism . . . ; alcoholics presumably either keep away from their doctors or when they do attend fail to reveal their drinking habits" (p. 86). Twenty years later, King²⁸ used the CAGE to screen attenders in a West London health centre, and obtained a 9.3% rate of CAGE-positivity, although the proportion of respondents

consuming more than eight drinks daily represented only 5% of the total. In West Germany, the rates were, according to the authors, 'surprisingly low', and varied from 2.8 to 6.6%;²⁹ the authors also state that "Only relatively few alcoholics seem ready to ask for medical help if not forced to do so by somatic diseases" (p. 298). Similar study designs in the U.S. tend to show higher rates of alcoholism, but the clinics selected in these studies can hardly be considered to represent the network of the primary health care (see ^{30,31} for the most recent publications).

So far there has been no clear explanation for this phenomenon. We suggest the existence of a 'bypass' whereby alcoholics would seek direct specialist care only when suffering from the physical and mental consequences of alcohol-related disorders, therefore 'bypassing' the primary care level. Another aspect is related to patients' attitudes towards the helping role of medical agencies; patients are said to display a 'barrier' when consulting their doctors,⁹ to whom they release little information about their emotional problems or drinking behaviour. It has been suggested that the barrier occurs even before the consultation, when the patient decides whether his/her problems are worth a visit to the doctor.³² But, to our knowledge, no serious attempt has been made to provide a sound and systematic understanding of this fact.

Future research, particularly in Brazil, should investigate the 'career' of the alcoholic individual in the community, since it is known that there are many alternative approaches to the treatment of alcohol problems other than the official medical care system, such as religious centres, African cults, and 'benzedeiros' (folk medicine).

Socio-demographic Characteristics

Being a man, in the 31–45 years age group, unemployed and a newcomer to Sao Paulo increased the odds of becoming a member of the at risk drinking group. The finding that men are more at risk than women is shared by most investigators in the field of alcoholism, both at the primary care level and at the other levels of medical care and in the community.^{33,34} This is usually explained in terms of cultural patterns of drinking and the intense social stigma applied to women who drink.²⁸ Our results are also in correspondence with the literature concerning alcoholism and age, where there is a decrease of alcohol-related problems in the older age groups.³⁵

On the other hand, there is no consensus in the research related to the association between unemployment and higher risk of alcoholism: some studies demonstrate that when unemployed some people drink more, while in other studies it has been found that they drank less, or did not alter their drinking behaviour (see ³⁸ for a review). The group of unemployed subjects in our survey showed the highest risk of being CAGE-positive.

The attribute of being a newcomer to Sao Paulo, although an important aspect of our at risk drinking group does not find correspondence in the literature. We only managed to locate investigations related to place (or country) of birth, a demographic characteristic that did not prove to be associated with the risk of being alcoholic in our survey. This is certainly another area which deserves more attention in future research in the community, specially in huge industrial conurbations like Sao Paulo, with a never ending mass of immigrants.

Applications of the Results

Screening questionnaires like the CAGE are very useful in epidemiological studies, where much is learned from the distribution of health problems in the community and in the other levels of medical care. We think our study can be used as one among many tools in the hands of the city of Sao Paulo health administrators. It brings information which has been collected in a standardized way, and that has not been made available before. It also poses some questions to health policy makers both in the field of alcohol problems and primary care. The 'major' finding of the present study was a low rate of at risk drinking patients in the screened population. If we consider that: (a) other physical and mental disorders are substantially more frequent in the

primary care physicians already busy agenda; (b) in the less developed countries, due to the general shortage of resources, decisions must be taken upon well-defined priorities; then, the commonly pursued policy, so adequate for some health problems, that holds primary health care providers as responsible for detection (and sometimes treatment) of alcoholics, needs at least to be reviewed. Presently, people who are at risk drinking are not turning up in large numbers to their local health centres.

Acknowledgements

The authors are very grateful to Professor Griffith Edwards, and Drs Michael King, Greg Wilkinson and Jandira Masur for making helpful comments on earlier drafts of this article. Thanks are also due to Professor Michael Shepherd for his constant support, and to the staff of the Sao Paulo city health administration. E. Iacoponi and R. R. Laranjeira are sponsored by CNPQ—Conselho Nacional de Desenvolvimento Científico e Tecnológico. The fieldwork was supported by FAPESP—Fundacao de Amparo a Pesquisa do Estado de Sao Paulo.

References

1. MOSER, J. (1982) *Alcohol Policies in National Health and Development Planning*, WHO Offset Publication n. 89 (Geneva, WHO).
2. GRANT, M. (1985) Alcohol policies, *WHO Regional Publications, European Series No. 18* (Geneva, World Health Organization).
3. CURRY, R. L. (1988) Alcohol demand and supply management in developing countries, *British Journal of Addiction*, 83, pp. 25–30.
4. BABOR, T. F., RITSON, E. B. & HODGSON, R. J. (1986) Alcohol related problems in the primary health care setting: a review of early intervention strategies, *British Journal of Addiction*, 81, pp. 23–46.
5. WORLD HEALTH ORGANIZATION (1978) *Primary Health Care. Report of the International Conference of Primary Health Care*, Alma-Ata, U.S.S.R., 6–12 September (Geneva, WHO).
6. KAMEROW, D. B., PINAIS, H. A. & MACDONALD, D. I. (1986) Alcohol abuse, other drug abuse, and mental disorders in medical practice, *Journal of the American Medical Association*, 255, pp. 2054–2057.
7. PRONAL (1987) *Programa Nacional de Controle dos Problemas Relacionados com o consumo do Alcool* (Ministerio da Saude, Brasil).
8. SANTANA, V. S. & ALMEIDA, F. N. (1987) Prevalencia de Alcoolismo e Consumo de Alcool em um Bairro de Salvador, *Revista Brasileira de Saude Mental*, 1, pp. 7–17.
9. CARLINI, B. H., PIRES, M. L. N., FERNANDES, R. & MASUR, J. (1986) O Consumo de bebidas alcoolicas entre estudantes de primeiro grau na cidade de Sao

- Paulo, *Jornal Brasileiro de Psiquiatria*, 35, pp. 279-285.
10. MASUR, J., CUNHA, J. M., ZWICKER, A. P., LARANJEIRA, R. R., KNOBEL, E., SUSTOVICH, D. R. & LOPES, A. C. (1980) Prevalencia de pacientes com indicadores de alcoolismo internados em uma enfermaria de clinica geral, *Acta Psiquiatrica y Psicologica de America Latina*, 26, pp. 125-130.
 11. MOREIRA, L. F. S., CAPRIGLIONE, M. J. & MASUR, J. (1980) Consumo de alcool em pacientes ambulatoriais de hospital geral na capital e no interior do estado do Rio Grande do Norte, *Revista da Associacao Brasileira de Psiquiatria*, 2, pp. 183-189.
 12. HARVEY, R. (1987) Clumsy giant: a survey of Brazil, *The Economist*, 25 April (Suppl.).
 13. EMLASA (1986) Empresa Metropolitana de Planejamento da Grande Sao Paulo SA (1986), *Indicadores Basicos Metropolitanos* (Documentos da Secretaria de Negocios Metropolitanos).
 14. SAUVER, G. B. (1983) O projeto de expansao da rede de servicos basicos de saude em Sao Paulo, *Cadernos da FUNDAP*, 3(6), pp. 59-70.
 15. MARI, J. J. (1987) Psychiatric morbidity in three primary medical clinics in the city of Sao Paulo, *Social Psychiatry*, 22, pp. 129-138.
 16. MAYFIELD, D. G., MCLEOD, G. & HALL, P. (1974) The CAGE questionnaire: validation of a new alcoholism screening instrument, *American Journal of Psychiatry*, 131, pp. 1121-1123.
 17. MURRAY, R. M. (1977) Screening and early detection instruments for disabilities related to alcohol consumption, in: G. EDWARDS, M. M. GROSS, M. KELLER, J. MOSER & R. ROOM (Eds) *Alcohol Related Disabilities*, WHO Offset Publication No. 32 (Geneva, WHO).
 18. EWING, J. A. (1984) Detecting alcoholism. The CAGE questionnaire, *Journal of the American Medical Association*, 252, pp. 1905-1907.
 19. KING, M. (1986) At risk drinking among general practice attenders: validation of the CAGE questionnaire, *Psychological Medicine*, 16, pp. 213-217.
 20. BERNARDT, M. W., TAYLOR, C., MUMFORD, J., SMITH, B. & MURRAY, R. (1982) Comparison of questionnaire and laboratory tests in the detection of excessive drinking and alcoholism, *Lancet*, i, pp. 325-328.
 21. MASUR, J. & MONTEIRO, M. G. (1983) Validation of the 'CAGE' alcoholism screening test in a Brazilian psychiatric inpatient hospital setting, *Brazilian Journal of Medical and Biological Research*, 16, pp. 215-218.
 22. EDWARDS, G. (1975) Epidemiology of what? Anglo-French Symposium on Alcoholism, INSERM/MRC, November 1975, vol. 54, pp. 13-22.
 23. SPSS^x (1983) *Statistical Package for the Social Sciences* (Chicago, SPSS Inc.).
 24. BAKER, R. J. & NELDER, J. A. (1978) *The GLIM system, Release 3; Generalized Linear Interactive Modelling* (London, Royal Statistical Society).
 25. GOLDBERG, D. & HUXLEY, P. (1980) *Mental Illness in the Community. The Pathway to Psychiatric Care* (London, Tavistock).
 26. ROYAL COLLEGE OF GENERAL PRACTITIONERS (1986) *Morbidity Statistics from General Practice 1981-1982—Third National Study* (London, HMSO).
 27. SHEPHERD, M., COOPER, B., BROWN, A. C. & KALTON, G. W. (1966) *Psychiatric Illness in General Practice* (Oxford University Press).
 28. KING, M. (1986) At risk drinking among general practice attenders: prevalence, characteristics and alcohol related problems, *British Journal of Psychiatry*, 148, pp. 533-540.
 29. DILLING, H., OSCHINSKY, A. & NIEDER, CH. (1987) Trends in epidemiological and evaluative research on alcoholism in the Federal Republic of Germany, in: B. COOPER (Ed.) *Psychiatric Epidemiology, Progress and Prospects* (London, Croom Helm).
 30. CYR, M. & WARTMAN, S. A. (1988) The effectiveness of routine screening in the detection of alcoholism, *Journal of the American Medical Association*, 259, pp. 51-54.
 31. COULEHAN, J. L., ZETTLER-SEGAL, M., BLOCK, M., MCCLELLAND, M. & SCHULBERG, H. (1987) Recognition of alcoholism and substance abuse in primary care patients, *Archives of Internal Medicine*, 147, pp. 349-352.
 32. THOM, B. (1986) Sex differences in help-seeking for alcohol problems—1. The barriers to help-seeking, *British Journal of Addiction*, 81, pp. 777-788.
 33. EDWARDS, G., CHANDLER, J. & HENSMAN, C. (1972) Drinking in a London suburb. I. Correlates of normal drinking, *Quarterly Journal of Studies on Alcohol*, 6 (Suppl.), pp. 94-119.
 34. FILLMORE, K. M. (1987) Women's drinking across the adult life course as compared to men's, *British Journal of Addiction*, 82, pp. 801-811.
 35. FILLMORE, K. M. (1988) *Alcohol Use Across the Life Course: a critical review of 70 years of international longitudinal research* (Toronto, Addiction Research Foundation).
 36. CRAWFORD, A., PLANT, M. A., KREITMAN, N. & LATCHAM, R. W. (1987) Unemployment and drinking behaviour: some data from a general population survey of alcohol use, *British Journal of Addiction*, 82, pp. 1007-1016.