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Use of a questionnaire to obtain an alcohol history from those attending an inner city accident and emergency department

T. G. BARRETT & C. H. VAUGHAN WILLIAMS

Department of Accident and Emergency, The London Hospital, London, England

SUMMARY

A screening questionnaire designed to take an alcohol history was used on 996 patients attending the London Hospital Accident and Emergency Department. Questions concerned with 'binge' drinking detected many problem drinkers who were not identified by questions on weekly alcohol intake or 'CAGE' questions. The relative increase in detection was particularly marked in women.

INTRODUCTION

Holt *et al.* (1980) suggested that up to 40% of patients in an accident and emergency department had previously consumed alcohol, determined by breath alcohol analysis.

Several surveys (Stockwell *et al.*, 1979; Wallace *et al.*, 1985; Redmond *et al.*, 1987; Yates, 1987) have refuted the use of breath testing as a screening device for alcohol abuse. Patients may attend accident and emergency departments some time after an accident sustained while intoxicated and be sober at time of attendance.

Biochemical and physiological markers such as gamma-glutamyl transpeptidase (GGT), mean corpuscular volume (MCV), urate and liver aminotransferase levels in the blood have also proved insensitive screening devices for alcohol abuse, (Stockwell *et al.*, 1979; Chick *et al.*, 1981; Bernadt *et al.*, 1982; Kristenson *et al.*, 1982; Wallace *et al.*, 1985; Royal College of General Practitioners, 1986). Clinical impressions have been found to be extremely unreliable (Yates *et al.*, 1987).

Many questionnaires have been written (Ewing *et al.*, 1970; Selzer, 1971; Mayfield *et*

Correspondence: Dr T. Barrett, 46 Shelmerdine Close, London E3 4UX, England.

al., 1974; Stockwell *et al.*, 1979; Hilton, 1981; Wallace *et al.*, 1985) but few have been used to screen patients entering an accident and emergency department (Redmond *et al.*, 1987; Yates *et al.*, 1987).

The Hilton Questionnaire, Hilton (1981), consisting of 32 items, identified 39% of attenders at an accident and emergency department as being problem drinkers (Redmond *et al.* 1987), but is time-consuming to administer routinely in a busy department.

Researchers at the Centre for Health Economics, University of York, designed a short questionnaire to encourage doctors to take an adequate drinking history (Rowland *et al.* 1987). This questionnaire was used to obtain an alcohol history from attenders at an accident and emergency department (Fig. 1).

PLEASE COMPLETE ALL QUESTIONS FOR ALL ATTENDERS AGED 16+ DURING THIS PERIOD OF DUTY—and mark Casualty Card with 'AS' in top right hand corner so that attenders are not questioned twice.

Age .....
Sex M/F

How is your general health?

Do you drink alcohol at all? Yes/No

(IF YES), On average how many days a week do you have something alcoholic to drink? DAYS

On average, on a day when you have something to drink, how much do you drink? UNITS

ONE UNIT ALCOHOL HALF PINT BEER or LAGER, ONE GLASS WINE, ONE MEASURE SPIRITS, ONE SMALL SHERRY/VERMOUTH etc

TOTAL WEEKLY UNITS

Score positive for alcohol related problems if 37 units (men)
25 units (women) Pos/Neg

Most people have times when they drink more than usual, on occasion, do you drink:

(men) seven pints of beer or lager, or seven double shorts, or 14 glasses of wine or sherry etc. or more? Yes/No

(women) four and a half pints of beer or lager, or nine shorts, or nine glasses of wine or sherry etc. or more? Yes/No

(IF YES) does this happen once a month or more? Yes/No

Do you feel you should cut down your drinking? Yes/No

Does anyone annoy you or get on your nerves by telling you to cut down your drinking? Yes/No

Do you yourself feel bad or guilty about your drinking? Yes/No

Do you drink first thing in the morning, to steady your nerves or get rid of a hangover? Yes/No

DAY OR NIGHT

August 1987

Fig. 1 London Hospital Accident and Emergency Department: screening for alcohol-related problems.

METHODS

The Accident and Emergency Department at the London Hospital sees approximately 80 000 patients per year. There is a large Muslim population comprising more than 15% of attenders.

Two casualty officers used the York Questionnaire to interview 996 unselected patients, aged 16 years or more, attending the Accident and Emergency Department between September and November 1987. Patients were interviewed during representative sessions which covered every day and night of the week. During each session the casualty officers aimed to interview every patient they attended. Omissions were due either to the clinical situation or to the forgetfulness of the casualty officer. In such circumstances a questionnaire was marked to that effect and included in the final analysis.

Standard units of alcohol were used to assess consumption, one unit comprising one half pint of beer, lager or cider, a glass of wine, a small glass of sherry, or a single measure of spirits.

Safe upper limits were those recommended by the Health Education Council (HEC) *That's The Limit* (1987): up to 36 units per week for men and up to 24 units per week for women. These were used to define those at risk.

The questionnaire consisted of three sets of questions.

The first set elicited the number of sessions per week and the average quantity drunk per session, thus giving the total weekly consumption of alcohol.

The second set identified binge drinkers. The definition of binge drinking for the purposes of this study was the consumption on one or more occasions a month of 14 units or more by men and 9 units or more by women.

The third set of questions consisted of modified 'CAGE' questions (put in the present tense from the original past tense) (Ewing *et al.*, 1970; Mayfield *et al.*, 1974).
The questions were:

(1) do you feel you should *cut down* your drinking?
(2) does anyone *annoy* you or get on your nerves by telling you to cut down your drinking?
(3) do you yourself feel bad or *guilty* about your drinking? and
(4) do you drink first thing in the morning, to steady your nerves or get rid of a hangover? (*eye-opener*).

An individual was considered to be drinking excessively with two or more positive replies.

The answers were coded, and the data entered into a computer storage file and analysed using the Statistical Package for Social Sciences (London University).

RESULTS

The age and sex distribution of the study population is shown in Table 1. There were 605 males and 379 females (sex of attender was omitted on 12 answer sheets). There were more men in each age group except the over 75s.

Table 2 shows the percentage of those who admit to drinking alcohol, however infrequently, in each age/sex group. There is a higher percentage of male drinkers than female in each age group. Over all age-groups, after allowing for differences in age structure, the ratio of female drinkers to male drinkers was 76·5%.

Table 3 shows alcohol consumption per week for males and females for whom it was

Table 1 Total population by age groups and sex

Age group	Males	Females
16–24	182	118
25–34	148	88
35–44	81	46
45–54	68	43
55–64	65	23
65–74	29	18
75+	19	37
Total	592	373

*Altogether there were 31 questionnaires in which either age and/or sex data were missing.

Table 2 Drinking population by age and sex

Age group	Males			Females		
	Total	Drinkers	% Drinkers	Total	Drinkers	% Drinkers
16–24	182	141	77·5	118	67	56·8
25–34	148	107	72·3	88	62	70·5
35–44	81	60	74·1	46	28	60·9
45–54	68	44	64·7	43	18	41·9
55–64	65	48	73·8	23	13	56·5
65–75	29	14	48·3	18	4	22·2
75+	19	9	47·4	37	7	18·9

Table 3 Alcohol consumption, men and women, all ages

Alcohol consumption (units per week)	Males *n* (%)	Females *n* (%)
Non-drinkers	152 (25)	160 (42)
⩽ 12 units	180 (30)	161 (42)
13–24 units	100 (17)	20 (5·3)
25–36 units	54 (9)	4 (1·1)
37–49 units	25 (4)	2 (0·5)
50–74 units	29 (5)	3 (0·7)
⩾ 75 units	27 (4·5)	1 (0·3)
Consumption data missing	38 (6)	28 (7)
Total	605 (100)	379 (100)

*Sex data missing from 12 questionnaires.

precisely known. Eighty-one (13·5%) males drank more than the Health Education Council safe limits (>36 units/week), compared to 10 (2·6%) females (>24 units/week), and 56 (9·5%) males drank more than 50 units a week.

Table 4 shows the cases scoring positively for binge and 'CAGE', against alcohol consumption per week (not including abstainers).

For the binge questions, 151 (25%) males and 29 (8%) females scored positively. Of those, 82 (13·5%) males and 24 (6·3%) females were not identified by questions on alcohol consumption. Most of the attenders drinking more than 50 units a week also scored positively for binge (60 and 54 respectively).

With the 'CAGE' questions, 73 (12%) males and 15 (4%) females scored positively. Of these, 37 (6%) males and five (1·3%) females were identified who said they drank less per week than the recommended HEC limits.

One hundred and eighty-nine (31·2%) males and 40 (10·6%) females scored positively on one or more sections of the questionnaire.

Table 5 shows that 25–34-year-old males and females are most at risk of alcohol-related problems (38·5% males and 19·5% females in the age-group). The proportion of men scoring positively on at least one section is greater than 35% in all age-groups up to the age of 55.

Table 4 Frequency of positive responses to binge or 'CAGE' questions, by alcohol consumption, men and women, all ages

Alcohol consumption (units per week)	M	F	Cases scoring +ve for Binge		Cases scoring +ve for 'CAGE'	
			M	F	M	F
< 25 u	280	181	56	24	27	10
25–36 u	54	4	26	1	9	1
37–49 u	25	2	19	–	9	1
⩾ 50 u	56	4	50	4	28	3
Totals	415	191	151	29	73	15

Table 5 Percentage of males/females in age group positive for alcohol abuse on one or more sections

Age group	Males Total	Males Scoring	Males Scoring % in group	Females Total	Females Scoring	Females Scoring % in group
16–24	182	65	35·7	118	11	9·3
25–34	148	57	38·5	88	17	19·3
35–44	81	29	35·8	46	6	13·0
45–54	68	24	35·3	43	1	2·3
55–64	65	11	16·9	23	3	13·0
65–74	29	2	6·9	18	1	5·6
75+	19	1	5·3	37	1	2·7

DISCUSSION

The York Questionnaire, combining questions on weekly alcohol intake, binge drinking and 'CAGE' questions, takes less than 2 min to complete, and can be used as a rapid screening device when incorporated into the doctor's history.

A total of 13·3% of males and 3·3% of females admitted to drinking more than 36 and 24 units per week respectively. These figures are similar to those of Wilson in a national survey (14% males drinking more than 35 units per week, and 3% of females drinking more than 20 units per week) (Wilson, 1980a,b). This accident and emergency population had a higher percentage of male heavy drinkers (9·5%), drinking 50 units a week or more, than the population in Wilson's survey (6%). Those who drank most were the 16–54-year-old males and the 25–34-year-old females.

The figures on weekly alcohol consumption also follow a similar pattern to those of Yates *et al.* (1987) who found, in his accident and emergency population, that 7% of men drank more than 50 units per week and 2·1% women drank more than 21 units per week.

There was a higher proportion of non-drinkers in the Whitechapel population (27% of males and 46% of females) than found by Wilson or Yates, probably influenced by the large Muslim population.

The 13·3% of men and 3·3% of women who drank at least as much as the Health Education Council limits referred to are at risk from alcohol-related illness, Health Education Council (1987) *That's The Limit*.

It should be noted that more recently the (possibly) safe weekly limits have been reduced to 21 for men and 14 for women (Royal College of Physicians, 1987).

Two distinct aspects of alcohol-related problems are those relating to intoxication and to regular heavy consumption (Royal College of General Practitioners, 1986). There is considerable overlap, but problems relating to intoxication include social psychological and physical problems such as accidents and trauma, domestic violence, child abuse and suicide (Sabey *et al.*, 1975; Murray, 1977; Royal College of General Practitioners, 1986). Thus any questions that relate to binge behaviour, giving some indication of frequency of intoxication, have relevance to accident and emergency departments. The York definition of 'binge' was chosen as the quantity of alcohol which would produce blood alcohol levels at least twice the legal limit for driving (80 mg/100 ml blood).

The binge questions had the highest detection rate of all the sections of the questionnaire. The relative increase in detection of at-risk attenders appeared to be particularly marked in women.

This survey has shown that two questions on binge drinking can identify many attenders at risk of alcohol-related problems not identified by questions on weekly alcohol consumption or by 'CAGE' questions.

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REFERENCES

Bernadt M. W., Mumford J., Taylor C., Smith B. & Murray R. M. (1982) A comparison of laboratory tests in the detection of excessive drinking and alcoholism. *Lancet* **i**, 325–8.

Chick J., Kreitman N. & Plant M. (1981) Mean cell volume and gamma-glutamyl transpeptidase as markers of drinking in working men. *Lancet* **i**, 1249–51.

Ewing J. A. & Rouse B. A. (1970) *Identifying the hidden alcoholic*. Read at the 29th International Congress on Alcoholism and Drug Dependence. Sydney, Australia, 2–6 February.

Health Education Council (1987) *That's The Limit*.

Hilton M. R. (1981) The Hilton Questionnaire. In: Measure of Drinking Behaviour. Windsor, NFER Publishing.

Holt S., Steward I. C., Dixon J. M. J., Elton R. A., Taylor T. V. & Little K. (1980) Alcohol and the emergency service patient. *British Medical Journal* **281**, 638–40.

Kristenson H. & Trell E. (1982) Indicators of alcohol consumption: comparison between a questionnaire (Mm-MAST), interviews and serum gamma-glutamyl transferase (GGT) in a health survey of middle-aged males. *British Journal of Addiction* **77**, 297–304.

Mayfield D., McLoud G. & Hall P. (1974) The 'CAGE' Questionnaire: validation of a new alcoholism screening instrument. *American Journal of Psychiatry* **131**, 1121–3.

Murray W. R. (1977) Head injuries and alcohol. In: *Alcoholism: A New Knowledge and New Response*. Edwards *et al.* (Eds). London, Croom Helm.

Redmond A. D., Richards S. & Plunkett P. K. (1987) The significance of random breath alcohol sampling in the accident and emergency department. *Alcohol and Alcoholism* **22**, 341–3.

Rowland N., Maynard A. *et al.* (1987) Doctors have no time for alcohol screening. *British Medical Journal* **295**, 95–6.

Royal College of General Practitioners (1986) *Alcohol—a balanced view*. Report from general practice 24 November.

Royal College of Physicians (1987) *A great and growing evil—the medical consequences of alcohol abuse*.

Sabey B. & Coding P. (1975) Alcohol and road accidents in Great Britain. In: *Alcohol, Drugs and Road Safety*. S. Isehstom & S. Lamber (eds). Toronto, Addition Research Foundation.

Selzer M. L. (1971) The Michigan alcoholism screening test: the quest for a new diagnostic instrument. *American Journal of Psychiatry* **127**, 1653–8.

Stockwell T., Hodgson R., Edwards G., Taylor C. & Rankin M. (1979) The development of a questionnaire to measure severity of alcohol dependence. *British Journal of Addiction* **74**, 79–87.

Wallace P. & Haines A. (1985) Use of a questionnaire in general practice to increase the recognition of patients with excessive alcohol consumption. *British Medical Journal* **290**, 1949–52.

Wilson P. (1980a) *Drinking in England and Wales*. London, HMSO.

Wilson P. (1980b) Drinking habits in the United Kingdom. *Population Trends* **22**, 14–18.

Yates D. W., Hadfield J. M. & Peters K. (1987) The detection of problem drinkers in the accident and emergency department. *British Journal of Addiction* **82**, 163–7.