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# **A clinical assessment of the consequences of alcohol consumption in 'communal' drinkers in the Zimbabwean Midlands**

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## **SUMMARY**

The study was undertaken to clinically assess the consequences of alcohol consumption in 'communal' drinking patients whose levels of alcohol

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consumption could not be determined accurately in grams of alcohol. The level of alcohol consumed by 100 adult 'communal' drinking medical patients per drinking session was scored on a scale 0–10. The score was based on a qualitative impression of how much alcohol was drunk, level of consciousness, behaviour and gait.

The frequency of drinking days in a week was scored on a 0–7 scale. The duration of drinking in years prior to registration at the clinic was also recorded. The pattern of diseases among the drinkers was compared to that of 70 adult non-drinkers. The individual diseases were ranked to association with alcohol consumption by the Kruskal-Wallis Test.

The drinkers attained a mean level score of  $5,75 \pm 2,16$ , a frequency of  $4,75 \pm 2,4$  days but the duration of prior drinking varied greatly. Gout, dilated cardiomyopathy, epilepsy and hypertension ranked highest in that order to alcohol usage. Rheumatic heart disease and *Diabetes mellitus* ranked low. The probability significance were, for level score  $p=0,005$ , frequency  $p=0,016$  and duration  $p=0,001$ .

This method was able to identify the morbid chronic medical diseases associated with alcohol usage in 'communal' drinkers. There is a need to evaluate it against a known screening instrument like the Alcohol Use Disorders Identification Test (AUDIT).

## INTRODUCTION

It is true, a medical history is incomplete without inquiring into the history of alcohol intake. The range of medical diseases associated with excessive alcohol consumption are well known.<sup>1,4</sup> There are also several established screening instruments for identification of those with harmful or hazardous drinking habits who are at risk of developing physical, medical and social problems.<sup>5,6</sup> The amount of alcohol consumed can be measured fairly accurately in grams of absolute alcohol when a known quantity of an alcoholic beverage of known concentration is drunk. For instance a half-pint (290 mls) of ordinary beer or a glass of wine or a single measure of whisky (known as a unit of alcohol or one standard drink) contains approximately 10 g of absolute alcohol.<sup>5</sup> A daily alcohol consumption of 20–40 g is known to be a risk factor contributing to accidents, injuries and chronic health problems.<sup>6</sup>

It is, however, not always possible to assess accurately the amount of alcohol drunk by an individual in situations where people share drinks from the same container or where the alcohol content of the beverage is unknown. Such a 'communal' drinker will usually drink as much as to attain his or her preconceived level without knowing the amount of alcoholic beverage consumed. This poses a special problem in evaluating the level of alcohol consumed on the health of such people, and may prove a barrier in counselling problem drinkers in general medical wards or primary health care settings.

The purpose of this study was to evaluate clinically the consequences of alcohol consumption in such 'communal' drinkers.

## MATERIALS AND METHODS

The medical records of patients entered into the Gweru Provincial Hospital Endemic Medical Diseases Register<sup>8</sup> between March 1973 and December 1990 were retrieved and used for the study. The main diseases registered are hypertension 36,6 pc, heart diseases 24,9 pc, *Diabetes mellitus* 12,4 pc, epilepsy 8,4 pc and inflammatory rheumatological diseases two pc. The register serves only patients who reside in Gweru City and a defined adjacent rural area, in the Midlands province of Zimbabwe, who primarily depend on public funding for their medical care. Only chronic, recurrent or important medical diseases diagnosed by a consultant Physician who require long term follow-up or treatment are registered.<sup>8</sup> Diseases like cirrhosis and hepatocellular carcinoma which are considered to have no effective treatment are routinely excluded from the register. A history of alcohol consumption is routinely taken and recorded at the time of registration. It has been the practice of the register clinic since its inception in 1973 to document alcohol consumption of all patients.

In this study, the registered patients were categorized into two groups of those with recorded history of alcohol consumption and those without. Using computer generated random numbers, 100 cases from each of the two groups were selected for further study. All patients under 20 years of age at the time of registration were excluded.

For each patient the following information was extracted; the main medical disease diagnosed, sex,

age at diagnosis and alcohol consumption. The effect of alcohol consumption on the individual at each drinking session had been scored on a scale 0–10 based on a qualitative impression of how much was drunk, level of consciousness/behaviour and gait as shown in Table I. The interview was done by a specially trained clinical nursing sister (N M), indigenous to the area, on the day of registration, in confidence when the patient was sober, alone or with a relative or friend.

*Table I: Qualitative assessment of effect of alcohol after a drinking session*

Points on Scale	Effect on the individual
0	No alcohol drunk
1	Very little drunk, conscious, normal gait
2	Little drunk, conscious, normal gait
3	Moderate drunk, conscious, normal gait
4	A little excited, normal gait
5	Moderately excited, normal gait
6	Very excited, normal gait
7	Very excited, mild drunken gait
8	Excited, severe drunken gait
9	Semiconscious, unable to walk
10	Unconscious.

The frequency of drinking was based on how many days of the week the patient normally drank and was scored on a scale on a scale 0–7. Also the duration in years of drinking prior to registration was noted. The data were analysed using an Amstrad personal computer and SPSS software system. The diseases as they occur in patients were combined and ranked according to the parameters of the effect of the sessional consumption of alcohol, the frequency of days of drinking in a week and the duration of drinking prior to diagnosis. The mean rank score for each individual disease was determined and the Kruskal-Wallis statistic computed. The larger the mean rank, the closer would be the association of the disease to the parameter evaluated. The Chi-squared ( $X^2$ ) test was used for association and the significance level was set at  $p \leq 0,05$ . A significant Kruskal-Wallis statistic would suggest that the disease's association to the parameters assessed individually, would not be the same.

## RESULTS

The total number of registered patients was well above two thousands but only 1 005 patients had a definite recorded history of no alcohol use while 705 patients had a record of drinking. All the 100 patients sampled from the alcohol drinking group were 20 years old and above and were therefore included in the study while only 70 of the 100 sampled from the non-drinking group were of the age to be included. The total number studied was therefore 170.

Of the 170 patients, the mean age was 50 range 20–83 years, 94 were men and 76 were women. Among the alcohol drinking group only 27 pc were women, 73 pc being men, but in the non-drinking group it was the reverse, 70 pc women and only 30 pc men.

The percentage frequency distribution score of the usual level of drinking attained per session and the frequency of drinking per week in the alcohol group is shown in Table II.

*Table II: The drinking scores of the 100 drinking patients*

Score	pc of patients for session effect score	pc of patients for frequency days in a week
1	0	13
2	11	15
3	13	14
4	5	4
5	14	0
6	11	0
7	18	54
8	23	—
9	5	—
10	0	—
Total	100	100

The mean level of drunkenness score was  $5,75 \pm 2,16$  and the frequency per week was  $4,74 \pm 2,4$  days. Forty two pc of patients drank on three days while 54 pc drank on seven days a week. Those whose level of drunkenness score was six or higher and the frequency per week was five or greater were considered above average drinkers. The duration of drinking prior to registration is shown in Table III.

*Table III: Percentage frequency distribution of drinking patients according to duration of prior drinking*

Duration (years)	pc of patients
1-5	25
6-10	22
11-15	15
16-20	15
Over 20	23
Total	100

The commoner treatable diseases registered were hypertension (n=53), rheumatic heart disease (n=31), diabetes (n=29), dilated cardiomyopathy (n=17), epilepsy (n=7), gout (n=2) and a sizeable collection of miscellaneous others (n=31). The diseases were ranked to alcohol consumption using the Kruskal-Wallis Test as shown in Table IV. The association of these diseases with alcohol usage ranked high in gout, dilated cardiomyopathy, epilepsy and hypertension but low in rheumatic heart disease, diabetes and the miscellaneous others.

*Table IV: Kruskal-Wallis ranking of diseases to alcohol drinking session effect, weekly frequency and duration of prior drinking in the 170 patients.*

Disease	Mean Rank Level Score	Mean Rank Frequency	Mean Rank Duration
1. Gout (n=2)	136,5	Score 143,5	(Years) 142,0
2. Dilated Cardio-myopathy (n=17)	118,9	115,5	127,1
3. Epilepsy (n=7)	101,1	92,3	95,1
4. Hypertension (n=53)	87,8	89,1	88,2
5. Rheumatic Heart Disease (n=31)	78,7	77,1	78,2
6. Diabetes (n=29)	64,0	68,9	70,0
7. Others (n=31)	83,1	81,6	74,1
Statistic	$\chi^2 = 18,37$	$\chi^2 = 15,56$	$\chi^2 = 22,42$
Probability	$P \leq 0,005$	$P \leq 0,016$	$P \leq 0,001$
Significance	S	S	S

The frequency distribution of the four main diseases namely dilated cardiomyopathy, hypertension, diabetes and rheumatic heart disease in the drinking group did not differ significantly when those who drank above the average (n=41) were compared with those who drank below the average (n=37), ( $\chi^2=1,848$  p>0,10).

## DISCUSSION

It has been possible to assess the influence of alcohol consumption on some diseases seen in patients who drank beverages whose alcohol contents could not be quantified definitively. The method studied is not a screening test like the Alcohol Use Disorders Identification Test (AUDIT)<sup>5</sup> which identifies those with hazardous drinking, but it has confirmed those diseases already known to rank highly on the long term effect of alcohol. It does not determine a causal relationship between alcohol and the disease.

Since the self-reporting of alcohol use was done when the individual was sober and in confidence by a person indigenous to the area and culture at the time of recording other clinical data, it is assumed that false information was minimised.<sup>9</sup>

The bimodal distribution of drinking days in a week suggests that there are two clear groups of drinkers. Those who drink on one to three days probably drink on weekends only while the other 54 pc drink throughout the week. Twenty eight pc of the drinkers usually attained levels of eight to nine scores when gait becomes seriously disturbed. The duration of drinking prior to registration varied considerably.

The number of patients who had drunk for a few years approximated that of those who had drunk for over twenty years. The association of excessive alcohol use and gait is well recognized.<sup>1,10,11</sup> Two cases of gout were included in this study and both were in above average drinkers group. Gout is not necessarily a rich person's disease since it has been reported in those who would otherwise be categorized in a lower socio-economic group, particularly in those who drink home brewed or home distilled alcoholic beverages in excess.<sup>10</sup>

Dilated cardiomyopathy has been shown previously to be associated with alcohol excess.<sup>2,12</sup> In this study the disease ranks highly to use of alcohol. The high rank score of epilepsy with alcohol use found in this study is not surprising since alcohol *per se* can cause or aggravate seizure attacks. Epileptics should always be advised strongly against drinking. Similarly the association of alcohol excess to the development of hypertension is also well known. The high rank score is consistent with previous findings.<sup>3</sup>

Rheumatic heart disease (RHD) ranking of alcohol use in this study was low partly because the disease afflicts relatively young people<sup>13</sup> who would normally be non-drinkers and it is not known to be associated with excessive alcohol consumption. *Diabetes mellitus* rank to alcohol use was quite low in this study but the risk of developing non-insulin dependent *Diabetes mellitus* in heavy drinkers has been found in previous studies, but also low.<sup>4</sup> The diabetics however, should be discouraged from drinking since alcohol would predispose them to pancreatitis, hypoglycaemia and other metabolic disturbances which would render treatment particularly difficult.

An attempt to demonstrate the occurrence of particular diseases among above average and below average drinkers did not reach significant levels. Difficulties in discriminating between infrequent/moderate drinkers and heavy drinkers have been encountered elsewhere.<sup>14</sup>

A future study should be undertaken to attempt to standardise the scales used in this study against established screening instruments such as the AUDIT to find out whether this method could be established as an alternative screening instrument particularly suitable to populations or cultures who drink beverages whose alcohol content are not accurately known or who share drinks from a common container. If this was to be, the method would be applicable in general medical practice<sup>15</sup> and rural Primary Health Care settings when a brief but effective intervention with those at risk might be possible. Thus far it has been possible to identify common chronic diseases associated with alcohol consumption in 'communal' drinkers in an urban and peri-urban area of Zimbabwe.

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#### REFERENCES

1. Gibson T, Rodgers A V, Simmonds H A, Court-Brown T, Todd E, Meilton V. A controlled study of diet in patients with gout. *Ann Rheum Dis* 1983;42:123-7.

2. Regan T J. Alcohol and the cardiovascular system. *JAMA* 1990;264:377-81.
3. Klag M J, Moore R D, Whelton P K, Sakai Y, Comstock G W. Alcohol consumption and blood pressure: a comparison of native Japanese to American men. *J Clin Epid* 1990;43:1407-14.
4. Holbrook T L, Barret-Connor E, Wingard D L. A prospective population-based study of alcohol use and non-insulin dependent *Diabetes mellitus*. *Am J Epid* 1990;132:902-9.
5. Babor T F, De la Fuente J R, Saunders J, Grant M. The Alcohol Use Disorders Identification Test. WHO/MNH/DAT/89.4; WHO, Geneva 1989.
6. Babor T F, Kranzler H R, Laucerman R J. Social drinking as a health and psychological risk factor: Anstie's limit revisited. In : Galanter M (Ed) *Alcoholism*. Vol 5, New York:Plenum Press, 1987;373-402.
7. Bernadt M W, Mumford J, Taylor C, Smith B, Murray M. Screening for disease : comparison of questionnaire and laboratory tests in the detection of excessive drinking and alcoholism. *Lancet* 1982;i:325-8.
8. Mabonga N, Mascra J, Davies J C A, Taylor D M. Initial experience with an Endemic Disease Register. Part I. The System. *Cent Afr J Med* 1975;21:5-8.
9. Midanik L T. Perspectives of the validity of self-reported alcohol use. *Br J Add* 1989;84:1419-23.
10. Lutalo S K. Clinical gout: an experience from Zimbabwe. In press *East Afr J Med* (APECA Suppl) 1991;vol 68.
11. Graham R, Scott J T. Clinical survey of 354 patients with gout. *Ann Rheum Dis* 1970;29:461-8.
12. Klatsky A L, Armstrong M A, Friedman B D. Risk of cardiovascular mortality in alcohol drinkers, ex-drinkers and non-drinkers. *Am J Cardiology* 1990;66:1237-42.
13. Lutalo S K, Mabonga N. Experience on follow-up of registered rheumatic fever patients in the Zimbabwean Midlands. *Trop Geog Med* 1986;38:277-82.
14. Flagyl K M. Agreement between two dietary methods in the measurement of alcohol consumption. *J Stud Alcohol* 1990;51:408-14.
15. Saunders J B, Conigrave K M. Early identification of alcohol problems. *Can Med Ass J* 1990;143:1060-9



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