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# Alcohol Consumption and the nature of Alcohol related problems in Botswana: A Preliminary report

*by J. Finlay and R.K. Jones*

## Introduction

Public accounts over the last few years concerning the consumption of alcohol in Botswana have tended to suggest a widespread increase. The Daily News, Botswana's only newspaper, has increasingly published items dealing with excessive consumption. For example, we are informed (June 25, 1982, No. 121) that the North East District Council's model bye-laws should prohibit the intake of alcohol by those under 18 years of age and alcohol should not be sold to those already inebriated.<sup>1</sup> Similarly, the same paper (August 10, 1982, No. 157 and June 2, 1982, No. 104) recently urged the Bakwena to drink less<sup>2</sup> and the Central District youth to stop 'corrupting' themselves with alcohol and 'dagga'.<sup>3</sup> Other indications of a growing concern over a perceived problem of increasing alcohol consumption include a special 'Round Table' radio programme<sup>4</sup> and various pronouncements from special interest groups.

The difficulty of assessing industrial attrition, loss of productivity and deficit to the economic section is greater than it would be in a more developed country. Similarly alcohol-related social problems such as child neglect and personal abuse are difficult to assess. Sporadic declaration by public figures directed against drunkenness and public affray occur both on Radio Botswana and in The Daily News. Not infrequently politicians and church leaders lament the decline of traditional constraints exercised by the community on individual behaviour and perceive alcoholism as a 'social pathology'. With increasing urban drift (177% increase between 1971 and 1981)<sup>5</sup> and rising unemployment (83,400 out of the total population in 1980 were employed in the formal sector)<sup>6</sup> alcoholic intake per capita is expected to increase.

Thus, from the above references, it would appear that an alcohol problem exists and is growing in Botswana or at least there is enough general public concern to warrant a more detailed investigation into the matter.

It is the primary purpose of this paper to describe the overall rate of alcohol consumption and the reported consequences it has for the road safety and health sectors of the country.

## Methodology

The information reported was obtained from publications of the Ministry of Health, the Ministry of Works and Communications, the Department of Customs and Excise, and from interviews with the commercial producers of alcohol and principal importers of alcohol to Botswana. In addition, extensive information has been obtained from Haggblade's study of local and commercial beer brewing in Botswana.<sup>7</sup> Chemical analysis of alcoholic content was obtained from various sources.

## Alcohol Consumption

Commercial beer and Chibuku figures were obtained from the manufacturers while the imported wines and spirits were taken from external trade statistics of the Department of Customs and Excise. The data on Khadi (a wine-like drink) and "bojalwa" (the home-brewed sorghum beer) were estimated from information collected by Haggblade in rural and urban sample surveys of traditional village brewers.<sup>8</sup> From these surveys, Haggblade found that 75% of the country's home brewers purchased commercial malt to brew their beer and that an average brewer used 10 kilograms of malt to make 100 litres of beer. The total quantity of home-brewed sorghum beer was estimated from the amount of malt sold in 1981. It is further estimated that there are 400 liquor outlets in Botswana.

## Health Problems

Data on alcohol-related health problems were abstracted from the most recent statistical publications of the Ministry of Health and from discussions with technical personnel working for the Ministry of Health.

## Traffic Accidents

Data on alcohol-related traffic accidents were obtained from transport statistics of the Ministry of Works and Communications and from discussions with the Botswana National Police Force.

## **Results**

### Alcohol Consumption in Botswana

As seen in Table 1 more than 137 million litres of alcoholic beverages are estimated to have been consumed in Botswana during 1981. When converted to litres of pure alcohol, it is seen that over 5 million litres were consumed in Botswana during the year. This represents 5.7 litres per capita or 10.3 litres of pure alcohol for the estimated 54.8% of the population aged 15 and over (513,257). Age group estimation was taken from the 1971 Census Projections<sup>14</sup> - (constant fertility, declining mortality and no permanent emigration), as applied to the 1981 Census.<sup>15</sup>

### Effects of Alcohol on Health

Although reference to the destruction of individual and community health and welfare was alluded to in the Introduction to this paper actual quantitative evidence of this is much more difficult to find in reports available to us. The following information was therefore taken from such reports and interviews.

#### **A. Mortality**

It is estimated that almost all deaths among persons over 25 in 1979 from cirrhosis of the liver were due to alcoholism.<sup>16</sup> This represents 3.7% (35 out of 956) of all deaths in persons aged 25 or over during the year.<sup>17</sup> However, this is considerably higher than data reported for 1977 (1.6%),<sup>18</sup> 1975 (2.4%),<sup>19</sup> and 1974 (2.6%).<sup>20</sup>

### Morbidity

Since reasons for out-patients visits to health facilities are neither specific enough nor available by age, it was impossible for the authors to use this sizeable body of information. Thus, attention was turned to in-patient morbidity, or hospital discharge diagnoses from the general hospitals of Botswana, both government and private. In Table II, data on alcohol dependence, chronic liver disease, and certain other possibly alcohol-related diagnoses for those 15 years of age and over are shown.<sup>21</sup> Thus, these 476 diagnoses are seen to account for only 1.1% of all hospital discharges. Among men of this age group, the percentage discharges is slightly higher (3.15%).

Whereas data from general hospitals appear to show little evidence of alcohol-related morbidity, discharge data from the mental hospital at Lobatse is perhaps more instructive. The two reported relevant categories of alcoholic psychosis and alcoholism account for 12.6% (118 of 937) of all discharges and 18.0% (108 of 601) of all male discharges from the country's mental hospital.<sup>22</sup>

In Table III, relevant reasons for out-patient visits to mental health clinics are inspected. Here it is seen that 5.9% of all visits, and 9.0% of all male visits, are for reasons related to problems with alcohol.<sup>23</sup> In data from the annual report of the Lobatse Mental Hospital for 1980<sup>24</sup> alcohol-related reasons for visits to rural mental health clinics accounted for 8.3% of all visits. Despite this relatively low rate, when all schizophrenias were lumped together, alcohol-related visits were the third most frequently reported reason for attending these rural mental health clinics.

### Traffic Accidents and Alcohol Use

According to the most recent reported figures for causes of motor vehicle accidents (1980)<sup>25</sup> the category 'Intoxication' accounted for 154 of the total 2253 motor vehicle accidents that year - or 6.8% of all traffic accidents. This was down slightly from the similar figure of 1976<sup>26</sup> which was 9.1% (164 of 1800). However, the 154 alcohol-related traffic accidents of 1980 accounted for 28 of the 116 deaths due to traffic accidents, or 24% of all deaths. This represents an increase over the 10 deaths (out of 106) attributed to accidents involving alcohol during 1979.

### Discussion

From the data presented, we thus see that nearly 6 litres of pure alcohol were available for consumption by every person in Botswana during 1981. It is worth noting that 'consumption' is actually calculated from alcoholic beverages produced and/or imported into Botswana during 1981 just as are comparable figures of other countries. However, in contrast to the bottled alcoholic drinks of developed countries, the village-made wines (khadi) and beers (bojalwa) that contribute heavily to consumption in Botswana have limited shelf lives. In the case of the factory-made sorghum beer (Chibuku), this is estimated at a maximum of five days after which the beverage 'goes off' and is no longer fit for consumption. Nevertheless, factory managers of Chibuku consider such wastage to be negligible.<sup>27</sup> From the many anecdotes told of villagers drinking until all the beer is finished, the authors surmise that there is also little wastage of home-made brew. In Table IV, Botswana consumption is compared with the annual average consumption of several developed countries in 1968-70.<sup>28</sup> From this it is seen that the wine-drinking countries of France and Italy, and the beer-drinking country of Germany are the greatest consumers and that Botswana consumption equals that of Sweden and is more than that of Southern Ireland and

Norway. However, it is well documented that different drinking patterns of countries may skew the results of a valid comparison of consumption rates. Haworth and Serpell<sup>29</sup> noted in relation to Zambia, for example, that more than 50% of the populations they studied were 'abstainers' and that only 15% were 'regular heavy drinkers'.

While the neighbouring Zambian study made no attempt to estimate the quantity of local or traditional alcoholic beverages, this has been possible in Botswana. Thus 65 million litres of home-brewed sorghum beer was estimated to have been produced during 1981. It has been estimated that over 5,000 households are dependent on home-brewing<sup>30</sup> and that 31% of consumer expenditure on alcoholic drinks is for purchases of sorghum beer.<sup>31</sup> This represents a 'bojalwa' annual consumption of 131 litres for every person in Botswana who is 15 and over, or more than one large cup of traditional beer per day for every male and female adult living in Botswana. In addition, the quantity of tinned and bottled beer consumed annually in Botswana represents 98 tins per year for every adult.

Finally, it should be recognised that the alcoholic content of home-made beverages, and particularly the wines, is not always consistent and thus the alcoholic content estimates employed in this paper are only approximate. Depending on what is added to the drink, it is estimated that 'khadi' may vary anywhere from 2 to 20% alcohol content per volume. Obviously then, the overall consumption figures reported herein can only be approximations.

Turning away from the quantitative aspects of alcohol consumption in Botswana, what then are the effects of alcohol drinking on the country's population? It must be emphasised that only negative consequences of alcohol drinking were investigated in preparing this report. However, in one village survey of alcohol consumption patterns, nearly two-thirds of those who drank reported that they did so because they considered alcohol to be 'a food'.<sup>32</sup> Indeed the sorghum-based beer is reputed to have a considerable nutritive value. In his treatise on Sorghum, Doggett<sup>33</sup> estimates that whole grain sorghum contains 9.5% protein and further states that "it would seem that ordinary sorghum beer is a drink of low alcoholic content but with enhanced levels of Vitamin B and is a useful dietary supplement when taken in moderate amounts". One figure given for protein content of unclarified sorghum beer is 2.6%.<sup>34</sup>

The principal effect of alcohol on health in Botswana which can be compared to those found elsewhere is the mortality from cirrhosis of the liver. Where other diseases (such as the tropical diseases of bilharzia and malaria) may be ruled out, cirrhosis is generally attributed to excessive intake of alcohol in the over 25 age group. From this population, the 35 deaths from cirrhosis represent a specific death rate of 12.0 per 100,000 population. This figure was obtained using the 1979 population estimate from the 1971 census. The 1981 census indicates that all estimates from the 1971 census may have been low. Thus the actual specific death rate for cirrhosis in the 25+ age group may have been slightly lower - say, in the 11.3 - 11.5/100,000 range. However, in addition it should be acknowledged that reported cirrhosis death rates in other recent years were much lower<sup>35</sup> and that an overall average for the past eight years was 7.1. In Table V, this rate is compared with that of several developed countries in 1972.<sup>36</sup> Thus, Botswana's cirrhosis rate is seen to be higher than those of the U.K. and Southern Ireland though nowhere near the cirrhosis death rate of the U.S.A. and the European countries which consume more alcohol.

While every health worker has a tale about alcohol abuse in her community, very few of these cases appear in the patient statistics received from clinics and hospitals. Probably this is because the actual reason for the clinic visit may be due to a gastric

disturbance or an injury. In Zambia, it was reported that 55% of the assault cases involved alcohol.<sup>37</sup> Thus, neither out-patient nor general in-patient statistics provide much information on morbidity. As seen in Table II, however, morbidity from alcohol-related conditions in 1979 was three times higher for men than it was for women. For specific information on illness from alcoholism, then, it is necessary to examine the mental health statistics. Thus, as reported, 18% of all males in the country's mental hospital during 1979 were there for reasons related to alcohol. It should be noted, however, that this percentage is based upon 'discharge' data and that since Botswana was in the process of shifting from a traditional hospital approach to their present community approach to mental health care in 1979, there were an unusually large number of discharges that year. A recent examination of the mental hospital records over a ten year period by one of the authors indicated that alcohol was implicated in 9.1% of the hospitalised patients during this time.<sup>38</sup> Since data were not yet published for all out-patient mental health clinics in 1980, it is not clear whether the increase from 5.9% to 8.3% between 1979 and 1980 for alcohol-related psychiatric out-patient visits is real or not.

Just over 9% of all traffic accidents in Botswana during 1980 were attributed to 'intoxication'. While not particularly an alarming figure, it must be remembered that these were accidents for 'reported' alcohol involvement. As is true for most countries of the world, it is believed that alcohol involvement in motor vehicle accidents is grossly under-reported in Botswana. In Zambia, only 2% of the road traffic accidents are reported as alcohol-related.<sup>39</sup> Realising that alcohol involvement in road accidents is probably under-reported, it must then be admitted that finding 24% of the road accident fatalities to involve alcohol is 'alarming' - unless, of course, there is a bias toward reporting alcohol involvement in only those accidents involving fatalities.

### Conclusions and Recommendations

1. By world-wide standards, the estimated per capita alcohol consumption in Botswana is not high.
2. In Botswana, little has been reported about the pattern of alcohol consumption among the population.
3. Reported general health statistics do not implicate alcohol as a serious 'health' problem in Botswana though it is responsible for a sizeable portion of mental health illness.
4. Alcohol abuse in Botswana constitutes a serious hazard to road safety.
5. Alcohol abuse represents a problem for some segment of every society, no matter how small. To further define the dimensions of the problem and to identify those factors important to the design of appropriate educational programmes for its prevention and control, further studies of population practices, beliefs, and attitudes regarding alcohol use in Botswana are required. Specifically, the following are recommended:
  - a. A country-wide sample survey concerning beliefs, attitudes, and practices of the population in Botswana.
  - b. A special school survey of youth to determine the age of adoption and other precursors to alcohol use in Botswana.

- c. A special survey of selected occupational groups to investigate the impact of alcohol use on productivity at the worksite and its related implication for the economic development of the country.
- d. A literature survey of applied educational programmes to combat alcohol abuse in other countries of Africa and the world.
- e. The implementation of an appropriate educational intervention and its use in a controlled study of its effect on the prevention and control of alcohol abuse in selected rural and urban areas of Botswana.

**TABLE I**  
**Alcohol Production<sup>a</sup> and Importation<sup>b</sup>**  
**for Botswana in 1981 (Alcohol Consumption)**

Type of Product	Litres <sup>f</sup> Produced or Imported	Percent <sup>g</sup> Alcohol Content	Litres of Pure Alcohol
Beer <sup>c</sup>	17,117,000	5.5%	941,435
Wine:			
Unfortified	620,000	11%	68,200
Fortified	531,000	16%	84,960
Spirits	603,000	43%	259,290
Khadi <sup>d</sup>	26,000,000	6%	1,560,000
Sorghum Beer:			
Factory <sup>e</sup>	27,679,000	3%	833,070
Home-made <sup>d</sup>	65,000,000	2.4%	1,560,000
TOTAL	137,640,000	-	5,306,955

**Notes**

- a. Alcoholic beverages produced in Botswana are bottled beer, factory and home-made sorghum beer, and khadi (a type of home-made wine).
- b. All commercial spirits and wines are imported into Botswana. Figures for these products in this Table were obtained from the Statistics section of the Botswana Government of Customs and Excise.<sup>9</sup> To confirm the overall accuracy of these figures, quantities of alcohol products imported by the two principal commercial liquor companies of Botswana were also obtained.<sup>10</sup>
- c. Practically all tinned and bottled beer consumed in Botswana is produced by Kgalagadi Breweries. "Beer" figures were obtained from them.<sup>11</sup> In addition 937,302 litres of bottled beer were imported in 1981 and 74,506 litres of cider.<sup>12</sup>
- d. Figures for the home-made wine (khadi) and the home-made sorghum beer (bojalwa) were taken from the Ministry of Commerce and Industry study by Haggblade.<sup>13</sup>
- e. Figures for the factory-made sorghum beer (Chibuku) were obtained from the Botswana Breweries Ltd., brewers of "chibuku" beer.
- f. All beverage figures were rounded to the nearest thousand.
- g. The percentage of alcohol content was taken from manufacturers, by chemical analysis, and by expert estimates.



TABLE II

Patient Discharges from General Hospitals in 1979 by Possible Alcohol-Related and All Other Diagnoses for the 15 Year and Over Age Group <sup>a</sup>, <sup>b</sup>.

Diagnosis	All Patients		Male Patients Only	
	No.	(%)	No.	(%)
Possible Alcohol-Related Illness:				
1. Nutritional Deficiencies	98	)	59	)
2. Alcohol Dependence	133	)	109	)
3. Physical Malnutrition due to Mental Illness	1	)		)
		)(1.1)		)(3.2)
4. Ulcer of the Stomach and Duodenum	62	)	42	)
5. Chronic Liver Disease	148	)	109	)
6. "Other" Poisoning <sup>c</sup>	34	)	24	)
All Other Illness	43,408	( 98.9)	10,581	( 96.8)
TOTAL	43,884	(100.0)	10,925	(100.0)

Notes:

- Data for this table were abstracted from Medical Statistics, 1978-79.<sup>21</sup>
- The small number of diagnoses for non-specific age groups were assumed to be in this 15+ age category.
- "Other" poisons (other than medicinal, parafin, mushroom, and animal bites) are included as "possibly" related to alcohol.

**TABLE III**  
**Out-Patient Visits to Mental Health Clinics for Alcohol-Related**  
**Reasons During 1979\***

Reasons for Visit	All Patients		Male Patients Only	
	No.	(%)	No.	(%)
<b>Alcohol-Related:</b>				
1. Delirium tremens	44	)	33	)
2. Korsakov's psychosis	2	)	0	)
3. Alcoholic hallucinations	62	) (5.9)	31	) (9.0)
4. Chronic alcoholism	251	)	209	)
5. Acute drunkenness	37	)	10	)
All Other	5,301	( 94.1)	2,859	( 91.0)
<b>TOTAL</b>	<b>6,697</b>	<b>(100.0)</b>	<b>3,142</b>	<b>(100.0)</b>

**Notes:**

\*Data for this table were abstracted from Table 6.4 of Medical Statistics, 1978-79.<sup>23</sup>

**TABLE IV**  
**A Comparison of 1981 Alcohol Consumption in Botswana**  
**with Several Developed Countries in 1968-1970\***

Country	Litres of Pure Alcohol per Capita
France	16.4
Italy	14.0
West Germany	11.3
Checkoslovakia	8.0
Canada	6.5
United Kingdom	6.2
U.S.A.	5.8
Botswana	5.7
Sweden	5.7
Southern Ireland	4.5
Finland	4.1
Norway	3.4

**Note:**

\* Data for the countries in this table were taken from Schmidt's paper on "Cirrhosis and Alcohol Consumption" Figure 2 which appeared in Alcoholism: New Knowledge and New Responses.<sup>28</sup> Botswana's figure was calculated from data in Table I of the current paper.

TABLE V  
Comparison of Average\* Cirrhosis Rate in Botswana with Rates of  
Selected Developed Countries for 1971-72\*\*

Country	Cirrhosis Mortality per 100,000 Population 25 Years of Age and Over
France	57.2
Italy	52.1
West Germany	39.6
U.S.A.	28.6
Checkoslovakia	28.1
Canada	19.6
Sweden	15.6
Norway	7.6
Finland	7.5
Botswana	7.1
Southern Ireland	7.0
United Kingdom	5.7

Notes:

- \* Obtained by averaging cirrhosis rates for 1974, 1975, 1977 and 1979 for their respective 25+ populations.
- \*\* Data for the other countries in this table were taken from Schmidt's paper on "Cirrhosis and Alcohol Consumption".<sup>36</sup>

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