

COMMENTARY: *IF YOU DRINK ALCOHOL, DRINK SENSIBLY: IS THIS GUIDELINE STILL APPROPRIATE?*

Objective: Alcohol abuse remains one of the most serious substance abuse disorders in South African society, resulting in inordinately large social, economic and health problems at all levels of society. Alcohol consumers in South Africa are estimated to drink 16.6L per annum with a per capita consumption of 7.1L. South Africa has one of the highest rates of death attributable to crime, violence, traffic accidents, and HIV/AIDS in the world. These rates have been directly related to the high prevalence of alcohol abuse and risky drinking patterns. A food-based dietary guideline that encourages alcohol consumption would appear to be not in the nation's best interest.

Methods: We conducted a search of websites supported by the World Health Organization to find published literature on substance abuse in South Africa and also reviewed the website of the Medical Research Council of South Africa for studies on the social impact of alcohol abuse in humans. We used the search terms alcohol guidelines, alcohol abuse, non-communicable diseases, health benefits of alcohol, moderate drinking, alcohol, and intake patterns and reviewed studies that had been published between 2002 and the current time.

Results: Based on evidence over the past two decades, messages that convey the positive health benefits of moderate alcohol consumption (eg, the increased levels of HDL cholesterol) should be raised and even encouraged for those who are very moderate drinkers (ie, one alcoholic drink/day for women and a maximum of 2 drinks/day for men). For those who do not consume alcohol at all, even moderate drinking is not encouraged. Nutrition educators should emphasize the negative consequences of alcohol abuse.

Conclusion: The current food-based dietary guideline, "*If you drink alcohol, drink sensibly*,"

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bly," from the South African Department of Health should not remain as is. (*Ethn Dis.* 2013;23[1]:110–115)

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INTRODUCTION

In 2002, the Department of Health in South Africa (SA) adopted food-based dietary guidelines (FBDGs) that included an alcohol-consumption guideline to be adopted by the general public: "If you drink alcohol, drink sensibly."¹ This guideline was based on findings from the South African Expert Consultation Group that examined published evidence on alcohol use. In this article, we examine evidence from 2002 to date to re-evaluate the appropriateness of this guideline.

When this guideline was developed, the responsible expert working group had much discussion on whether there should, in fact, be a guideline on alcohol. Much of the discussion centered on the negative aspects of alcohol consumption, the high prevalence of alcohol addiction, related crime and violence, and the concern that a guideline would have the unintended consequence of encouraging alcohol consumption. However, a strong body of evidence supports the cardiovascular health benefits of moderate alcohol consumption,² which made it difficult

to ignore since the FBDGs are meant to foster nutritional health and well being. The final decision was to include a guideline on alcohol that would clearly identify the recommended amounts of alcohol consumption in a supporting document to be called the *FBDG Guidelines*.

Socio-political Influences and Historical Trends on Alcohol Consumption in South Africa

The history of alcohol dependence in South Africa runs through the history of the country's segregation. In traditional African society, the use of alcoholic drinks was well-regulated socially.³ After colonization, the British unsuccessfully prohibited the use of alcohol by Africans in an attempt to prevent what they saw as social decay and disorder encouraged by its use.⁴ In 1962, it became legal for Black people to purchase alcohol from White-owned liquor stores.⁵ Alcohol was also seen as a means for establishing and maintaining economic and social control, particularly on the farms, mines and in urban industry.⁴ Employers at vineyards and other farms in the Cape, and in the emerging diamond and gold mines to the north, used alcohol to attract and retain workers from rural areas.⁵ Although not legally allowed, the 'dop' system is still practiced today on various vineyards in the Western and Northern Cape Provinces⁴ where workers receive alcohol as partial compensation in lieu of money.

In the townships, municipal beer halls were established by local authorities to help finance township development and control. The responses to these controls were abuse and social decay, as well as defiance and resistance. Many people turned to illegal activities related to

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Table 1. Percentage of high school learners who used alcohol by sex and race (YRBS) ^{9,10}

2002	Ever Used Alcohol			Used Alcohol in Past Month			Past Month Binge Drinking			Age of Initiation < 13 Years		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
N	4897	5584	10481	4799	5484	10283	4904	5592	10496	4811	5508	10319
National %	56.1	43.5	49.1	38.5	26.4	31.8	29.3	17.9	23	15.8	9	12
CI	53-60	40-47	46-52	36-42	24-29	29-34	27-32	16-20	21-25	14-18	8-10	10-14
Black %	52	37.8	44	34.4	21.7	27.3	27.1	15.7	20.7	13	7	10
CI	48-56	34-41	41-47	31-38	19-24	25-30	24-30	13-18	19-23	11-15	19-29	11-19.6
Colored %	67.2	65.1	66	49.1	44.1	46.4	38.5	26.9	32.3	24	15	19
CI	61-74	57-73	60-72	42-56	32-56	39-55	32-45	19-35	26-39	19-29	11-19.6	16-23
White %	88.4	84.1	86	65.3	58.3	61.4	38.8	33.6	35.9	34	19	26
CI	83-94	79-89	82-90	57-73	50-67	54-69	31-46	27-41	30-42	27-40	15-24	21-31
Indian %	40.1	39.3	39.7	37.3	21.9	29.4	31.8	16.1	23.7	21	8	15
CI	26-54	24-55	28-52	24-51	14-30	22-37	20-44	5-27	15-32	14-28	1-16	10-19

2008	Ever Used Alcohol			Used Alcohol in Past Month			Past Month Binge Drinking			Age of Initiation < 13 Years		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
N	4909	5129	10038	4878	5102	9980	4905	5120	10025	4914	5119	10033
National %	54.4	45.1	49.6	40.5	29.5	34.9	33.5	23.7	28.5	15.3	8.6	11.9
CI	51-58	41-50	46-53	37-44	27-33	32-38	31-36	21-27	26-31	14-17	7-11	10-14
Black %	51	40.3	45.5	38.4	25.7	31.8	32.4	20.9	26.4	13	6.6	9.7
CI	47-55	36-45	42-49	35-42	23-29	29-35	30-35	19-23	24-29	12-15	5-8	9-11
Colored %	63.7	70	67	45.3	51.8	48.7	37.6	39.5	38.6	21.5	16.8	19
CI	57-70	63-76	61-73	38-53	47-57	43-54	32-44	34-45	34-44	18-26	14-21	16-23
White %	73.9	78.4	75.9	59.8	51.9	56.4	41.4	39.6	40.6	31.9	22	27.5
CI	68-79	69-86	69-82	51-68	44-60	50-63	26-59	26-55	27-55	24-41	9-43	19-39
Indian %	68.8	57.8	62.6	42.2	28.9	34.8	30.2	17.4	23.1	34.1	17.7	25.1
CI	63-74	52-63	59-67	36-48	24-34	31-39	25-36	14-22	20-29	29-40	14-22	22-29

alcohol, both brewing sorghum beer and setting up illegal shebeens where alcohol was sold for on- or off-premise consumption. For some, setting up a shebeen was a move of resistance against the apartheid government, while for others it was a way to make a meager living.⁴ The establishment of shebeens was also a natural response to a situation in which there were 15 times as many legal liquor outlets per unit population in White suburbs compared to Black suburbs.⁵

It is important to note some of the differences in alcohol consumption in urban areas vs rural communities. Homebrews are more popular in rural areas where ancestral rituals and ceremonies are undertaken. Depression, due to unemployment, is also a key reason people in rural areas consume alcohol. Yet, in urban areas, alcohol is more accessible and affordable by the population. Reports indicate that, from 1970 to 1997 in South Africa, the consumption of malt beer increased rapidly; roughly 87% of the alcoholic beverages consumed was malt

and sorghum beer.⁶ South Africa was considered to be the world's fastest growing alcohol fruit beverage market, with a 10% increase in 1998.⁶

Higher levels of alcohol consumption have been found among South Africans who drink compared to residents of other middle-income countries.⁷ Urbanization has caused a shift in food intake, with increased use of cheaper and more energy-dense food and drinks, which often lack micronutrients.² Urban areas not only have a greater availability of cheaper, unhealthy foods but also higher rates of alcohol consumption. Chronic drinkers, particularly those who consume a substantial portion of their daily calories in the form of alcohol, often show evidence of malnutrition (eg, deficits in protein and certain micronutrients).² Despite new alcohol use policies developed during 1994-2009 (eg, the regulation of retail sales of alcohol, alcohol taxation and controls on alcohol packaging), alcohol abuse in South Africa is a growing public health concern.

DO SOUTH AFRICANS CONSUME TOO MUCH ALCOHOL?

Intake Patterns

Our knowledge on alcohol consumption patterns comes mainly from the South African Demographic and Health Survey (DHS) of 2003⁸ and from the Youth Risk Behavior Study (YRBS) of 2002⁹ and 2008.¹⁰

Nationally, for adults, 21.4% males and 6.9% females were categorized as being alcohol dependent.⁹ Rates of alcohol dependency among adults was highest in "colored" males (31.2%) and African males (21.6%) and lowest in White (10%) and Indian (11%) males. In women, alcohol dependency was highest in "colored" women (14%) and lowest in White women (1.7%). With regard to the provinces, the highest rates of dependency in males were found in the Northern Cape (38%), Eastern Cape (35.9%) and North West (34.5%). In females, alcohol dependency rates were

Table 2. Adapted from characteristics of adult alcohol consumption in different regions of the world 2000 (population weighted averages (Rehm et al 2003)¹¹

WHO Region	Beverage Type	Total Consumption in Litres	% Unrecorded Drinkers	% Heavy Drinkers	% Drinkers Among Males	% Drinkers Among Females	Consumption Per Drinker (litres)	Average Drinking Pattern
Africa E Ethiopia, RSA	Mainly fermented and beer	7.1	46	10.3	55	30	16.6	3.1
Africa D Nigeria, Algeria	Mainly fermented	4.9	53	5.3	47	27	13.3	
Europe A Canada, USA	Wine & beer	12.9	10	15.7	90	81	15.1	1.3
Europe C Russia, Ukraine	Spirits	13.9	38	18.6	89	81	16.5	3.6
Western Pacific A Australia, Japan	Beer & spirits	8.5	20	4.2	87	77	10.4	1.2

highest in Northern Cape (18.8%) and Free State (13.2%) and lowest in Kwa-Zulu Natal(1.9% and Mpumalanga (2.7%).⁸

In 2002, 16% of South African youth started drinking alcohol before aged 13 years⁹ but, among White and colored males, the rate of early drinkers increased to 33.6% and 24.1%, respectively. (Table 1) Nearly one third (29.3%) of males and 17.9% of females indicated that they had a binge drinking episode in the past month. Similar figures are found for the youth in 2008; however, compared to 2003, there were a few disturbing increases: binging in the past month increased nationally from 23% to 28.5%; 20.7% to 26.4% among Blacks; 32.3% to 38.6% among coloreds and 35.9% to 40.6% among Whites.^{9,10} These data clearly indicate that high alcohol consumption is a serious problem among South African youth and adults, being most severe in males.

Per Capita Consumption of Alcohol

Consumption of alcohol in South Africa has been reported to be 16.6 L per person per year of those who drink alcohol; 10.3% are classified as being heavy drinkers, namely >40g/day/males and >20g/day/females.¹¹(see Table 2, noted as a country in Africa E region) On a scale of 1–4, with 4 being the highest level of drinking (ie, proportion

of drinkers who drink daily or nearly daily), South Africa was categorized as 3.1. The Europe C region had the worst drinking pattern of 3.6. The percentage of heavy drinkers in the Africa E region was, however, considerably lower than found in the Europe A and C regions. The percentage of heavy drinkers was, however, double the rate found in the Africa D region (Nigeria, Algeria, Angola, Gambia).¹¹ Parry and colleagues calculated alcohol per capita consumption in South Africa to be 7–8 L per person per year¹²; however, this value includes a large percentage of people who do not drink unlike findings (ie, 16.6 L/per person/year) from Rehm et al¹¹ based solely on persons who drink).

Alcohol consumption appears to have been normalized in South Africa through cultural activities and has been reported to be the primary substance of choice among patients seen at treatment centers, accounting for 62% to 78% of admissions in Cape Town, Durban and Port Elizabeth.⁹ Alcohol consumption is entrenched in South African society through all forms of media, the advertisement industry, agriculture (especially vineyards) and honed through cultural rites of passages, such as male initiation ceremonies and proving masculinity.¹³

Traditionally, drinking did not occur on a daily basis. People did not drink alone or just for the sake of

drinking. Rather drinking served a communal purpose and a ceremonial function.⁶ In their 2011 technical paper,¹ van Heerden and Parry cited the emergence of new drinking patterns, new types of alcohol, rapid socio-cultural influence such as urbanization, the growing number of food and wine festivals, and easy-to-access alcohol. Normalization of alcohol consumption in South Africa is attributable to accessibility, affordability, and peer influence.¹⁴

DETRIMENTAL ASPECTS OF ALCOHOL CONSUMPTION

Alcohol (ethanol) is metabolized mainly in the liver by alcohol dehydrogenase to form acetaldehyde with the transfer of nicotinamide adenine dinucleotide (NAD), reducing it to NADH.¹⁵ The acetaldehyde then loses hydrogen and is converted to acetate, which is released into the blood. Because of an excess of NADH, numerous metabolic disturbances occur, including hyperuricemia, hyperlacticacidemia, ketonemia and acidosis. The mitochondria use the hydrogen from ethanol, rather than the hydrogen from the oxidation of fatty acids, which leads to reduced fatty acid oxidation and accumulation of triglycerides.¹⁵ Furthermore, NADH may also promote fatty acid synthesis. Hypoglycemia may

also occur coupled with decreased gluconeogenesis due to ethanol. A sustained high alcohol intake leads to many social and health problems, including alcohol-related crime, violence and traffic accidents, risky sexual behavior and increased risk of HIV, fetal alcohol syndrome, liver disease, and malnutrition.²

The negative health outcomes of alcohol consumption far outweigh the positive ones in South Africa. In terms of burden of disease, alcohol accounted for 7% of deaths and 7.1% of all disability adjusted life years (DALYs) lost in South Africa in 2000, resulting in 1.1 million life years lost.¹² In terms of alcohol-attributable disability, fetal alcohol syndrome ranked third (18.1%), interpersonal violence second (23.2%) and alcohol use disorders first (44.6%). Of the DALYs related to injury, interpersonal violence attributed to alcohol accounted for 42.8% among males and 25.9% among females.

A systematic review on alcohol use trends in South Africa showed that risky and/or binge drinking was associated with alcohol-related deaths in 50% of transport and homicide deaths. Fetal alcohol syndrome was found at a rate of 10–74 per 1000 births and with multiple indiscriminate sex partners in those living with HIV.¹⁶ This review emphasized that South Africa was categorized into a group of countries that have the most hazardous patterns of drinking, where a third of its drinkers were found to drink at risky levels over the weekend and drinking to intoxication was common.¹⁶

A recent report by Rehm et al¹⁷ provides evidence of a causal relationship between an average volume of alcohol consumption and the following major diseases: esophageal cancer, rectum and colon cancer, female breast cancer, liver cancer, diabetes mellitus, alcohol use disorders, tuberculosis, mouth, nasopharynx, and oropharynx cancers, ischemic heart disease, ischemic and hemorrhagic stroke, hypertensive

heart disease, unipolar depressive disorders, epilepsy, conduction disorders, lower respiratory infections (pneumonia), cirrhosis of the liver, preterm birth complications and fetal alcohol syndrome.¹⁷

Chronic alcohol abuse leads to liver disease and cirrhosis, which is one of the most serious outcomes of alcohol abuse. The pathogenesis of alcoholic liver disease comprises three stages: hepatic steathorrhoea (fatty liver); alcoholic hepatitis (inflammation of the liver); and cirrhosis resulting from necrosis and regeneration, which leads to an increase in fibrous tissue formation changing the normal liver structure.¹⁷ At this stage, the person will usually develop ascites, gastro-intestinal bleeding, hepatic encephalopathy, and portal hypertension.

From a nutritional point of view it needs to be recognized that drinkers with risky habits frequently replace meals with alcohol. Although alcohol is high in calories (or kilojoules, 28 kJ/g), it is not metabolized as efficiently as carbohydrates and fats and is deficient in essential micronutrients.¹⁷ Impaired digestion results in malabsorption of vitamins, thiamin, B12, folic acid, zinc, and amino acids. Metabolism is also altered and certain nutrients are frequently affected, including thiamine, vitamin B6, vitamin D, zinc, vitamin A, magnesium, phosphorus and selenium.

SOCIAL AND LEGISLATIVE CONCERNS RELATING TO ALCOHOL CONSUMPTION

Social Concerns

With consumption per capita at 7–8 L per person per year¹² (all persons, not just drinkers) and given that half the population or more do not drink, the consumption of absolute alcohol per drinker is more than 16 L per person per year and places South Africa among the nations having the highest consumption of absolute alcohol per drinker in the world.⁷ According to the

World Health Organization, South Africa has also been identified as one of the nations with the most harmful patterns of alcohol consumption (eg, heavy episodic drinking).⁷ Reducing the high levels of alcohol consumption in South Africa will require comprehensive primary prevention efforts that address injury-related mortality, root causes of violent and accidental deaths, child abuse, poverty and suicide.¹⁸

The physical and emotional abuse of a child by a parent under the influence of a substance is also of concern around the world and in South Africa. Studies have shown the harmful effects of alcohol on the fetal development of unborn children of alcohol-dependent mothers.¹⁹ While child abuse is a crime in South Africa, the current law – the Child Care Amendment Act, 1999 (No. 13 of 1999) – does not consider the abuse of alcohol during pregnancy as a crime and no protection is offered to the fetus.

According to Pretorius, exposure to alcohol in the family leads to risk factors such as rebelliousness, having friends who drink, poverty, and other factors relate to adolescent alcohol consumption.²⁰ Another study conducted on school children in the Western Cape concluded that risky drinking was associated with school truancy, mental distress, and lack of parental and peer support among adolescent African school children.¹⁶

While suicide is not a leading cause of death in South Africa, it is a serious public health concern with the incidence of suicide varying across ethnic and socioeconomic groups and geographic regions.⁴ Alcohol abuse studies have documented the association between poverty, low education levels and poor mental health, including suicide attempts.^{7,9,10,16} Children of alcohol dependents are at greater risk for eating disorders, learning disorders, teen pregnancy, and suicide.¹⁶ Contextual factors identified by some studies included abject poverty as a result of unemployment and low education levels, a childhood

within dysfunctional family environments, early alcohol use and current alcohol dependence, previous and current interpersonal conflict and violence, a sense of hopelessness and the absence of coping mechanisms.^{20,21} The South African Depression and Anxiety group estimates that depression affects an estimated 5%–6% of the South African population.

South African Regulatory Framework Regarding Alcohol Consumption

In an attempt to reduce heavy drinking and consequently address social decay caused by alcohol abuse, the South African government has institutionalized a regulatory framework regarding alcohol consumption. The sale and consumption of liquor was initially a nationally legislated policy governed by the Liquor Act of 1928.²² As of 1996–2004, the provincial governments proved competence to process the development of local legislation governing liquor. From 2004 and beyond and as set forward by the Liquor Act of 2003, the National government regulates manufacturing and distribution of alcohol and the provincial governments regulate micro-manufacturing and retail sale.²³ To this end, provincial governments continue to administer the Liquor Act of 1989, but must pass their own provincial liquor legislation.²³ To date, the Western Cape and KwaZulu-Natal have already started this process.²⁴ The Western Cape Liquor Bill provides for the licensing for retail sale of liquor, micro-manufacture of liquor, monitoring the manufacture of traditional African beer within the province, establishes the Western Cape Liquor Board and its committees and liquor forums, provides for the appointment of designated liquor officers, and provides for the appointment of municipalities as agents of the Liquor Board and as competent licensing authorities.²⁴ The KwaZulu-Natal Economic Development Department was responsible for piloting the KwaZulu-Natal (KZN)

Liquor Act.²⁵ This Act was more controversial than the Western Cape Liquor Bill because the KwaZulu-Natal Liquor Bill promoted the fast-tracking of liquor license applications and put forward R9m for the KZN Alcohol Act Education. The Act allows liquor to be sold on Sundays with liquor stores being able to trade until 8:00 PM during the week.

The following socioeconomic consequences are attributable to the Western Cape and KZN Liquor Acts: 1) reduced illegal liquor sales in townships across the province; 2) only limited Sunday trading in respect of new licenses; 3) general reduction in trading hours for liquor-licensed establishments; 4) a social and education fund that will bring strong focus on alcohol-related social problems and the need for responsible trading.^{24,25}

POSITIVE AND BENEFICIAL ASPECTS OF ALCOHOL CONSUMPTION

Health

Moderate alcohol intake (5–10g alcohol/day) has been shown to decrease risk of myocardial infarction and coronary heart disease mortality.²⁶ Regular alcohol consumers should not, however exceed one drink a day for women and up to two drinks a day for men. Moderate drinking should not be encouraged in those who do not imbibe. Alcohol in moderation increases sub-fractions of HDL cholesterol providing a protective cardiovascular effect.²⁷ The typical traditional Mediterranean diet includes alcohol consumption with meals in moderate amounts, which is associated with reduced cardiovascular risk.²⁸ Rehm et al observed beneficial effects of light-to-moderate drinking among those with ischemic heart disease, ischemic stroke and diabetes mellitus.¹⁷

A recent study in the Limpopo province of South Africa concluded that “traditional beer consumption seemed

to prevent iron deficiency in those at risk of developing such a deficiency, but appeared to precipitate iron overload in those at risk of developing iron overload.”² This potential beneficial effect of alcohol consumption on serum ferritin (S-Fr) levels and iron status has also been observed in other African, elderly, Danish and Australian populations.²

Economic Benefits

It is argued that the majority of people who consume alcohol in South Africa do so without negative consequences. Furthermore, there are some beneficial economic aspects of alcohol consumption and production in South Africa that should be documented:

- The contribution of the liquor industry to the economy, for example South African Breweries employs 8232 people²⁹;
- The contribution of R120 million on community partnerships to aid responsible drinking initiatives¹⁷;
- The liquor industry has contributed to Black Economic Empowerment by financing a range of small and medium empowerment business initiatives¹⁷;
- The liquor industry invests an estimated R560 million on advertising, with the majority spent on TV advertising, followed by print and radio ads.²¹

CONCLUSION

Historical events, such as the United States alcohol prohibition of 1920–1933 and the unsuccessful British attempt to prohibit alcohol use from Africans after colonization, signifies that alcohol consumption cannot be proscribed. For this reason, an alcohol consumption guideline is needed to assist South Africans in benefiting from drinking alcohol, instead of abusing it and contributing to social decay. Al-

though this article has identified the social and health benefits of alcohol, if used moderately, the definition of moderation needs to be carefully described within the South African context.

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