

If you drink alcohol, drink sensibly: a food-based dietary guideline for the elderly in South Africa

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The use and misuse of alcohol has become a public health problem among the South African (SA) elderly population, among whom risky drinking is a common practice. Previous publications encouraging alcohol use have referred to two supposedly beneficial effects of alcohol, categorised as: (1) cardioprotective and haemostatic; and (2) promoting a positive balance in iron status. However, more recent evidence has weakened these assertions for all age groups as the disadvantages of alcohol use far outweigh these benefits. Some of these disadvantages can cause severe medical and physical harm to the elderly. Attempts to curb risky drinking among the SA elderly must be adopted through screening by clinicians during consultations, use of various screening and diagnostic tools available for addressing alcohol use and abuse, and exploiting the channels of alcohol exposure for appropriate interventions.

Elderly populations are vulnerable to alcohol misuse irrespective of their consumption patterns or levels of use because of their ageing condition and the interaction of alcohol with medication. Therefore, there is a need to sensitise the SA elderly population on the risk posed by alcohol use, misuse or abuse, hence the FBDG 'If you drink alcohol, drink sensibly'.

Keywords: elderly, food based dietary guidelines, alcohol intake, South Africa

Introduction

There is no doubt that food based dietary guidelines (FBDGs) in place of nutrient-based recommendations have been cited as a tool that can assist in the overall improvement of optimal nutrition and health of populations, through advocating the consumption of nutritionally adequate diets that reduce or prevent the incidence of non-communicable diseases (NCDs) such as diabetes, cardiovascular diseases and certain types of cancers.¹ Since the adoption of the South African FBDGs in 2002 by the National Department of Health (NDoH), reviews of and revisions to the guidelines have been done as more research evidence became available to re-evaluate and validate previous assertions. Despite the revision of the FBDGs in 2012, the controversy concerning the guideline 'If you drink alcohol, drink sensibly' has remained a challenge, especially as it seemingly contradicts the main principle of FBDG messages, namely, to address existing public health issues including alcohol consumption. This guideline has since inspired researchers to examine the appropriateness of the use of alcohol among the South African population, especially the elderly.^{2–6}

Arguments in favour of alcohol consumption have drawn scientific evidence from two supposedly beneficial effects categorised as: (1) cardioprotective—involving increased level of high-density lipoprotein cholesterol (HDL-c) and haemostasis; and (2) positive balance in iron status.⁴ Although ample evidence has overridden these claims, it is pertinent to note that with regard to the South African population it is critically important to answer questions relating to the effect of alcohol consumption on the elderly, the reasons behind its consumption and how it affects their health and well-being.^{2–6}

A common phenomenon in the elderly is risky drinking or alcohol use disorders (AUD), unlike the binge/episodic drinking habit that is common with South African adolescents.^{7,8} As the name implies, risky, or at-risk drinking often exposes the elderly to a higher risk of injury. However, only rare cases of alcohol-dependent use exist among the elderly population.⁸

Alcohol consumption and abuse in the elderly

In general, consumption of alcohol tends to decline in the elderly population as they typically limit their alcohol use as they age,^{9,10} for physiological reasons, medical challenges preventing desirability/acceptability, lower incomes and inability to attend social gatherings where there is an opportunity to consume alcohol.^{11,12} However, risky drinking, defined as 'drinking five or more standard measures on a single occasion' is on the rise among the elderly in SA,^{13–15} often exposing them to alcohol-related harms associated with senility. Cases of harm to health and well-being resulting from alcohol intake can complicate medical conditions (e.g. mental impairment), lead to frequent falls and interfere with medications.¹⁶ Besides the risk of physical harm and injury from accidents, several studies have associated alcohol consumption with a number of health-related conditions such as dementia (of which old age is its strongest risk factor), diabetes, mortality, heart disease and cancer.¹⁷ Moreover, even limited alcohol use by the elderly is enough to cause problems because of their reduced metabolic rate, heightened sensitivity and relatively compact volume of distribution.^{18,19}

According to the National Institute of Alcohol Abuse and Alcoholism (NIAAA), if adults aged 65 years and above consume alcohol, it should be restricted to one standard drink (i.e. 14 g

of pure alcohol or 340 ml of regular beer which is about 5% alcohol, 120–150 ml of wine which is equivalent to 12% alcohol, and 45 ml of distilled spirit/liquor which is roughly 40% alcohol) per day or seven standard drinks in a week and not exceeding three drinks on an occasional basis.²⁰ Also, high-income countries such as the United Kingdom and the United States of America recommend not more than 5% of total energy intake from alcohol—an equivalent of 20 g for men and 15 g for women.²¹ Meanwhile, the brief intervention guideline of the World Health Organization (WHO) in its definition of standard drinking advocated 10 g of pure ethanol for men and women, with a restriction of two standard drinks per day.²² Despite these recommendations, it has become common practice for alcoholics and risky drinkers to replace meals with alcoholic beverages.² This act is detrimental to at-risk drinkers (those who exceed the recommended level of alcohol consumption and are at risk of medical or social problems) because, aside from being deficient in essential micronutrients, alcohol has a high energy content (equivalent to 28 kJ/g) which is never completely metabolised into fats or carbohydrates needed by the body.²³ Alcohol is thus said to contain ‘empty calories’. Among substances that are abused or misused by the elderly, alcohol has been described as the most frequently abused substance.^{24–26} This may explain why most studies on substance abuse in the Western world are focused on AUD.²⁷ Research has shown that one-third of the elderly population who suffer from AUD had the onset at a later stage of their lives, between ages 40 and 50 years, with the majority (two-thirds) presenting with early onset of AUD. Notable characteristics among those who developed AUD at a later stage are: better educational qualifications, busy schedules or lifestyle, insatiable taste for alcohol or cravings for heavy drinking and the unique ability to respond to treatment and medications.²⁷

The factors for the misuse, or abuse, of alcohol in the elderly have been documented to include: retirement, loneliness or loss of family and friends, insomnia, better health status, lower or higher educational qualification and related income, smoking, ethnicity, family history of alcoholism, anxiety or depression, festivities, weekend lifestyle, religious reasons and ‘young age’, because ‘young age’ is characterised by youthful indulgence that may often involve alcohol. Some elderly people developed a predilection (acquired taste) for alcohol during the earlier stages of life, which later becomes part of their lives in old age.^{2,14,28–30} Most of these factors will be further examined under the various reasons for alcohol consumption in the South African elderly population.

Alcohol consumption in the South African elderly

The guidelines for alcohol consumption advocates that men can consume more drinks than women (i.e. 4:3 in grams), even though there is no established justification for this, except for popular perceptions related to masculinity and traditional expectations tied to differences in gender roles across the globe.²¹ Among the South African elderly, alcohol is consumed more frequently by men than women. In the 55–64-year-old group, 25.7% and 3.7% of the men and women respectively indicated risky drinking compared with 20.9% and 2.0% in the ≥ 65-year-old men and women respectively. In addition, 14.4% and 8.8% of the men showed signs of problem drinking in the 55–64-year-old and ≥ 65-year-old age group, respectively. This was much lower for women, being 2.1% and 1.1% respectively.¹³

Reasons for alcohol consumption in the South African elderly population

Religion

One of the ways through which alcohol consumption has become part of society on a global scale is through religious inclinations.^{28,29,31} Most religions are globally recognised or practised and their doctrines/beliefs are often universal. In this practice, which seems to be ubiquitous, religion and alcohol are inseparable, as seen in most religions (Christianity, Islam, Hinduism, traditional African religions and Judaism) practised in SA.^{29,32–34}

Traditional African religions (TARs)

TARs were the first religions to be practised in SA before the introduction of other religions. According to Mokgobi, TARs are acts of worship involving a series of communication between God and the living, where the ancestors mediate on behalf of the living.³⁵ Today, alcohol (in the form of traditional beer) fills a large vacuum in TARs where it is used for ritual blessings and cleansing purposes or to appease the gods among the elderly who are traditional worshippers.^{36,37} The consumption and patronage of traditional beers might have declined over the years as a result of the commercial alternatives made available by industrialisation. This decline is mostly among adolescents and young adults, unlike the elderly who have maintained their predilection for traditional African beers for either worship or merriment.³

Special occasions and weekend socialising

Serving beer or wine during special occasions, ceremonies or festivities is a global tradition in which SA has historically been ranked as being one of the countries that consume alcohol in large quantities.^{38,39} There is an age-old drinking tradition where South Africans (not excluding the elderly population), particularly the men, gather during weekends to socialise. This practice typically serves as a leisure activity that encourages social bonding across a range of different classes of people taking a break from working weekdays. The use of alcohol in gatherings like these stems from the perception that it enhances social interaction.^{40,41} Therefore, the level of drinking is relatively high during the weekends in SA as a result of this practice.^{41,42}

Depression

Depression is typically an impairment of the mental state that is characterised by perpetual moodiness, sudden apathy and difficulty in performing daily tasks for a period of up to two weeks. Cases of depression are common among the elderly in SA. The total symptom-based depression rate in older adults in SA was 4% over a 12-month period.⁴³ Sufferers of depression may consume alcohol as a means of escape and, conversely, alcohol abuse by itself can cause depression.^{44,45} Moreover, a recent study in SA has shown that people who are depressed have a higher likelihood of consuming alcohol compared with those who are not.⁴⁶ However, it is pertinent to note that alcohol has a deleterious effect on depression and confounds symptoms of depression, thereby complicating or compromising available treatments for depression.⁴⁷ The WHO recommends psychotherapy or antidepressant medication or a combination of these two approaches to treat depression.⁴⁸ Increased alcohol use during the 2020/2021 COVID-19 pandemic has been reported in various studies. People who drink to cope, with co-morbid anxiety and depression, reported

increased substance use following traumatic stress such as caused by COVID-19.⁴⁹

Loneliness

Loneliness is another factor that naturally instigates alcohol consumption among the elderly population in SA. The overall prevalence of self-reported loneliness is 9.9% in the SA elderly.^{50,51} This often happens when they lose their loved ones, or retire and become pensioners living in isolation.^{52,53} Loneliness has been found to be a risk factor for excessive alcohol intake.⁵⁰ However, a more recent study examining the association of alcohol use and loneliness in participants aged 50 years and above from the 2008 wave of Health and Retirement Study found that being lonely was associated with lower odds of a weekly alcohol intake of 4–7 days per week, and not associated with binge or at-risk drinking.⁵⁴ Suggested approaches to combat the challenges of loneliness leading to alcoholism among the elderly include: (1) being constantly in touch or actively engaged with friends and family; (2) adopting healthy behaviour; (3) being conscious of the physiological and morphological changes associated with ageing, and the impact of alcohol on elderly health as a result of the changes occurring at this stage of their lives, and (4) adhering strictly to alcohol use recommendations.^{54,55} Moreover, the healthcare system has a crucial role to play in reducing/preventing loneliness through counselling and ensuring that elderly patients are not socially influenced to adopt drinking habits that are detrimental to their well-being.^{54–56}

Alcohol abuse, risky behaviour and domestic violence

Some of the multiple effects of high alcohol consumption in SA can be linked to a higher risk of communicable diseases such as sexually transmitted diseases (STD), HIV and AIDS resulting from sexual recklessness or unprotected sex, as well as higher risk of mortality from HIV and AIDS due to no or little compliance with the use of highly active antiretroviral therapy (HAART), which is commonly observed in cases of AUD patients.^{57,58} Harmful use of alcohol is a risk factor for involvement in most forms of interpersonal violence. Alcohol use is also the third largest contributor to intimate partner and domestic violence in SA and contributes to half of all unnatural deaths and 75% of homicides; 60% of automobile accidents; and 24% of vehicle deaths and injuries.⁴⁶

Impact of alcohol consumption on health and nutritional status of the elderly

Several studies have shown that alcohol consumption among the elderly impacts their nutritional status in many ways—either beneficially or otherwise—depending on the level of consumption indicated as low, moderate or high.^{12,27,57,59,60} However, evidence in favour of the beneficial effects of alcohol consumption in old age⁶¹ have recently become unclear. Studies investigating this often-neglected sub-population^{12,14,57} have shown results contradicting previous standpoints. The effects of alcohol abuse on mortality are greater than those of tuberculosis (2.3%), human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) (1.8%), diabetes (2.8%), hypertension (1.6%), digestive diseases (4.5%), road injuries (2.5%) and violence (0.8%). Also, the huge burden of disease and injury recorded globally in 2016 as a result of alcohol use led to 132.6 million disability adjusted life years (DALYs)—an equivalence of 5.1% of all DALYs in that year alone when considering both the benefits and detrimental effects across the globe.⁵⁷ Furthermore, the WHO

African Region had the highest age-standardised alcohol-attributable burden of disease and injury, with 70.6 cases of deaths and 3 044 DALYs in every 100 000 people.⁵⁷

Another notable concern regarding the use of alcohol among the elderly in SA that relates directly to health is the negative effect of alcohol consumed together with both medical prescriptions and non-prescriptions. Although these interactions of alcohol and medications are pronounced among heavy drinkers (3 standard drinks and above per occasion), light and moderate drinkers (1–2 standard drinks per occasion) are not spared from experiencing commensurate alcohol–medication interactions.⁶² Details of some of these interactions are explained below.

Alcohol–medication interaction leading to increased drug metabolism rate

This situation is common among heavy drinkers and those suffering from alcohol dependence and occurs when the cytochrome P450 system is accelerating the metabolism of alcohol and breakdown of drugs such as warfarin, highly active anti-retroviral therapy (HAART) and phenytoin. The concentration of these drugs in the bloodstream is lowered as a result of the increased metabolic rate, thereby reducing the therapeutic effects of these drugs until excess doses are administered. Moreover, the rate of metabolism may remain accelerated for weeks after the alcohol intake is reduced, often resulting in therapeutic failure. An example of such therapeutic failure of the drug instigated by alcohol–medication interaction is the risk of seizures in elderly patients using phenytoin.^{62–64}

Alcohol–medication interaction leading to decreased drug metabolism rate

Decreased drug metabolism can be instigated by short-term heavy alcohol use, where alcohol consumption induces cytochrome P450 to inhibit drug metabolism in the liver. Since alcohol will naturally compete with drugs like narcotics or benzodiazepines, the rate of drug metabolism is slowed, and the blood concentration of these drugs increases. In this situation, the therapeutic effect becomes achievable with lower doses and the risk of overdose if the dosage is not lowered. This form of alcohol–medication interaction can cause sedation in older people.^{62,64}

Alcohol–medication interaction leading to increased blood alcohol levels

Because the consumption of a given dose of alcohol will naturally increase the blood alcohol level and brain sensitivity at a faster rate in the elderly than in young people, the implication of this is that alcohol consumption accompanied by drug use will pose a greater risk to cognition. For instance, when certain histamine H2 blockers (e.g. famotidine, ranitidine, cimetidine and nizatidine) interact with alcohol in the minutest of forms, they increase the blood alcohol level significantly, affecting cognitive and fine motor functions.^{61,64,65}

Alcohol–medication interaction leading to hypertensive crisis

The consumption of red wine and beer and other foods and beverages containing tyramine leads to a high risk of hypertensive crisis, especially when these foods are consumed with non-selective monoamine oxidase inhibitors such as phenelzine and tranylcypromine, which are used to treat depression.^{62,66} Similarly, alcohol can exacerbate hypertension and can double the

risk of hypertension in men and women with daily consumption of 100 g of alcohol.^{67,68}

Alcohol–medication interaction with diabetes mellitus

Former studies that claimed light and moderate use of alcohol in persons suffering from diabetes reduced the risk of coronary heart diseases (CHDs) and related mortalities also revealed that the risks of alcohol misuse include aggravation of diabetic neuropathy and retinopathy.^{62,69,70} Even moderate drinkers who are diabetic are at risk of hypoglycaemia, because alcohol suppresses gluconeogenesis in the liver when no food is consumed before drinking.⁶²

For example, alcohol can present both hypoglycaemic and hyperglycaemic effects in persons suffering from type 2 diabetes mellitus,⁷¹ as lower risk is associated with one or two drinks per day while four to five drinks per day has a deleterious effect.⁷² The prevalence of self-reported diabetes is at an all-time high (9.2%) among the South African elderly population,⁷³ and a higher consumption of alcohol is associated with an increased risk of diabetes.⁷² It is certain that the nutritional status of the elderly in SA might be endangered if the alcohol consumption rate is not monitored because diabetes affects metabolism to a greater extent.⁷⁴

Alcohol–medication interaction with gastrointestinal and other conditions

Consumption of alcohol can lead to gastric irritation such as upper gastrointestinal bleeding and prevent healing of an ulcer in people with co-morbidities.^{61,75–77} In addition, alcohol consumption is linked with diarrhoea and malabsorption, and also adds to the risk of colon, oropharyngeal and oesophageal cancer.⁵⁸ The elderly who suffer from gastroesophageal reflux disease (GERD) need to be cautioned about alcohol abuse/misuse.⁶²

On the other hand, alcohol consumption leading to non-infectious diseases manifests in disease conditions like CVD, cancers, chronic lung diseases and diabetes mellitus, which are the focal points of the WHO Global Action Plan for the prevention and control of non-infectious/non-communicable diseases (NCDs). Nutrition-related NCDs are infamous for the alarming rates of morbidity and mortality in SA.^{71,78}

Other effects of alcohol consumption manifest as neurological/substance use disorders, and cognitive and digestive diseases, which all contribute to the burden of NCDs attributable to alcohol use.⁷⁹ Globally 1.7 million deaths arising from NCDs (about 4.3% of global records of NCD deaths) were in some way related to alcohol consumption in 2016.⁷⁸

Conclusion

The use and abuse of alcohol has become ubiquitous and is a health issue among the SA elderly population. Although not much attention has been given to remedy the proliferation of adverse effects of excessive alcohol use, asocial comorbidities have always existed. The elderly population are particularly vulnerable to the adverse effects of alcohol use irrespective of their consumption patterns (binge/episodic drinking, risky use, AUD, dependent) or level of use (low, moderate or high) because of the effects of ageing and the interaction of alcohol with medication. Also, the channels through which alcohol intake is encouraged or made available even to non-drinkers should be target points for intervention seeking to address alcohol abuse and highlighting the dangers of excessive drinking

among the elderly. In addition, clinicians should ensure that consultations incorporate a conversation about the patient's history of alcohol use (if any) to enable them to address any potential problems and provide information on safe sources and quantities of alcohol.

Therefore, it is important to make the SA elderly aware of the risks and safe intake levels of alcohol consumption, justifying the EFBDG 'If you drink alcohol, drink responsibly' as part of nutrition education programmes implemented among the elderly and messages disseminated by healthcare workers at clinics and hospitals.

Author contributions

All authors assiduously contributed to the preparation of this manuscript and gave their respective approval.

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