GAPA Brief

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Addressing harmful use of alcohol is essential to realising the goals of the UN Resolution on non-communicable diseases (NCDs)

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Why a GAPA Brief on NCDs?

In May 2010 the UN General Assembly (GA) passed Resolution 64/265 which called for the convening of a high-level meeting of the GA in September 2011 in New York on the prevention and control of non-communicable diseases.[1] This resolution and related documents have stressed the need to recognise the primary role and responsibility of governments to respond to the challenges of NCDs, but also the responsibility of the international community in assisting member states, particularly in developing countries, to generate effective responses.[2] Among the various NCDs, cardiovascular diseases, cancers, chronic respiratory diseases and diabetes have been singled out for attention.[2]

This resolution reflects the growing recognition of NCDs as a major threat to development in developing countries. Furthermore, the resolution is seen as having reframed the global discussion about NCDs into emphasising broader social and environmental drivers of NCDs rather than unhealthy choices made by individuals.[3] It comes with the hope of garnering multi-sectoral commitment and facilitating action on an unprecedented scale to address NCDs.

What is the Brief's purpose?

1. To put forward the case that addressing harmful use of alcohol is essential in moving forward the agenda to meaningfully impact on NCDs by highlighting the strong linkages between alcohol and several of the main NCDs of interest and also to indicate the availability of interventions that have been documented to have an impact on reducing the burden of alcohol on public health.
2. To highlight the relevance of the call made by the World Health Assembly in 2010 for countries to implement effective responses to address harmful use of alcohol and to urge that greater support be given to the WHO to enable it to carry out its mandate in terms of the *Global Strategy to Reduce the Harmful Use of Alcohol*[4] and allied WHO resolutions.
3. To specifically feed into a report being prepared by the Secretary-General of the UN (in collaboration with Member States and WHO) by May 2011 that will serve as input to the preparatory phase for the September 2011 high-level meeting and also feed into an informal interactive hearing with NGOs, civil society organisations, the private sector and academia that is to be held no later than June 2011 and which also aims to provide input into the September meeting.

What is the link between alcohol use and NCDs?

Alcohol has been identified as a leading risk factor for death and disability globally, accounting for 3.8% of death and 4.6% of disability adjusted life years (DALYs) lost in 2004.[5,6] Alcohol was found to be the 8th highest risk factor for death in 2004 (5th in middle-income countries and 9th in high-income countries). In terms of DALYs lost in 2004, alcohol ranked 3rd highest (1st in middle-income countries, 8th highest in low-income countries and 2nd highest in high-income countries). The role of alcohol (and particularly heavy alcohol use and having an alcohol use disorder) in NCDs has been given increasing recognition. For example, at the recent NGO conference in Melbourne on health and the Millenium Development Goals (MDGs) during a session on NCDs, along with tobacco, diet and lack of exercise, *alcohol* was recognised as one of four major common risk factors.[7] In terms of NCDs, alcohol has been particularly linked to cancer, cardiovascular diseases (CVDs) and liver disease. Alcohol has also been clearly linked to mental disorders and in some systems mental health is seen part of NCDs. However, for the purpose of this Brief we shall not comment on this linkage.[5]

<u>Cancer</u>

- Nine leading environmental and behavioural risks (higher body mass index, low fruit and vegetable intake, physical inactivity, tobacco

use, *alcohol use*, and unsafe sex, urban and indoor air pollution, and unsafe health-care injections) have been estimated to be jointly responsible for 35% of cancer deaths.[6]

- In 2007 the International Agency for Research on Cancer asserted that there was sufficient evidence for a causal link between alcohol and cancer of the oral cavity, pharynx, larynx, oesophagus, liver, colon, rectum, and female breast.[8] All these cancers showed evidence of a dose-response relationship, that is, the risk of cancer increased steadily with greater volumes of drinking.[9]
- The strength of this relationship varies for different cancers. For example, with regard to female breast cancer, each additional 10 g of pure alcohol per day (roughly one standard drink[*]) is associated with an increase of 7% in the relative risk (RR) of breast cancer whereas regular consumption of approximately 50 g of pure alcohol increases the relative risk of colorectal cancer by between 10% and 20%, indicating that the association is stronger for female breast cancer. [9] The relationship of average consumption to larynx, pharynx and oesophagus cancer on the other hand would be markedly higher than the relationship to both breast and colorectal cancer (about about a 100% to 200% increase for an average consumption of 50 g pure alcohol per day).[8]
- Among the causal mechanisms that have been indicated for some cancers is the toxic effect of acetaldehyde which is a metabolite of alcohol.[9]
- Of all alcohol-attributable deaths in 2004, about 20% come from cancer, 19% for males and 25% for females. When considering both the burden from death and disability, cancer is estimated to comprise approximately 9% of all alcohol-attributable DALYs lost, 8% for males and 14% for females.[5]

<u>Cardiovascular diseases (CVDs)</u>

- Eight risk factors (*alcohol use*, tobacco use, high blood pressure, high body mass index, high cholesterol, high blood glucose, low fruit and vegetable intake, and physical inactivity) jointly account for 61% of loss of healthy life years from CVDs and 61% of cardiovascular deaths. These same risk factors together account for over three quarters of deaths from ischaemic and hypertensive heart disease.[6]
- Chronic, heavy alcohol use has been associated with adverse cardiac outcomes including ischaemic heart disease (IHD), dilated cardiomyopathy, cardiac dysrythmias, and haemorrhagic strokes.[10] The detrimental effects of heavy drinking occasions on IHD are consistent with the physiological mechanisms of increased clotting and a reduced threshold for ventricular fibrillation which occur following heavy drinking.[9]
- Alcohol has been identified as the cause of 30% to 60% of cases of patients with new-onset atrial fibrillation, with several causal mechanisms being put forward to explain this association, including increased intra-atrial conduction time, impairment of vagal tone, hyperadrenergic activity during drinking and withdrawal, and direct alcohol cardiotoxicity.[8] Studies vary considerably in terms of the amount of alcohol needing to be consumed and the onset of cardiac dysrhyhmias, ranging from approximately 2 to 5 drinks per day.[9]
- Of all alcohol-attributable deaths in 2004, about 22% come from CVDs, 23% for males and 18% for females. CVDs are estimated to comprise approximately 9% of all alcohol-attributable DALYs lost, 10% for males and 8% for females.[5] These estimates do not take into account any beneficial effects of alcohol on CVDs. However, it has been estimated that the detrimental effects of alcohol in terms of CVDs outweigh the beneficial effects by a factor of 2.4 (for deaths) and 3.5 (for DALYs), and these benefits typically only occur with low to moderate alcohol consumption (less than 20 g per day) and then only for selected cardiovascular outcomes (e.g. ischaemic heart disease and strokes). [5]

<u>Alcoholic liver disease (ALD)</u>

- Alcohol is associated with various kinds of liver disease, with fatty liver, alcoholic hepatitis and cirrhosis being the most common. The likelihood of developing ALD is a function of both the duration and the amount of heavy drinking.[11]
- For men drinking 30 g of absolute alcohol per day is associated with a RR of 2.8 of dying from liver cirrhosis (7.7 for females). Regarding morbidity, the RRs for males and females for drinking the same amount of alcohol per day were 0.7 and 2.4. For men drinking 54 g of

[*] In the UK 1 standard drink is 7.9 g of ethanol, in Australia it is 10 g, in South Africa 12 g and in the USA 14g. 12 g is probably the most common mass for 1 standard drink

alcohol per day was associated with a relative risk of 2.3 for acquiring liver cirrhosis. For both morbidity and mortality, the RR increases with the volume consumed per day.[12]

- Various mechanisms have been put forward for how alcohol is associated with liver disease, such as the view that the breakdown of alcohol in the liver leads to the generation of free radicals and acetaldehyde which individually damage liver cells.[13,14]
- Of all alcohol-attributable deaths in 2004 about 15% come from liver cirrhosis, 15% for males and 17% for females. ALDs are estimated to comprise approximately 10% of all alcohol-attributable DALYs lost, 9% for males and 13% for females. Alcohol appears to have a greater impact on cirrhosis mortality as compared to cirrhosis morbidity due to the fact that heavy drinking has detrimental effects on the immune system.[5]

Other disease

For pancreatitis a threshold of about 48 g pure alcohol per day has been found, again with increased volume of alcohol consumed per day being associated with increased risk.[15] With regards to diabetes the situation is more complicated. A recent meta-analysis confirmed that there is a U-shaped relationship between the average amount of alcohol consumed per day and the risk of type 2 diabetes.[16] There appears to be a protective effect of moderate consumption of alcohol, particularly among women. Further research appears to be needed to make stronger claims about the negative effects of higher levels of consumption of alcohol and the incidence of diabetes and to allow for greater generalisability of the findings to broader populations globally.

What response is required?

- As part of national efforts to address NCDs countries need to give priority to implementing the *Global Strategy to Reduce the Harmful Use of Alcohol* approved by the WHA in Geneva in May 2010.[4] Particular attention should be given to implementing evidenced-based strategies that have the potential to reduce the occurrence of heavy drinking episodes and the prevalence of alcohol use disorders that impact on NCDs. Such strategies are likely to include regulating the availability, price and marketing of alcohol and improving the capacity of health services to support initiatives to screen for risk and conduct brief interventions for hazardous and harmful drinking at primary health care and other settings.[17,18,19]
- While there is less evidence to support the efficacy of health education on its own, it nonetheless does seem appropriate that alcohol consumers should be made aware of the risk associated with different levels of drinking and NCDs. Consumers should, for example, be informed that stopping or reducing alcohol consumption will reduce cancer risks, albeit slowly over time.[7]
- Countries must be urged to collect better information on levels of alcohol exposure, e.g. recorded adult (15 years+) per capita consumption in litres of pure alcohol and heavy episodic drinking among adults (15+ years) and alcohol-related harm associated with NCDs (e.g. age-standardized death rates for liver cirrhosis per 100,000 population).[20]
- At a global level support should be given to the WHO to enable it to carry out its mandate in terms of the *Global Strategy to Reduce Harmful Use of Alcohol* and allied WHO resolutions, in particular with regard to providing technical assistance to low- and middle-income countries to develop and implement policies to reduce the burden of alcohol-related problems; seeing that public health interests regarding alcohol issues are taken into account in global trade agreements, the settlement of trade disputes, and decisions by international development agencies; and ensuring that transnational marketing or major international event marketing does not act against national policies with regard to alcohol advertising and promotion. This needs to come in the form of political support for action and concrete resources to enable WHO to carry out its mandate.
- Opposition from vested interest groups such as the alcohol-beverage industry and associated sectors (e.g. the advertising industry) that benefit from the status quo must be anticipated and countered.[3,7] Addressing the social determinants of NCDs will also require understanding and combating the role of globalisation in promoting such diseases. [21]

Conclusion

Addressing NCDs in countries at all levels of development is now seen as important in ensuring the achievement of MDGs.[21] The way forward is to take concerted and inclusive actions to address the

common causes of the most prevalent NCDs. Alcohol has now been recognised as one of four major common risk factors for NCDs. GAPA urges that this reality be factored into documents being prepared for the UN high-level meeting in September 2011.

Not only must the causal association between alcohol use and NCDs be acknowledged, but responses that address the social and environmental drivers of problem drinking must be included in intervention packages that will be highlighted in an Outcomes Statement to be produced at the end of the UN high level meeting. This Statement should be a declaration with clear, binding commitments, measurable targets and long-term agreements and programmes. It should form a clear programme of action for governments, the UN system, and civil society.

The Global Alcohol Policy Alliance (GAPA) is a developing network of non-governmental organizations and people working in public health agencies that share information on alcohol issues and advocate evidence-based alcohol policies.
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