Alcohol: a key determinant for ill health and an obstacle to development

Paper from the Global Alcohol Policy Alliance to the WHO call for papers: Health in the post-2015 development agenda

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The Millennium Development Goals (MDG) state that health is critical to the economic, political and social development of all countries. The health-related MDGs focus on reducing child mortality (no. 4), improving maternal health (no. 5), and combatting HIV/AIDS, malaria and other diseases (no. 6), but do not capture the increasing burden of non-communicable diseases (NCDs). Substantial progress has been made in addressing MDGs 4-6; however, there are still important challenges remaining with regard to addressing these MDGs in some regions of the world. The reformulation of globally agreed development goals for the post 2015 period nevertheless is an opportunity to address the lack of a NCD focus. This reformulation needs to be informed by the recognition of emerging challenges as expressed by the UN High Level Meeting on NCDs in 2011 as well as by new knowledge from the recently released Global Burden of Disease Study 2010.

Impact of NCDs on health and development

The 2011 United Nations High Level Meeting on NCDs demonstrated the global consensus around the need to develop and implement prevention strategies and control the disease burden related to four risk factors: tobacco, alcohol, unhealthy foods, and lack of physical exercise. The four disease categories captured in the NCD basket are cancer, cardiovascular disease, chronic lung disease, and diabetes; these account for two-thirds of all deaths and half of all disability worldwide (UN, 2011). Mental health conditions make up a fifth NCD category that, although not included in the UN process, significantly contributes to the global chronic disease burden (Murray et al., 2012). Although these diseases are portrayed as problems of more wealthy countries, a significant portion of the disease burden from NCDs is in low and middle income countries. These diseases and conditions are also closely related to inequity and inequality in rich and poor countries alike. In this context it is important to reframe the global discussion about NCDs to emphasize broader social and environmental drivers of NCDs, rather than just considering unhealthy choices made by individuals.

On December 14, 2012 *The Lancet* together with the Institute for Health Metrics and Evaluation (IHME) hosted an event at the Royal Society to present the findings of the Global Burden of Disease, Injuries, and Risk Factors (GBD) Study 2010. The launch of the 2010 GBD Study featured discussion of comparable estimates of mortality, causes of death, years lived with disability (YLDs), and disability-adjusted life years (DALYs) for 291 conditions and 67 risk factors, for 21 regions and three time periods – 1990, 2005, and 2010. The results reveal substantial shifts in the burden of disease from children to younger adults, from premature mortality to morbidity and disability, and from communicable, maternal, neonatal and nutritional conditions to non-communicable diseases.

The Global Burden of Disease Study 2010 pointed out that although we are unlikely to achieve most of the health related MDG targets by 2015, the burden of these disorders has declined by nearly 32,0% from 1990 to 2010 and will probably decline further by 2015 according to current trends. More than two-thirds of global Disability Adjusted Life Years (DALYs) lost now arise from disorders

not targeted in the MDGs. Addressing the leading, and often largely preventable, causes of the non-MDG health spectrum, especially NCDs and injuries, should be given greater priority (Murray et al., 2012).

Alcohol is a leading risk factor for NCDs and other health problems

Alcohol use is related to more than 60 diseases in the human body. It is a significant contributor to injury as well as to both communicable and non-communicable chronic diseases such as tuberculosis, (Rehm J, Samokhvalov, et al., 2009), heart disease, cancer, (Parry, et al., 2011), and HIV (Schneider et al., 2012).

The GBD 2010 analysis of 67 risk factors and risk factor clusters for death and disability reported in the special issue of *The Lancet* (Lim et al., 2012) found that alcohol was the third leading risk factor for death and disability globally, accounting for 5.5% of disability adjusted life years (DALYs) lost, i.e. 136 million years of life lost through dying early from an alcohol-related cause or living with an alcohol-related disability. This is up from the 4.6% reported in 2004 and 4.0% in 2000 (Rehm et al., 2003, 2009), though it should be noted that these percentages are not entirely comparable due to the variations in the methodologies used. The increase is mainly accounted for by including the burden associated with alcohol use on infectious diseases such as tuberculosis and pneumonia. In terms of comparable results, the impact of alcohol use proportionally went up about 30% from 1990 to 2010, and in mortality alone in 2010 alcohol is estimated to be causally linked to 4.9 million deaths globally, up from 3.7 million in 1990.

Various outcomes were linked to alcohol use and heavy drinking, including among others tuberculosis, lower respiratory infections, various cancers, ischaemic heart disease and ischaemic and non-ischaemic stroke, epilepsy, cirrhosis of the liver, pancreatitis, transport injuries, falls, drowning, poisonings, intentional self-harm, interpersonal violence and alcohol use disorders (Lim et al., 2012).

After reworking the data to ensure comparability, in 1990 alcohol was ranked as the 6th leading cause of death and disability. Based on 2010 data alcohol is ranked 3rd in terms of risk after high blood pressure and smoking. Lim et al. (2012) furthermore indicate that alcohol is the leading risk factor for death and disability in large parts of the world including Southern sub-Saharan Africa, Eastern Europe and most of Latin America. In Southern sub-Saharan Africa alcohol-related road traffic, unintentional and intentional injuries together with alcohol-related tuberculosis played a key role in alcohol contributing so greatly to death and disability. If the impact of alcohol on HIV/AIDS had been included, alcohol-attributable burden in this region would have been even higher.

The *Lancet* article (Lim et al., 2012) also highlights the increasing global burden of NCDs. According to this article, 33% of ischaemic heart disease DALYs lost globally were individually attributable to alcohol. Globally, for persons aged 15-49 years the leading risk factor for death and disability was alcohol use followed by tobacco smoking, high blood pressure, high body mass index, a diet low in fruit and vegetables, drug use, and occupational risk factors for injuries. These findings support the call by the World Health Organization for countries to give greater priority to addressing harmful use of alcohol via evidenced-based population level intervention strategies (World Health Organization, 2010).

Alcohol, health and development

For many, consuming alcohol may seem an easy way to cope with everyday problems. Images often portrayed in alcohol promotions support the view that alcohol offers a taste of luxury, recreation, and entrée into a world beyond everyday worries. However, the health and other problems created by alcohol use are rather additional burdens for poor people, generating substantial problems for society and becoming a stumbling block for development. Alcohol consumption will predictably rise with personal incomes (Room et al., 2002), so an effective long-term view of development must incorporate effective measures to prevent alcohol-related harm.

While throughout the world men do the bulk of the drinking, women bear the consequences disproportionately in the form of interpersonal violence, its impact on family budgets, and other secondary effects of others' drinking (Room et al., 2002). Thus addressing harmful use of alcohol is critical to resolving issues of gender equity as well as maternal and child health.

The disproportionate level of harm to young people caused by alcohol use has serious implications for human capital development. Multiple studies have found that youthful alcohol use reduces educational aspirations and achievement (Cook and Moore 1993, Barry et al. 2011, Crosnoe et al. 2012). Adolescence is a time when the developing brain is particularly vulnerable to long-term negative effects of alcohol use (U.S. Surgeon General 2007). Long-term effects may include reduced memory functions, poorer performance on tests requiring attention skills, and deterioration in functioning in visuospatial tasks (Brown and Tapert 2004).

In Latin America, development and rising incomes have contributed to alcohol becoming the leading cause of male death and disability in the region, threatening further progress. In Africa, alcohol use both complicates recovery from the HIV epidemic (because alcohol is implicated both in transmission of and adherence to treatment for HIV (Schneider et al. 2012).

A systematic review of alcohol use and sexual risks for HIV/AIDS in Sub-Saharan Africa identified four factors that are most closely related: drinking venues and alcohol serving establishments, sexual coercion and poverty (Kalichman et al. 2007). A review and meta-analysis of 20 studies from Africa found that drinkers have a 70% greater chance of being HIV positive when compared to non-drinkers in the bivariate case, and a 57% increased risk of HIV infection when potential confounders were controlled in multivariate analysis (Fisher, 2007).

Alcohol use also has impact on those undergoing treatment for TB or receiving highly active antiretroviral therapy (HAART) to increase life expectancy among people living with HIV/AIDS. UNAIDS reported in 2010 that the total number of people receiving treatment in low- and middle-income countries at the end of 2009 was 5.2 million, up by 30% compared to 2008. These 5.2 million make up 36% of the 15 million people in need of treatment (UNAIDS, 2010). The effect of the treatment depends among several factors on the ability to adhere to the treatment regime. A study from West Africa reported that alcohol use was one of two factors (adherence counselling being the other) associated significantly with adherence to HAART. The positive association was significant for present drinkers and even for non-hazardous drinkers (Jaquet et al., 2010). TB patients who drink heavily or have an alcohol use disorder show higher relapse rates, a higher probability of an unfavorable clinical course, and a higher probability of experiencing the most destructive forms of TB. This is due both to the interruption of treatment often following from heavy alcohol use and to

the altered pharmacokinetics of medicines used in treatment of TB (Rehm, Samokhvalov et al., 2009). The influence of alcohol on treatment compliance is especially worrying with the development of new drug-resistant strains of TB.

The direct costs to the individual related to alcohol consumption are often considerable. A study in Sri Lanka found that over 10 percent of male respondents reported spending as much as or more than their regular income on alcohol (Baklien and Samarasinghe, 2003). The study disclosed that calculations of the expenditures on alcohol grossly underestimate the real costs. For some communities and families, alcohol exhorts a heavy toll on their disposable income.

Many low income countries have an alcohol dependency syndrome, with public revenue generation heavily skewed towards taxation on products like alcohol. Countries may seek to maximize income from alcohol, but alcohol's social and economic costs are often overlooked. These include the direct costs of treating injuries and diseases as well as treatment and rehabilitation costs, property losses, law enforcement costs, and losses in productivity owing to absenteeism or loss of productive years of life. But the invisibility of these costs can combine with dependence on alcohol revenues to make Ministries of Finance look with disfavor on efforts to reduce alcohol consumption at a population level (Bakke, 2008).

What response is required?

As part of national efforts to address health and development problems arising from alcohol use, countries need to give priority to implementing the *Global Strategy to Reduce the Harmful Use of Alcohol* approved by the World Health Assembly in Geneva in May 2010 (World Health Organization, 2010). 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 (Anderson, 2009; Babor et al., 2003; Room et al. 2002).

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 in particular the impact of alcohol use on NCDs. Consumers should, for example, be informed that stopping or reducing alcohol consumption will reduce cancer risks, albeit slowly over time.

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 (Bakke, 2008). Addressing the social determinants of NCDs will also require understanding and combating the role of globalization in promoting such diseases (Geneau et al., 2010).

Monitoring and targets

There is strong epidemiological evidence to suggest a reduction in per capita alcohol consumption will reduce levels of health and social harm caused by alcohol in a population. In a series of reports in *The Lancet* in 2009, Anderson et al. state: *"Ecologically there is a very close link between a country's total alcohol per head consumption and its prevalence of alcohol-related harm and alcohol dependence, implying that when alcohol consumption increases, so does alcohol-related harm and the proportion of people with alcohol dependence and vice versa."* (Anderson et al., 2009)

When total alcohol consumption increases in a society, there tends to be an increase in the prevalence of heavy drinkers, defined in terms of a high annual alcohol intake. Because heavy drinkers account for a significant proportion of total alcohol consumption, it would be difficult for the total consumption level to increase without an increase in their drinking (Babor et al., 2010).

WHO has over the years laid the foundations for good measures tracking per capita alcohol consumption, resulting in three Global Status Reports on Alcohol (1999, 2004 and 2010). The latter report, the *Global Status Report on Alcohol and Health*, is a comprehensive knowledge base on the status of alcohol consumption. WHO has been actively involved in documenting and reporting in this field since 1974 and from 1996 data was collected in the Global Alcohol Database, which was further developed and transformed into the Global Information System on Alcohol and Health in 2008 (World Health Organization, 2011). Thus, tracking progress towards reducing harmful use of alcohol is feasible and already established through WHO's monitoring of per capita consumption of alcohol.

Conclusion

Harmful use of alcohol is a major risk to health and development, both through alcohol's impact on NCDs and through its role in injuries, mental health and other health problems. A considerable alcohol-induced health burden already exists in low- and middle income regions of the world. With development, this burden is likely and has been shown to increase. Furthermore, alcohol has considerable negative socio-economic impact, through violence, gender-based violence, the drain caused by heavy drinking on meagre family and other resources, and the threat to human capital development posed by youthful initiation of alcohol use. Evidence based strategies to reduce these problems exist and must be employed. The effects of these efforts are readily measurable since good foundations for measurement are already available and in use by WHO.

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