Globally, alcohol has nearly the same disease burden as tobacco, and is associated with acute and chronic health conditions and social problems. Alcohol use and drinking patterns differ significantly between men and women, age groups, ethnic and religious groups, cultures and levels of socioeconomic development. The burden of disease attributable to alcohol use is higher in males compared to females.

Among the 76.4 million people worldwide with alcohol use disorders, 63.7 million are men and 12.7 million women (M:F=5:1). Nonetheless, alcohol use among women is increasing steadily, given the changing gender roles in many societies. Treatment programmes tend to be focused on men and sometimes overlook the needs of women with alcohol use disorders. There is, therefore, an urgent need for gender-specific strategies for effective public health policies to reduce overall consumption of alcohol and the harms related to it in developed and developing countries.

What do we know?

**Extent of problems related to alcohol use**

Beverages containing alcohol are available worldwide and are consumed in various forms. These beverages may be commercially brewed and distributed or brewed at home for personal use and on occasion, for informal distribution or sale. The active ingredient in all alcoholic beverages is ethanol, which is considered a psychoactive substance because it influences a person’s level of consciousness, cognition, perception, judgment and behaviour.

In general, alcohol consumption is commercially promoted as a lifestyle choice associated with recreation, partying and relaxation. However, alcohol consumption has adverse health and social consequences through intoxication (drunkenness), alcohol dependence or chronic heavy consumption. In addition to chronic diseases that may affect consumers after many years of heavy use, alcohol contributes to traumatic outcomes including injury, disability and death. Alcohol can therefore have consequences that go beyond the individual to the individual’s family, community and the larger social environment.

In 2002, the World Health Organization estimated that there were approximately two billion people worldwide who consume alcoholic beverages and 76.4 million who had disorders attributable to alcohol use. Globally, the proportion of all disability-adjusted life years lost (DALYs) attributable to alcohol is 4% while that of tobacco is 4.1%. The alcohol-related burden of disease is most significant in the developed world, where 9.2% of all disease burden is attributable to alcohol. In low-mortality developing countries it is 6.2% and in high mortality developing countries it is 1.6%. However, it is predicted that the burden in these countries will increase with economic development. In all the three groups of countries, the burden of disease is higher in males compared to females (see Figure 1).

The use of alcohol globally is increasing and expanding in new social contexts, countries and societal groups. However, the reduction of overall consumption and the burden of disease and other social harms caused by alcohol is a public health goal.

**How biological factors affect alcohol use**

The effects of alcohol on the human body, and the resulting disorders and consequences vary from person to person and from men to women depending on a range of factors. These include: how much and how quickly it is consumed, how long the person has been drinking; body size, age, general health, weight and nutritional status; whether alcohol is consumed with a meal, before

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¹ DALYs—a measure which combines mortality in terms of years of life lost due to premature death and morbidity in terms of years lived with disability.
driving or operating machinery and whether it is consumed on its own or together with other substances.

Women, as well as children and young people, are usually more affected by alcohol and have higher concentrations of alcohol in their blood than adult men given the same alcohol intake. This is because women tend to have lower body weights, smaller livers and a higher proportion of fat to muscle.

How gender norms influence alcohol use

Drinking patterns differ significantly between men and women, between age groups, between ethnic or religious groups, among different cultures and levels of socioeconomic development. The strongest predictors of alcohol use—as shown in surveys—are age and sex. Alcohol use patterns are embedded in the social, cultural and gender norms of a given society. Surveys report that, not only do more men than women drink, but men also drink more than women. Historically, drinking has been socially acceptable primarily for men, but it is increasingly more acceptable for women to consume alcohol in both developed and developing countries. Women are less likely to drink alcohol frequently or heavily, or to report drinking related problems. Nonetheless, women still tend to experience more social stigma related to alcohol consumption than men.

There are also gender differences in settings where women and men drink, with women more likely to drink in private as opposed to public places. This contributes to the invisibility of women's alcohol use making it less likely for them to seek help for their alcohol use related problems. The situation in developing countries is similar, though differences in consumption between men and women are greater. This means that women are less likely to engage in aggressive, sensation-seeking and antisocial behaviours which may result from alcohol consumption. Even when women abstain, they are still likely to be directly affected by excessive alcohol consumption by men, since they are commonly the target of aggressive behaviours. This risk is greater if women themselves have used alcohol as well.

Alcohol use and risk behaviour

Alcohol consumption is associated with risky sexual behaviour. This is due in part to societal stereotypes and/or expectations that connect heavy alcohol consumption with increased sexual behaviour. The connection between risky sexual behaviour and alcohol consumption is compounded by a common side-effect of alcohol intoxication—loss of social inhibitions. For example, studies show that the first sexual encounter for a large number of adolescents occurs while under the influence of alcohol. For many, particularly girls, it is likely to be unwanted and even forced.

In most societies women who consume alcohol are commonly viewed as being more sexually promiscuous and thus, may suffer stigmatization and discrimination. Women who consume alcohol in certain contexts may also be viewed as “easier” sexual targets to men. This has implications for sexual and reproductive health more broadly.

Health impact of alcohol use

Alcohol is associated with a wide range of adverse health consequences for men and women to varying extents. These consequences include: several forms of cancers,
(including breast cancer in women), chronic liver disease, heart disease, damage to the central and peripheral nervous systems and alcohol induced unintentional injuries such as those from road traffic accidents, drowning, suicides, and sports and leisure injuries. It is also associated with violence by an intimate partner especially for women. A study of female homicide victims in South Africa found that 53% of them had a blood alcohol concentration greater than 0.1 g per 100 ml (Lerer LB 1992). The researchers suggest that a woman with alcohol problems is more likely than other women to be in a violent relationship including being forced to having sex against her will.

**Acute adverse consequences of alcohol use**

**Alcohol intoxication and bingeing**

Intoxication is the most common cause of acute adverse consequences. It occurs when the amount of alcohol consumed by an individual leads to a temporary state of alteration of the person’s alertness, perceptions, decision-making, judgement, emotions and behaviour. For the same amount of absolute alcohol consumed, women are at higher risk than men for adverse consequences. Women appear more impaired than men after drinking equivalent amounts of alcohol, achieving higher blood alcohol concentrations, even when doses are adjusted for body weight. Unintentional injuries, poisoning and interpersonal violence tend to be more common among men, and especially among intoxicated males. Gender roles and norms may also contribute to the patterns of injuries seen. The risk of other acute adverse effects such as poisoning and suicides following intoxication appear similar for both sexes.

Adolescent girls as well as adult women who are intoxicated are more vulnerable to sexual abuse which contributes to disease burden in terms of acquisition of sexually transmitted infections (STIs), including HIV as well as unwanted pregnancies. Among young women, sexual abuse exacerbates their biological vulnerability to STIs and HIV.

**Diseases in which alcohol plays a contributory role**

Alcohol plays a role in the development of:

a) **Cancers**: Oropharyngeal, oesophageal and liver cancers have all been consistently related to alcohol use. The overall risk relationship between alcohol and cancers can be characterized by an almost linear dose-response relationship between the volume of drinking and the relative risk of outcome. In women, breast cancer has been associated with moderate as well as heavy drinking of alcohol. The burden of disease from cancers is higher among males as on average more men consume alcohol.

b) **Cardiovascular diseases**: Research shows that use of alcohol is both a risk and a protective factor for cardiovascular diseases. Most studies suggest that low-level consumption of alcoholic beverages offers some protection against coronary heart disease, but high levels of consumption does have long-term adverse effects.

c) **Mental illness**: Alcohol use disorders are associated with co-morbid mental disorders which may include anxiety, depression and other psychotic illness such as schizophrenia. Studies also show that depression is more common among male heavy drinkers and female ex-drinkers.

d) **Consequences of alcohol use in pregnancy**: A woman’s consumption of alcohol during pregnancy can adversely

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**Figure 2**: Global disease burden (in DALYs) in 2001 from alcohol use disorders, by age group and sex

<table>
<thead>
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<th>Years</th>
<th>0-4</th>
<th>5-14</th>
<th>15-29</th>
<th>30-44</th>
<th>45-59</th>
<th>60-69</th>
<th>70-79</th>
<th>80+</th>
</tr>
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<td>5.3</td>
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<td>5.9</td>
<td>3.2</td>
<td>1.5</td>
<td>0.2</td>
</tr>
<tr>
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<td>0.05</td>
<td>0.6</td>
<td>4.8</td>
<td>5.6</td>
<td>4.7</td>
<td>2.8</td>
<td>1.2</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Source: WHO Global Status Report on Alcohol, 2004
affect her fetus. One consequence of alcohol consumption may be the development of fetal alcohol syndrome, a condition which can cause a variety of health problems in newborns and later on in early childhood. It has also been shown that even sporadic doses of alcohol consumption during pregnancy may increase the risk of congenital abnormalities in newborns. In addition, women who drink during pregnancy are at increased risk of miscarriage or premature delivery. Heavy drinking may also impair women’s ability to conceive.

Long-term socioeconomic consequences of alcohol use
The social and economic consequences resulting from alcohol use affect men and women differently and are related to traditional societal gender roles. The direct costs may be higher in men because they are breadwinners in many societies. Indirect costs, resulting from morbidity experienced by women alcohol users will have a greater impact on the home as productive and reproductive roles within the household may be affected. Such indirect costs extend to single-parent households as well.

Women and men may suffer adverse consequences such as economic hardships, or other family problems due to alcohol consumption by a partner or family member. For women, these consequences may also include domestic violence and sexual assault. Violence can result in severe physical and mental health consequences. In the USA, one study found that offenders had used alcohol or other psychoactive substances in 61% of sexual violence incidents, in 76% of these incidents, alcohol had been consumed prior to the violent act (Brecklin, L.R., Ullman, S.E. 2001).

What are the implications for policy?
The goal of a public health policy on alcohol should be to reduce overall use and alcohol related harm and to avoid the promotion of alcohol or measures that may increase alcohol use at the individual or societal levels.

Prevention
The World Health Organization predicts marked increases in alcohol-related burden of disease in the future if effective policies are not put in place to discourage heavy consumption of alcohol. Public health policies on alcohol will have beneficial impact on both sexes. Specific policies that need to be explored include: enforcing price controls, increasing taxation on alcoholic beverages, reducing availability of alcohol, increasing the minimum drinking age and establishing and enforcing controls on drinking and driving. Policies must, however, consider how alcohol use and abuse affects men and women differently.

Changing gender roles have contributed to an increase in alcohol consumption by women. For prevention strategies to be effective among women, priority should be given to a) developing gender-specific messages, b) developing prevention programmes with the participation of women, c) incorporating prevention activities in services that target women, such as antenatal and family planning services, d) building capacity for health programmers and service providers in identifying alcohol use and other related problems such as intimate partner violence and e) developing policies and services for women victims of violence or vulnerable to adverse health and social problems from the drinking behaviour of their partners.

Treatment and rehabilitation
Treatment programmes should be gender-specific so as to attend to the different needs and problems of men and women. Furthermore, health workers should be equipped with skills to detect alcohol related problems among women who have contact with the health care system. Constructive and nonjudgmental programmes can improve health seeking behaviour especially among women.

What research is needed?
More research is needed on:
- patterns of alcohol consumption and a gender analysis of related problems across different cultures;
- whether gender roles and other cultural factors are associated with differences in the effectiveness of interventions for early detection of alcohol related problems among women who seek health care;
- effectiveness of gender-specific treatment for alcohol related health problems;
- effectiveness of gender-specific alcohol policies including evaluation of strategies aimed at reducing alcohol related violence, including violence by intimate partners;
- whether preventive messages aimed at reducing consumption and avoiding intoxication should be gender-specific.