



ECONOMIC IMPACT OF ALCOHOL ON SOCIETY: GAINING LESS OR LOSING MORE ?

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Alcohol imposes a high economic cost on society. However, the effort of costing depends on the extent of monetizing the economic impact of alcohol use and should include both direct and indirect costs, and tangible and intangible costs. The direct costs include: medical costs (acute and long-term) and lost earnings due to death and disability. The indirect costs include loss of work, loss of school time, loss of savings, loans taken, cost to the employer/society, low self esteem, social costs of postponed events and lost productivity, vehicle and property damage and legal costs. The calculation of monetary impact of these items depends on the availability of nationally representative data from different sources like hospitals, the transport department, the police department, legal services, repair costs, insurance costs, etc. It is difficult to put a precise monetary value on intangible costs of alcohol use, like death, pain, suffering and bereavement. Similarly the monetary value of reduction in pain and suffering is difficult to estimate. Reviewing the Canadian data, Bernard et al. (1997), lists different cost categories that have been assessed to arrive at the cost of Alcohol-Tobacco-Drug abuse in Canada. The adapted list for alcohol use provides a framework for including different areas of monetary implications. It should be noted that such detailed information is not easily available in India and other South-East Asian countries.

Different cost categories related to alcohol use
Direct costs
1. Hospitalization
2. Physician visits
3. Crime related costs (to include public criminal justice system cost, corrections, private expenditure for legal defence, value of property destroyed in crimes due to alcohol abuse)
4. Motor vehicle crashes (to include legal and court proceedings, insurance administration, accident investigation, vehicle damage and traffic delay)
5. Nursing home stay

(continued...)

Different cost categories related to alcohol use (...continued)	
6.	Property and forest fires (only include damage and cleaning of damaged goods; consequent injuries and deaths are excluded in this category)
7.	Speciality institutions (to include treatment centres other than hospitals and alcohol correctional facilities)
8.	Professional services other than physicians (eg: psychologists, social workers, nurses, physical and occupational therapists, pharmacists, technicians, etc.)
9.	Prescription drugs for treatment
10.	Medical and health services research
11.	Programme administration (including alcohol-related programmes and social welfare programmes)
12.	Administrative costs of private insurance to treat alcohol disorders
13.	Direct costs related to AIDS due to drug abuse not included elsewhere
14.	Costs of alcohol
15.	Prevention programmes (screening, education programmes and mass media campaigns to inform public about the hazards of alcohol abuse)
16.	Ambulance costs (including total costs of transportation)
17.	Training costs for physicians and nurses
18.	Fetal alcohol syndrome including extra neonatal care
19.	Customs and immigration
20.	Home care
21.	Household help (care of house)
22.	Counselling, retraining and re-education
23.	Special equipment for rehabilitation (e.g. wheel chair)
24.	Employee assistance programmes
25.	Avoidance behaviour costs
26.	Group life insurance
Indirect costs	
1.	Morbidity costs: income loss due to alcohol abuse
2.	Alcohol-related productivity loss
3.	Mortality costs: present value of life-time earnings
4.	Foregone consumption
Intangible costs	
1.	Homelessness
2.	Pain and suffering of victims and rest of the community
3.	Value of lost life to the deceased (estimated by willingness to pay to avoid death)
4.	Loss of consumption by prematurely deceased
5.	Alcohol abuse-related pain and suffering
6.	Family disruptions
7.	Community disruptions
<i>Source:</i> Bernard et al. (1997)	



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7.1 Data from Western Countries

There have been substantial efforts made in developed countries communities to estimate the costs of alcohol use and through this the burden on society. The yearly projected economic cost of harmful use of alcohol in the United States for the year 1998 has been estimated to be US\$ 185 billion, including US\$ 26 billion for health care expenditure. It has been estimated that two thirds of the costs of harmful use of alcohol is related to lost productivity, either due to alcohol-related illness or premature death. The study by the National Institute of Alcohol Abuse and Alcoholism (NIAAA), USA, also observed that 45% of the costs of harmful use of alcohol is borne by those who abuse alcohol and members of their households, 39% by federal, state and local government, 10% by private insurance and 6% by victims of abusers and concluded that “much of the economic burden was on the population that does not abuse alcohol and drugs” (NIAAA, 1998). In Canada, the economic cost of alcohol use represents 2.7% of the gross domestic product (Canada APN). In the United Kingdom nearly one third was workplace and economy-related costs, while health care cost was about 7–8% (UK, 2003). The social cost of alcohol consumption amounts to between 1–3% of the gross domestic product in countries in the European Union and has been estimated to be between US\$ 65–195 million (at constant

Cost estimates of alcohol on the community – select countries

Country	Year	Total cost estimate
Australia	1998–1999	A\$ 7 560.3 million
Canada	1992	\$ 7.5 billion
Finland	1990	\$ 3.4–5.7 billion
Ireland	N.A.	€ 2.4 billion
Italy	2003	€ 26–66 billion
Japan	1987	\$ 5.7 billion
Netherlands	N.A.	€ 2.6 billion
New Zealand	1990	\$ 16.1 billion
Scotland	2001–2002	\$ 1.1 billion
South Africa	N.A.	\$ 1.7 billion
Switzerland	1998	CHF 6 480 million
United Kingdom	N.A.	£ 15.4 billion
United States	1998	\$ 184.6 billion

Note: Please refer to the individual country profiles to obtain the original source used.

Source: WHO (2004)

1990 prices and exchange rates). While about 20% of the total cost and the direct cost represent the amount actually spent on medical, social and judicial services, about 10% of the total cost is spent on material damage and about 70% of the total cost represents lost earnings of individuals who die prematurely or are unable to perform their productive tasks in the way they would have, had they not been consuming alcohol (Godfrey, 2004). In essence, the estimated costs of alcohol-related problems varies between 1–3% of the gross domestic product of a country (WHO, 2000a).

7.2 Regional Data

Evidence is gradually accumulating about the economic costs of alcohol use in the SEAR from indirect methods. For example, studies have been done with respect to costing of alcohol-attributable components in road traffic injury, suicides, work-related aspects, and various types of cancers where alcohol has been implicated as a causative agent. The different variables are being gradually delineated and costed. In India, work-related alcohol problems have been estimated to cost between INR 70 and 80 million (WHO, 2004). The costs of managing alcohol-related cancer deaths have not been estimated in totality. However, the cost resulting from tobacco-related cancer deaths has been estimated to be about INR 308 billion (Reddy, 2004); using this cost matrix and best estimate of alcohol-related cancer deaths of 6% (WHO, 2000a), for the Indian population of alcohol-users (Ray, 2004), the costs from alcohol-related cancers can be estimated to be about INR 12.4 billion. Bonu et al., analyzing nationally representative data finds an association between use of tobacco and alcohol, and impoverishment through borrowing and distress-selling of assets due to costs of hospitalization (Bonu, 2005). The costs of managing road traffic injuries have been estimated to be INR 550 billion. From this, the costs linked to alcohol can be estimated to be INR 80 billion (Mohan, 2004). The unit cost of death and serious injury in road traffic crashes in a population-based study has been estimated to be — urban death: INR 28 863; rural death: INR 6764; urban serious injury: INR 30 275; rural serious injury: INR 17 240 (Aeron, 2004). The cost of managing a patient with brain injury in a tertiary care health institution has been estimated to be about INR 1506 per hour (Gururaj, 2000). It also needs to be noted that the burden would not be uniform across rural and urban areas or amongst poor and affluent nations.

In Thailand, the total hospitalization costs (both direct and indirect) for alcohol-related problems were about US\$ 800 million. Similar information for other SEAR Member States is not available.

"Much of the economic burden of alcohol use falls on the population that does not abuse alcohol and drugs".



To obtain comprehensive community-based estimates of the socio-economic cost of alcohol use, four different population groups were examined in the Bangalore study. Enquiries were made regarding expenditure in eight dimensions: health care costs, costs due to injuries — both intentional and unintentional, occupational, financial, psychological, social, legal aspects and help seeking. The average or minimum and maximum expenses for a specified event which occurred during the last 12 months was enquired into. For purposes of calculation, the reported amount and frequency is utilized without making any changes or modifications. It should also be noted that the reported costs are generally under-reported for events of abuse, legal issues or expenses due to injuries. The reported costs do not include the different subsidies already in vogue in the systems (for example, patients pay nothing or only a fraction of the total cost in a public health-care institution). To make the estimates more realistic, only the costs for the alcohol attributed event were considered for analysis.

The average expense computed from the reported expenditure was used to arrive at the average expense for the entire cohort of users and non-users. Despite the list of probable events, it was possible to document an incurred expenditure only in certain events. Respondents often expressed their inability to recall the detailed break-up of their expenses for all events. It also needs to be noted that only costs borne by the alcohol-users or their family are given here. Under the section on health care, only the expenditure related to health problems in general and injury-related expenses have been included. Similarly, the expenses related to loss of employment-related revenue, psychological abuse or paying penalty includes only the money that has been spent when the event occurred either by the user or their family members. For example, 3% of the users reported that they abuse their parents and 83% said they do so under the influence of alcohol and the consequence of the abuse needed to be managed by a health-care provider. However, only a small number actually took the abused parent for treatment. Further, payment of penalties or fines related to an alcohol offence is a very small amount [INR 100] and has been reported by a very small proportion of respondents. This is quite contrary to the prevalent situation. A similar situation can be noted as regards attempts at suicide.

It should be noted that, these expenses are only a fraction of the total costs of alcohol consumption in the community. The costs of premature death, the loss of income due to sickness of the wage earner, costs of caring for chronic alcoholics or the dependent users either at the family level or within institutions (health care or others), the loss of resources

Reported expense on events linked to alcohol use amongst alcohol-users in the Bangalore Study^a

Sl No	Particulars	Frequency ^b	Total amount (pa, in INR)	Average amount per person (pa, in INR)
A. Health-related				
1	Physical problem	327	394 770	1 207
2	Unintentional injury	194	147 608	761
3	Intentional injury ¹	64	19 355	302
4	Psychological aspects	4	735	184
B. Work-related²				
5	Loss of pay due to absence from work	395	102 485	260
6	Borrowed money at workplace	411	65 205	159
C. Social aspects				
7	Debts	1 195	1 820 060	1 508
8	Pawned goods / articles	383	3 710 150	9 664
9	Lost money	34	26 720	79
10	Gambling	56	205 150	3 663
11	Damage to property	31	14 700	474
D. Amount spent on drinking				
12	Only to purchase alcohol	3 256 ³	12 487 210	3 835
13	Costs per event of drinking ⁴	3 256 ³	15 100 572	4 637
E. Total out of pocket expense incurred by the alcohol-users in the study sample				
	Total cost of consequence of alcohol use (A + B + C)	1 665	6 506 938	3 908
	Total cost of the drinking event (D)	32 563	15 100 572	4 638
	Total of A + B + C + D⁵	3 256³	21 607 510	6 626⁵

Note:

a = Mean values have been considered for calculation purposes and occasional extreme costs spent by one or very few individuals have been excluded.

b = Frequency is the number of respondents who have reported the consequence and also attributed the occurrence of the event to the use of alcohol in either self or others.

1 = Includes attempted suicide, spousal injury, parental abuse, workplace injury, sibling abuse, friend abuse, child abuse, experienced violence (because of small numbers these have been clubbed together).

2 = Cost categories of not being able to be on time, decreased ability to work, expenses for being under the influence of alcohol while at work did not have any representation.

3 = The individuals with extreme costs have been excluded from computation.

4 = Includes the money spent on refreshments, travel, etc.

5 = The total expense has been computed by adding the individual costs and finding the mean for the entire study user population of 3256.



to the family, the cost of decreased production due to absenteeism are some of the other costs that contribute significantly to the problem of alcohol consumption. In addition, as the health sector spends enormous amounts on diagnosis, management/rehabilitation of alcohol-users, the costs would be huge, though as yet unmeasured.

There are limitations to such a cross-sectional approach to a costing exercise of the economic impact of alcohol use. It should be considered as a crude and preliminary estimate that needs to be improved. It is anticipated that future research would build on these experiences to arrive at more realistic and systematic figures.

It is evident from the table, that, the expenditures incurred by alcohol-users annually is a huge loss due to pawning goods and articles [INR 9664]. The amount lost while gambling is equally large [INR 3663]. In addition to this, debts, work-related problems and health problems resulted in the alcohol-user spending or losing INR 1508, INR 1450 and INR 1207 respectively. Interestingly, though the numbers are small, the amount spent per annum as a result of damage to property is INR 474. The amount of INR 260 which is the annual loss resulting from loss of pay due to absenteeism from work is quite low and is a pointer to the prevalent lenient disciplinary systems at workplaces which accommodate alcohol abuse. Nearly half of the alcohol-users (51%) report to have had one or more adverse consequence attributable to alcohol use and have spent on an average INR 3900 per annum on these consequences. Additionally, the expenditure due to alcohol and related drinking expenses (refreshments, transportation, etc.) over a period of one year is about INR 4600. The total amount spent by an alcohol-user on both these accounts (amount spent on buying alcohol and related activities during the event of drinking and also managing its consequences) is about INR 6600. This is more than one third of the amount which demarcates the official poverty line [INR 18 000 pa]. It is estimated that in India that INR 290 billion is spent on drinking alcohol by alcohol-users.

The following table provides the estimated costs of alcohol use from the results of the Bangalore study extrapolated to the whole of India. While acknowledging the limitations of such extrapolations, it is still evident that nearly INR 244 billion is spent every year to manage the consequences attributable to alcohol use. The total excise revenue of the central and state governments in India for the year 2003–04 was about INR 216 billion contributing to about 13% of the total tax revenue (Damodar, 2004). This is an increase of nearly 39 billion over the period of three years (INR 177 billion in the year 2001, Benegal 2003).

Excise revenue versus cost of consequences attributable to alcohol use	
Cost category	Total INR
Total cost of management of consequences of alcohol use for all alcohol-users ^{a, b}	244 billion
Total excise revenue of all central and state governments for 2003–2004	216 billion
<p>Note: a = The total numbers of alcohol-users in India is estimated to be 62.5 million as per the national estimates (Ray, 2004) b = The total expense has been computed by adding the individual costs and is the mean for the entire study user population of 3256</p>	
<i>Source:</i> The Bangalore Study (2006)	

It is estimated that the Indian Government spends nearly INR 244 billion every year to manage the consequences of alcohol use, which is more than its total excise earning – INR 216 billion. Clearly Indian society is losing more than it is gaining.

In addition to the revenue earned by the government, it is anecdotally reported that the media industry earns approximately INR 9 billion every year through advertisements (currently surrogate advertisements since direct advertisement is banned) (Deccan Herald, January 19, 2004). The media should introspect on the impact of their advertisements on the public health scenario and the health, social and economic effects of alcohol.

The above estimates are a fair assessment, albeit a conservative one, and a pointer towards the cost of management of consequences of alcohol use in the country. A noteworthy aspect of these estimates is that they are higher than the total revenue generated from alcohol manufacture and sale.

What needs to be noted is that this does not include the intangible costs of the psychological suffering that the family and society undergoes as a result of alcohol use and several other issues discussed earlier. 80–90% of the users who run away from home or stay away from home or feel guilty report it to be due to their use of alcohol. Alcohol has been implicated in 60 health problems and various other social, economic, legal, psychological and emotional problems affecting day-to-day life of not just individuals and families but also the whole society. The adverse event could vary from being a mild hangover or acid dyspepsia to chronic debilitating cirrhosis of the liver and several cancers. The latter category requires long-term care for diagnosis, management, palliative care, rehabilitation and in several other areas. Similarly, an individual who goes into a persistent vegetative state resulting from brain damage due to a road traffic injury consequent to a “binge” of alcohol-drinking also requires life-long rehabilitative services. The occupation-related costs also vary depending on the skill of the individual: an acute event (major or even minor one) leading to absence from work in a high technology employment environment can result in losses which exceed several





thousands of rupees. A long-term alcoholic husband can deprive the family of the much needed resources, both immediately and over a period of time. Suicides consequent to alcohol use by the husband, or even attempt at suicide, by the mother or father, as a result of alcohol consumption by a family member, can result in emotional trauma to the children of the family. An alcoholic father does not merely set a bad example for the children, but also deprives them of emotional and social security, leading to academic failure, substance abuse, and generally poor social adaptation.

Thus, if all costs are comprehensively examined and calculated for all events, the economic impact would be much higher than the conservative estimates noted above. In the final analysis, Indian society might be losing more than it is reportedly gaining.