An assessment of financial and social cost of alcohol use

Naba Raj Koirala **Mahendra K. Nepal**
Uday K. Sinha **Choplal Bhusal**
Vidya Dev Sharma **Anupam Pokharel**
Abdul Khalid **Subhash C. Sharma**

Abstract

Alcohol has been treated as a normal commodity in the modern societies. Alcohol consumption has risen in developing countries, where it takes a heavy toll. Various problems directly or indirectly related with excessive alcohol use are increasingly identified. Economic impact of alcohol is thus an important issue and the present work aims to study the direct cost of alcohol as well as various adverse consequences due to its use in the patients attending the facility. This prospective-descriptive study included 40 patients admitted in the Psychiatry Ward, TUTH due to alcohol-related problems over a period of six months. Thirty-nine (97.5%) were males, thirty-five (87.5%) were married, and 24 (60%) were farmers. The mean age of the patients was 37.7±10.3 years, and the mean duration of alcohol abuse was 14.65±9.51 years. The direct cost of alcohol was calculated as Rs. 57056 per year per person and an estimated Rs. five billion being spent by the Nepali nationals in alcohol over a period of one year. Alcohol use was found to be associated with marital, social, financial, occupational and legal problems. Adverse effects as well as consequence of alcohol is thus found to take heavy toll in the society.

Keywords: Alcohol; complications; cost.

Introduction

Alcohol has been treated as a normal commodity in the modern societies. Coombs and Globetti in 1986 have estimated that 15% to 20% of the adults in Latin America are alcoholics or excessive drinkers. In a cross-national study of ten different cultural regions, lifetime prevalence rate for alcohol abuse and dependence varied from about 0.5 per cent to 22 per cent (Helzer & Canino, 1992). The World Development Report mentioned that alcohol-related disease affect 5% to 10% of the worlds population (World Bank, 1993).

Various problems directly or indirectly related with excessive alcohol use have been raised in this isue in the recent years. Excessive drinker is liable to cause profound social disruption particularly in the family as well as at work (Gelder *et al*, 1995). There is also a strong association between road accidents and alcohol abuse (Zobeck *et al*, 1994; Naranjo and Bremner, 1993). The physical damage due to excessive alcohol is an already acknowledged fact (Ritson *et al*, 1993). Although in 1983 the World Health Assembly declared alcohol-related problems to be among the world's major health concerns, alcohol consumption has risen in developing countries, where it takes a heavy toll (Jernigan *et al*, 2000). The World Development Report acounted for approximately 25% of the global burden of disease in 1990 to alcohol (World Bank, 1993. Economic impact of alcohol is thus an important issue. The Research Triangle Institue estimated the total cost of alcoholism at $116.7 billion (Halwood *et al*, 1980). The same report also associated 612 billion work-days lost with use of alcohol.

Keeping the above information in the background, there needs a detailed study of magnitude of the problems due to use of alcohol in Nepal before formulating any plan in this issue. The Department of Psychiatry and Mental Health, Tribhuvan University Teaching Hospital (TUTH), has been providing services to alcohol as well as other psychoactive substance abusers in various ways. This paper aims to study the direct cost of alcohol as well as various adverse consequences due to its use in the patients attending the facility.

Material and method

It was a prospective and descriptive study. The sample of the study were the patients admitted to the Psychiatry Ward, TUTH due to alcohol-related problems over a period of six months. A self-designed proforma was used to record the socio-demographic data and other information related to alcohol use (Duration of alcohol use, frequency of alcohol use, quantity and quality of alcohol, total cost of alcohol per day, and various complications due to alcohol use). The information was kept confidential. Data analysis was done in SPSS version 7.5.

RESULTS

A total of 40 patients to the Psychiatry Ward, TUTH were selected; out of which 39 (97.5%) were males and the remaining

one (2.5%) was a female. Maximum patients were in the age group of 31-40 years (45%), followed by the age group 21-30 years (20%). The mean age of the patients was 37.7±10.3 years. Thirty-five (87.5%) patients were married, 2 (5%) single, 2 (5%) were widow and one (2.5%) was separated. The majority of the patients were Hindus (N=38, 95%), and farmers (N=24, 60%) (Table I).

Table I: Sociodemographic profile

Age	*Male*	*Female*	*Total*	
(in years)	*N=39*	*N=1*	*N*	*%*
≤ 20	1	0	1	2.5
21-30	8	0	8	20
31-40	17	1	18	45
41-50	6	0	6	15
> 50	7	0	7	17.5
Mean age	37.7±10.3 years			
Marital status				
Single	2	0	2	5
Married	34	1	35	87.5
Separated	1	0	1	2.5
Widow	2	0	2	5
Religion				
Hindu	37	1	38	95
Buddhist	2	0	2	5
Occupation				
Service	5	0	5	12.5
Business	5	0	5	12.5
Student	1	0	1	2.5
Farmer	24	0	24	60

Housewife	0	1	1	2.5
Unemployed	4	0	4	10

Sixteen (40%) patients were using alcohol for 11-15 years, whereas only five (12.5%) patients were using alcohol for less than five years. The average duration of alcohol use was 14.65±0.51 years (Table II). The majority (N=31, 77.5%) of the patients were using alcohol all 7 days of the week, the average frequency of alcohol use being 6.37 days per week for all (Table III). Eighteen (45%) patients used to take a litre or more alcohol per day. The average amount was 1720±1364 ml of alcohol per day (Table IV). The majority (N=27, 67.5%) of the patients, who were mostly farmers, consumed locally made un-distilled alcohol (Table V).

Table II: Duration of alcohol use

Duration of alcohol	*Total*	
use	*N (40)*	*%*
Upto 5 years	5	12.5
5-10 years	8	20
11-15 years	16	40
16-20 years	4	10
More than 20 years	7	17.5
Average duration	14.65±9.51 years	

Table III: Duration of alcohol use

Frequency of alcohol use	*Total*	
(days/week)	*N (40)*	*%*
2	2	5
3	1	2.5
4	1	2.5
4	1	2.5
5	3	7.5
6	2	5
7	31	77.5
Average frequency	6.37±1.37	

Table IV: Duration of alcohol use

Quantity of alcohol use	*Total*	
(ml.)	*N (40)*	*%*
Upto 250	3	7.5
250-500	7	17.5
500-1000	12	30
1000-2000	5	12.5
2000-4000	11	27.5
More than 4000	2	5
Average quantity	1720±1364 ml	
Average of maximum use	3387±3533	
Average of minimum use	1139±976	

Table V: Quality of alcohol and occupation

	Quality of alcohol		
Occupation	*Distilled (N=6, 15%)*	*Undistilled (N=27, 67.5%)*	*Both (N=7, 17.5%)*
Service	3	0	2
Business	1	4	0
Student	0	1	0
Farmer	2	20	2
Homemaker	0	1	0
Unemployed	0	1	3

The direct cost of alcohol was calculated by combining the cost paid for alcohol as well as the money paid for snacks taken along with alcohol. More than half of the patients spent in the range Rs. 100-200 per day. Twelve (30%) patients spent more than Rs. 200 per day. The average daily expenditure was Rs. 172.25±115.57 (Table VI).

Table VI: Daily expenditure in alcohol

Daily expenditure in Rs.	*Total*

	N (40)	*%*
Upto 100	7	17.5
100-200	21	42.5
200-300	5	12.5
>300	7	17.5
Average	Rs. 172.25±115.57	

Table VII mentions various complications our subjects suffered due to use of alcohol. Eighty percent had marital discord as well as problems in their social spheres. Next to these were the financial problems (77.5%). Half of our subjects had occupational problems and almost similar proportion (45%) had physical problems. Only 10% of our patients reported suffering from legal problems as the consequence of alcohol use.

Table VII: Complications of alcohol use

Complications	*N*	*%*
Marital	32	80
Social	32	80
Financial	31	77.5
Occupational	20	50
Physical	18	45
Legal	4	10

Discussion

The medical, psychological as well as social toll of excessively used alcohol is too obvious to be mentioned. However the exact psychosocial cost of alcohol abuse is yet to be studied. Although there are some studies regarding the extent or cost of alcohol-related problems, these have been said to be of dubious value (Gill, 1994). A person in our study used to spend Rs. 172.25 per day for alcohol and snacks taken alongwith, with an average of 6.37 days per week amounting to Rs. 1097.23 in a week, and Rs. 57056 per year. As having mentioned already, in a cross-national study of ten different cultural regions, lifetime prevalence rate for alcohol abuse and dependence varied from about 0.5 per cent to 22 per cent (Helzer & Canino, 1992). Even if we take the lower value, out of 21 million population of Nepal, approximately 100000 will be in the category of alcohol abusers/dependents. If we apply the above expenditure for all, then we will be finding an astonishing figure of Rs. 5,705,600,000/- (Rs. Five billion) being spent by the Nepali nationals in alcohol over a period of one year. This reported amount does not contain the cost the individual has to spend for his treatment and other problems. Therefore we can assume that the average expenditure reported by this study can be generalized to the people in the community. However, alcohol-dependent patients may vary in their alcohol taking habits in many ways. The clients admitted for in-patient care reported greater alcohol consumption (Skinner, 1981) than out-patient treatment for alcoholism and drug addiction. Furthermore the woman alcohol abusers in the context of Nepal is another important aspect which cannot be overlooked (Sharma *et al*, 1999) and their alcohol using habit may be different from men. Thus there are some definite factors influencing the direct economic cost of alcohol, which we have not been able to control in this study.

The cost to treat the physical conditions as a consequence of alcohol abuse and dependence is another economic impact of alcohol. McKenna *et al* (1996) studied the cost of alcohol-related medical problems in the U.K. and found the average total health care costs of such patients was 1134 pounds. Similar data in our context is yet to be calculated. At work also, the heavy drinkers often progress through declining efficiency, lower-grade jobs, and repeated dismissals to lasting

unemployment (Gelder *et al*, 1995). There is also a strong association between road accidents and alcohol abuse (Zobeck *et al*, 1994; Naranjo and Bremner, 1993). Psychosocial problems are encountered not only in the alcohol users but also in the family members of the person (Sinha *et al*, 2000). Our finding that eighty per cent of our subjects having marital as well as social problems indicate social toll of alcohol is not less important than the direct cost itself.

The average yearly expenditure on alcohol, as already highlighted, is well above the average income for hte same duration. More than three-quarter of our patients having financial problems can be explained in this background.

The duration for which the patients were using is yet another indicator of the cost of alcohol. The average duration of alcohol abuse/dependence was roughly one and a half decade. Similar data has been obtained by Sharma *et al* (1990) in the study of women with alcohol-related problems. The reason why our subjects took so long before attending for detoxification should be attempted to be found out, in a way to encourage people to give up this habit as soon as possible.

There was a clear male preponderance in our study sample. In the background of rise in the number of females using alcohol (Gelder *et al*, 1995), and recent evidences that female alcohol users attending a general hospital due to various physical problems as a direct consequence of long-term alcohol abuse (Sharma *et al*, 1999), only one patient attending our service for detoxification is worth paying attention. It may be due to a different alcohol using pattern in females on the one hand, and preference to the males for having health care service on the other hand (Gureje, 1996).

Although the main aim of the present work was to study direct cost of alcohol abuse/dependence, some other inferences can still be drawn. The adverse impact on the family, disruption of social relations of the person, depletion of already poor resources of the alcohol abuser and inefficient work-performance brought about by long-term use of alcohol contribute to the breakdown of already frail society.

References

1. Coombs, D.W. & Globetti, G. Alcohol use and alcoholism in Latin America: Changing patterns and sociocultural explanations. *International Journal of Addiction* 1986; 21, 59-81.

2. Gelder, M., Gath, D., Mayou, R. & Cowen, P. *Oxford Textbook of Psychiatry* 1996, Edn. 3, Somerset: Oxford University Press.

3. Gill, J. Alcohol problems in employment: epidemiology and responses. *Alcohol and Alcoholism* 1994; **29**: 233-248.

4. Gureje, O. (1996) Schizophrenia. In: *Psychiatry for the Developing World.* (eds. D. Tantum, L. Appleby & A. Duncan). pp. 111-131, Dorchester: Gaskell.

5. Harwood, H.J., Napolitano, D.M., Kristiansen, P.L., *et al* (1980) Economic costs to society of alcohol and drug abuse and mental illness-1890. Research Triangle Park, North Carolina: Research Triangle Institute, Publication no. RT1273/00-01FR.

6. Helzer, J.W. & Canino, G.J. (1992) Comparative analysis of alcoholism in ten cultural regions. In: *Alcoholism in North America, Europe and Asia*. (ed. J.E. Helzer and G.J. Canino), pp. 289-308. Oxford University Press.

7. Jernigan, D.H., Monteiro, M., Room, R. & Saxena, S. Towards a global alcohol policy: alcohol, public health and the role of WHO. *Bulletin of World Health Organization* 2000; **78** (4): 491-499.

8. McKenna, M., Chick, J., Buxton, M., Howlett, H., Patience, D. & Ritson, B. The SECCAT survey: I. The costs and consequences of alcoholism. *Alcohol and Alcoholism* 1996; **31**: 565-576.

9. Naranjo, C.A. & Bremner, K.E. Behavioural Correlates of alcohol intoxication. *Addiction* 1993; **88**: 31-41.

10. Ritson, B., Chick, J.D. & Strang, J. (1993) Dependence on alcohol and other drugs. In: *Companion to psychiatric studies* (ed. R.E. Kendall and A.K. Zealley) pp. 359-395. Churchill Livingstone: Edinburgh.

11. Sharma, A., Khandelwas, S.K. & Karla, O.P. A profile of women with alcohol related problems at BPKIHS, Dharan. *Journal of Nepal Medical Association* 1999; 131, 61-66.

12. Sinha, U.K., Koirala, N.R., Sharma, V.D., Khalid, A. & Nepal, M.K. Indirect Psychosocial Cost of Alcoholism: Priliminary Analysis. *Nepalese Journal of Psychiatry* 2000; 1, 98-105.

13. Skinner, H.A. Comparison of clients assigned to in-patient and out-patient treatment for alcoholism and drug addiction. *British Journal of Psychiatry* 1981; **138**: 312-320.

14. World Bank (1993) *World Development Report 1993: Investing in Health*, New York: Oxford University Press.

15. Zobeck, T.S., Grant, B.F., Stinson, F.S. & Bertolucci, D. Alcohol involvement in fatal traffic crashes in the United States: 1979-1990. *Addiction* 1994; **89**: 227-231.