

The Social and Health burden of alcohol abuse

José Nino Meloni^a e Ronaldo Laranjeira^a

^aUNIAD (Unidade de Pesquisa em Álcool e Drogas) – Departamento de Psiquiatria – EPM-UNIFESP

Abstract

Based on the recent report on alcohol-related health and social burdens issued by the World Health Organization (WHO), this paper explores and discusses the evidence in support of the view that concerns about alcohol consumption extend far beyond consideration of personal and family health consequences, but should be considered in the context of major socio-political and public health priorities. The global findings of the WHO report are first discussed, followed by analysis of the specific findings regarding the burden of alcohol problems in Brazil.

The social burden of alcohol problems is quantified by applying a unifying methodology which incorporates outcomes for alcohol-related violence, family problems, child abuse, public disorder, lost productivity, and other consequences.

By analyzing the epidemiological data on alcohol-related morbidity and mortality data from each continental region and sub-region, and cross-tabulating data on average consumed volume and patterns of consumption, the burden of disease are estimated for the various regions of the world. The final results provide a comparative analysis of risk, basically using a representative indicator of number of productive years lost because of illness or premature mortality due to alcohol consumption ("DALYs" – Disability Adjusted Life Years). The DALYs global value in 2000 was 4% of world mortality, with this rate predicted to increase as global alcohol consumption increases. Variations among various regions in the planet are critically analyzed on predictive factors.

Keywords: Alcoholic beverages. Alcohol drinking. Attributable risk. Prevention & control.

Introduction

For being privileged agents in the process of formulating public policies, health professionals in general and specifically psychiatrists, should rely on data that surpass the knowledge supporting their practice, i.e., evidence that is useful for the treatment of alcohol-dependent subjects. It is highly important that these professionals keep in mind that alcohol consumption has a huge social burden, and exerts an enormous weight as a cause of health problems.

Based on a recent review by the World Health Organization, from a comprehensive study performed in 2000,¹ this article displays updated data on worldwide alcohol-related problems, emphasizing the scarce, although incisive Brazilian data. Beyond the mere description of methods and results, it is aimed to demonstrate, through consistent evidence, an estimation of the high burden caused by alcohol for society. This evidence represents the avant-garde of international and local research efforts.

Despite the immense methodological difficulties raised by the issue, the subtitles of this article only depict the systematic search of evi-

dence, in the global population, about how much it is consumed, how it is consumed, which social problems it causes, how many people get ill and die due to drinking, i.e., which is the impact of the harm caused by alcohol consumption.

This analysis includes two dimensions of problems deemed indissociable, as they occur always simultaneously: The Global Burden of Social Harm and The Global Burden of Disease. Generically speaking, the results for each variable considered, as well as the final conclusions, confirm Edwards' theses,² which indicate that, under the perspective of prevention, it does not suffice knowing that excessive alcohol consumption generally increases the individual risk of occurring problems. The rates of problems in the population vary according to the culture, social layers and within each culture along time. Moreover, the burden of social and health problems lays not only on those who drink excessively, a well-illustrated fact in classical and recent publications.³ Qualifying the strength of the relationship between the consumption of alcohol and the appearance of problems provides instruments to make decisions about the most adequate prevention policies.

The global Social Burden

It is common to verify that medical issues or those of general health prevail in the debates about the harm involved in alcohol consumption. However, it is impossible to disconsider that alcohol is closely related to problems in the social field. This has been considered as the 'forgotten dimension,'⁴ among other reasons, for the inexistence of metric patterns matchable with health data, due to the insufficient international systematization of comparative social data and also due to the limitation of the already existent information sources, whose data collection does not allow structured studies.

Distinguished from health problems, alcohol-related categories of social problems include: vandalism, public disarray, familial problems such as marital conflicts and divorce, interpersonal problems, child abuse, financial problems, occupational problems other than health occupational ones, educational difficulties and social costs. Although a direct causality can not be established, the study of these categories of harm, including variables such the volume of consumed alcohol, consumption patterns and other interactive factors, demonstrated that the social consequences of alcohol consumption situate this product at least as an additional or mediating factor among others which contribute for the occurrence of a determined problem, a similar conclusion to that valid for health problems.

The assessment of the social burden related to alcohol demonstrated that the social environment in which alcohol is consumed, according to its economic structuring and cohabitation rules, determines several insertion nuances of alcohol consumption, at the same time in which is directly influenced by the current patterns of use. The article by Laranjeira and Hinkly⁵, which assesses the relationship between social deprivation, violence, and density of points of sales of alcohol, in one peripheral region of the Greater São Paulo, depicts clearly this dynamics. Social deprivation is related to a higher number of points of sales of alcohol and high urban violence.

It is important to highlight that, although there may be some psychological benefit from alcohol consumption, regarding social problems, the lower the global consumption, the lower their rates.

The Global Weight of harmful effects to health

There are innumerable indications which allow characterizing the role of alcohol as a risk factor for disease and death. At the individual level, the pathophysiological correlations between alcohol intake and development of health problems are well established. However, the weighting between the beneficial and pathogenic effects of alcohol is not always clear. The difficulty is still higher when issues at the population levels are posed.

Which consequences could be predicted in the case of an increase or decrease in the consumed volume of alcohol, or else, if occurred a change in the alcohol consumption patterns in a certain community?

In a collective scale, two correlated dimensions should be explored to measure the impact on health. First is the exposure dimension, which includes the average volume of per capita alcohol consumption and consumption patterns. The second one comprises the measurement of the consequences, including an extensive set of data of the general morbi-mortality and the risk fractions attributable to alcohol. Occasional beneficial effects of alcohol are taken into account. If two spheres represent these two dimensions, the global burden of health problems attributable to alcohol could be obtained from the intersection between them. The health indicator conventioned to express the corresponding value of the Global Harm to Health (GHH) will be described below.

1. Average volume of consumption

It is possible to calculate the regional and nation-wide average volume of alcohol consumption in a certain population. It is also possible to discriminate intake volume by subgroups, according to gender and age

range, for example. The average volume of consumption is one of the fundamental elements to assess the risk attributable to alcohol as a factor implied in the general rates of morbi-mortality, and the study by Jürgen Rehn et al.⁶, in which this issue is specifically dealt with, should be mentioned. Generally, the higher the average consumed volume, the higher the occurrence of health problems.

In order to reinforce the importance of the association between the production of alcoholic beverages and the global consumption it is worth mentioning data compiled by the alcohol industry proper, about the yearly production and sales of distilled beverages in the world (Sazerac Company, Inc.2003). These data inform that China is the world's largest producer and consumer of distilled beverages (725 million liters of *baijiu* have been produced and commercialized), followed by Russia, with a yearly estimated consumption of 350 million liters of vodka. The same sources inform that Brazil is placed, with its *cachaça*, in a worrying fourth place among the largest worldwide producers of distilled beverages, with nearly 200 million liters commercialized per year, being 195 million liters in the internal market. Brazil produces and consumes the same amount of *cachaça* and whisky. The difference is that whisky is consumed worldwide and *cachaça* only in Brazil. If crossed with data of the Brazilian population, whose density is many times inferior to the Asian one, the figures mentioned above are for themselves a strong alert sign about the potential of risks involving the production and consumption of alcoholic beverages in Brazil.

2. Consumption Patterns

Consumption patterns of alcoholic beverages vary according to culture, country, gender, age range, existent social rules and the social subgroup considered. It is also highly variable the risk associated with the several consumption patterns. As an example, drinking wine regularly at the meals and in moderate amounts is a pattern of lower risk when compared to the copious intake of distilled beverages, even being the latter occasional, in public or not.

In order to calculate the global burden of harm related to consumption of alcohol, the WHO has characterized the consumption patterns of each nation on Earth, classifying them in four risk levels which have an increasing variation from 1 to 4, according to the found pattern. (Figure 1) depicts these results, matching them with data of mortality attributable to alcohol.

The results may deem strategic, due to the conclusions to which it is possible to reach from them. In a general way, Western Europe has consumption patterns with lower risk, contrarily to Central Europe and the former Soviet Union. The United Kingdom, China, Australia, North America and the Middle East, compose together with Argentina – the only representative of Latin America a group whose pattern is situated in an intermediated range, or of low risk. For most of the remaining countries, among them Brazil, it was verified the existence of consumption patterns with high-risk level (level 4). The data show that the consumption pattern is reflected in morbid-mortality rates attributable to the consumption of alcohol, in a direct proportion to the degree of risk associated with it.

3. Epidemiology of the consequences. General Morbi-mortality and Fraction of risk attributable to the consumption of alcohol

By means of epidemiological methods, the data related to average volume of consumption and the consumption patterns might be correlated to several categories of health problems, which beforehand are consistently associated with the consumption of alcohol. These problems include: low weight at birth, mouth and oropharyngeal cancer, hepatic cancer, unipolar depression and other psychiatric disorders related to the consumption of alcohol, epilepsy, arterial hypertension, myocardial ischemia, cerebral-vascular disease, diabetes, hepatic cirrhosis, accidents with vehicles and auto-propelled machines, falls, intoxications, self-inflicted harm and homicides.

Crossing data on alcohol exposure with those related to its conse-

quences and performing with these whole data a statistical treatment adequate to the method, the risk attributable to alcohol in the several types of diseases and also its direct influence in the determination of mortality may be calculated.⁷

The results of the study reported by WHO show that, for the male population, 5.6% of all deaths which occur in the planet are attributable to the consumption of alcohol as well as 0.6% of the deaths which occurred among women and the conclusion is that alcohol determines 3.2% of the global mortality. In 1990 the estimation reached 1.5%, having occurred an increase that overcame that figure more than twice, in a ten-year period, indicating therefore a hardly auspicious trend.



Figure 1 – Comparative maps indicating the worldwide consumption patterns and the risk level for each country (rising scale from 1 to 4) and the respective mortality attributable to the consumption of alcohol.

(Source- World Health Organization -2003.)

4. The global burden of health harm

The final finding of alcohol-related problems in 2000 was presented through an elegant health indicator, called DALYs, an English acronym, which corresponds to the words Disability Adjusted Life Years. This indicator is related to the percentage of years which are lost due to disease or early mortality, attributable to alcohol intake, and in that year it was found a figure of 4% for the entire world.

If the data displayed in table 1 cause, by themselves, a negative impression about the whole set of harmful effects of alcohol in the global societies, it should be informed that when these results are individualized by each country, it was observed that, among the countries in which the consumption patterns and the intake volume were associated with higher risk, the DALYs was also significantly higher.

In the countries in which the market economy is scarcely developed and the rates of general mortality are higher, such as in Africa, alcohol does not stand among the ten main causes of disease and death.

Although the situation linked to its consumption is also much severe, the sanitary problems still prevail. In the richer economic blocks, despite the existence of prevention and control policies, the consumption of alcohol appears as the third most harmful factor to health, being the DALYs of North America, for instance, situated between 4.0 and 7.9%, and tobacco is the most morbid factor.

For those market-economy countries with intermediate poverty rates, among which is Brazil, alcohol is the most important causal factor for disease and death, and the total harmful impact, within a percentage scale, may be considered in levels situated between figures that may vary from 8.0% up to 14.9% of the total of health problems of these nations. In Brazil, alcohol consumption is responsible for more than 10% of its health problems.

Discussion

The results of the study on the global burden of problems related to alcohol-consumption, Global Social Harm and Global Harm to Health, show that they are very high all over the world. 'DALYs' the relative value of in the specific context of each region of the planet, evidences the existence of a gradient which differentiates the role of alcohol on each of these communities.

The difference found in the three realities which were presented in the precedent topic may be better understood highlighting the availability and accessibility of alcohol at each scenario considered. In the poorest countries there is practically no control about accessibility, being almost inexistent social control programs to attenuate the morbid impact of alcohol consumption. Although important, the role of alcohol as a determining factor of social and health problems is blurred amidst other components, which are proper of extremely poor communities. In rich countries the availability is high and the accessibility, although being equally high, is moderated by several forms of social control, such as regulatory measures for the use, regulated price policy, promotional and advertising control, educational use of the media, among others. In these communities the problems stemming from alcohol use, despite the mentioned efforts to reduce them, have such an impact that situates alcohol among the third most important risk factors for health problems, causing huge social burden. Regarding intermediate-economy nations, it may be stated that among them the consumption of alcohol is scarcely regulated, and there is a dense set of factors facilitating the access, including for individuals of the lowest age ranges, implying that the average volume consumed is high and the patterns of consumption much more risky. The consequences do not dishonor this tragic conjunction of elements, resulting that alcohol is the most important risk factor in the determination of health problems, from which obviously the huge financial costs must be inferred. It is reasonable to state that the problems involved in the consumption of alcoholic beverages rise as countries develop and, at the same time, alcohol becomes one of the main limiting factors for social and economic development of these nations. The evidence demonstrated up to now, denotes a trend of worsening in the world situation, regarding the problems stemming from alcohol consumption, because large and populous regions are presenting rising figures for the risk fractions attributable to the use of alcohol, whereas the intake patterns remain stable or are worsening. Brazil is included in this context and demands interventions, which, may be said, are already delayed. The Russian experience in the period of Gorbachev, dealt with by Shkolnikov et al.⁸ is a demonstration of the efficacy of large-scale interventions for the control of alcohol consumption, in the sense of being capable of minimizing the negative impact of this product in the social and health environments.

Conclusions

The consumption of alcohol has an immense burden as a cause for ill-

Table 1 – Percentage distribution of 'DALYs' (per 1000 inhabitants) of the morbid consequences attributable to the consumption of alcohol and global DALYs – 2000 base year

TYPE OF DISEASE	MEN	WOMEN	TOTAL	ALCOHOL-RELATED 'DALYS' (%)
Pathologies in the Perinatal Period	.680	.550	1.230	0%
Malignant Neoplasias	3.180	1.021	4.201	7%
Neuropsychiatric Conditions	18.090	3.814	21.904	38%
Cardiovascular Diseases	4.411	-.428	3.983	7%
Other Non-obligatorily-notified Diseases (diabetes, cirrhosis, etc.)	3.695	.860	4.555	8%
Non-intentional External Causes	14.008	2.487	16.495	28%
Intentional External Causes	5.945	1.117	7.062	12%
Total burden of Alcohol-related Morbi-mortality (DALYs)	49.397	8.926	58.323	100%
TOTAL Morbi-mortality (Total DALYs)	755.176	689.993	1,445.169	Estimated data in 1990:
TOTAL DALYs Related to Alcohol in Percentage	6.5%	1.93%	4.0%	3.5%

SOURCE: World Health Organization – 2003

Source - World Health Organization - 2003

ness and for death in the world, being related, at the same time, to several negative social consequences. It constitutes an important cause of morbi-mortality for the poorest nations, as the third highest risk factor for health problems in most of the richest countries and as the main factor related to disease and death in the majority of the countries which pertain to the group of intermediate development.

The average per capita volume and the prevailing consumption patterns are important variables related to the harm provoked by alcohol, and are fundamental elements for the local epidemiological assessments and for more comprehensive surveys, and may direct prevention programs aiming to reduce the problems stemming from alcohol use.

The global burden of health problems related to alcohol consumption reached in 2000 an equivalent to 4% of all morbidity and mortality occurred in the planet in that year, indicating a rising trend, considering the estimated value for 1990 (3.5%).

Among the current main public health problems in Brazil, the severest is the consumption of alcohol, as this is the determining factor for more than 10% of all morbidity and mortality occurred in this country. Although further and more comprehensive studies are necessary to allow a clearer characterization of the alcohol-related social and health burden in Brazil, the available evidence suffices to situate as priority an agenda of public policies contemplating the elaboration of interventions for the social control of this product.

References

1. Babor T, Caetano R, Caswell S, Edwards G, Giesbrech N, Graham K, et al. *Alcohol: no ordinary commodity: The global burden of alcohol consumption*. Oxford University Press; 2003. p.57-92.
2. Edwards G. *A política do álcool para o bem comum/Griffith Edwards et al; translation Gisele Kleim-Porto Alegre: Artes Médicas; 1998.*
3. Room R, Graham K, Rehn J, Jernigan D, Monteiro M. *Drinking and its burden in a global perspective: policy considerations and options*. *Eur Addict Res.* 2003; 9(4):165-75.
4. Klingemann H. And Gmel G. *Introduction: Social consequences of alcohol - the forgotten dimension? In: Klingemann and Gmel. G (ed.) Mapping the social consequences of alcohol consumption, pp1-9. Dordrecht: Kluwer Academic Publishers. 2001.*
5. Laranjeira R. E Hinkly D. *Avaliação da densidade de pontos de vendas de álcool e sua relação com a violência. Rev Saúde Pública: USP.* 2002; 36(4): 455-

61.

6. Rehn J, Rehn N, Room R, Monteiro M, Gmel, Jernigan D, et al. *The Global Distribution of Average Volume of Alcohol Consumption and Patterns of Drinking. Eur Addict Res.* 2003; 9: 147 - 156.

7. Rehn J, Room R, Monteiro M, Gmel G, Graham K, Rehn N, et al. *Alcohol as a Risk Factor for Global Burden of Disease. Eur Addict Res.* 2003; 9:157-164.

8. Shkolnikov V, Mckee M and Leon D.A. *Changes in life expectancy in Russia in The mid-1990s. Lancet.* 2001; 357 :917-21

Correspondence

José Nino Meloni
Rua Lorena, 186, Condomínio Marambaia
13280-000 Vinhedo, SP, Brasil
E-mail: jnmeloni@uol.com.br