Country Profile on Alcohol in India
by
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1. INTRODUCTION

Large, underdeveloped, and economically poor, India comprises 2.4% of the world's land area and 15.5% of the world's population (953 million people). After independence from British rule in 1947, a federal democracy was established with a central government in New Delhi and 25 state governments. India remains multiethnic, multilingual (with 18 official languages), and multi-religious (with five major religions). Eighty-three percent of the national population is Hindu, 12% Islamic, 2% Christian, 2% Sikh, and 0.8% Buddhist. There is no state religion and citizens are free to practice their religion without restriction. Three-fourths of India's populace lives in rural areas, but this proportion has decreased over time. Nearly half are illiterate and more than a third live below the poverty line, defined as being unable to afford necessary food for survival. Overall, India remains poor, with a per capita Gross National Product of US$335 and about US$200 in per capita income. There is a marked economic disparity, with a large number of poor people and a few very wealthy ones. In between these extremes is the large, rapidly growing middle class, estimated to consist in more than 200 million people at present. Beginning in the early 1990s an economic structural readjustment programme was initiated which has led to liberalization of industrial licensing, privatisation of public industries, and promotion of imports and exports.

Although alcohol consumption has existed in India for many centuries, the quantity, patterns of use, and resultant problems have undergone substantial changes over the past 20 years. These developments have raised concerns about the public health and social consequences of excessive drinking. Alcohol-related data remain scarce in India, and so far there have been very few scientific studies. Even routine data collection on alcohol production and sales is difficult to obtain and collate. Significant regional, gender, and social class differences also pose serious limitations on the extrapolation of findings based on small samples. Nonetheless, in this chapter I attempt to describe the current state of alcohol consumption and associated problems in India. The available scientific literature is summarized to describe the situation and draw some conclusions. In so doing it has been necessary to make certain assumptions and estimates in order to fill in significant lacunae in information. A public health-oriented approach is adopted throughout.
2. HISTORICAL ASPECT

2.1 The Ancient and Medieval Periods

Beverages believed to contain ethanol are mentioned in ancient Indian literature dating back to the Vedic period around 2000 B.C. (Chopra and Chopra, 1965). Two varieties of drinks are described—soma and sura—along with their effects and the harms that might result from excessive consumption. Soma, the drink of the social elite, was credited with positive qualities. On the other hand, sura (a fermented beverage made from rice and sugarcane) was consumed by warriors to enhance their valour and courage, among other things. Soma receives no further mention in post-Vedic literature, but sura and its variants have remained a part of Indian literature ever since (Prakash, 1961). For example, South Indian literature contains descriptions of fermented palm sap drinks that may be similar to present day toddy (Dikshitar, 1951).

Alcohol was also an ingredient in many medicinal preparations in the traditional Ayurvedic medical system. Ancient Indian medical texts describe in detail the harmful effects of excessive or indiscriminate drinking on the mind and body. For instance, Charak Samhita (Anonymous, 1949), a 2000-year-old treatise on medicine, states that “if a person takes it in right manner, in right dose, at right time, and along with wholesome food, in keeping with his vitality and with a cheerful mind, to him wine is like ambrosia.” However, “to a person who drinks whatever kind comes in hand to him, and whenever he gets an opportunity, this very wine acts as a poison.”

Despite the knowledge and availability of alcoholic beverages, they were never a routine part of the diet in India. Strict rules and guidelines governed who could drink and under what circumstances. Manu, the ancient Hindu sage, strictly forbade drinking by Brahmmins, the learned ones. Members of other social classes were allowed to drink, but only on specific occasions (e.g. wars, religious and festive ceremonies). Abstinence was considered virtuous for the common people, but alcohol consumption by specific groups in a socially approved manner took place and was tolerated (Tekchand, 1972).

Although the Islamic tradition has stronger prohibitions against alcohol than the Hindu does, drinking was common among the Mughal emperors and their subjects (Singh & Lal, 1979). Soldiers were encouraged to drink habitually and other social sectors were allowed to join in mass drinking at festivals or other public functions. While it does not favour alcohol use, the Sikh religion tolerates drinking, especially by the military class. Therefore it comes as no surprise that Punjab—the traditional Sikh homeland—has one of the highest alcohol consumption figures in contemporary India. In contrast to these other religious traditions, the Buddhist and Jain religions strictly forbid alcohol use in any form and under any circumstance.

In sum, ancient Indian society had the knowledge of how to prepare beverage alcohol, but did not support routine alcohol use and regarded abstinence as a virtue for most people. Although alcohol never became a part of daily food and drink, its occasional use was permitted. The available evidence suggests that alcohol use did not pose a
significant health or social problem in ancient and medieval India. Further information on these historical aspects of drink can be found in Singh and Lal (1979), Mohan (1990), and Sharma (1996).

2.2 The Colonial Period

India remained under British rule for almost 200 years before gaining independence in 1947. This period of colonial rule saw a slow but steady rise in alcohol consumption, with significant changes in the beverages consumed, the pattern of drinking, and social attitudes toward alcohol use. Distilled beverages of a much higher alcohol content gradually replaced traditional fermented beverages. Better fermentation and distillation processes and the introduction of new packaging technology resulted in alcoholic beverages becoming mass-produced commercial items.

Improved transportation facilities contributed to wider alcohol availability everywhere in India. While this played a role in increasing alcohol consumption, there was a more fundamental change in the pattern of drinking. As conventional rules and guidelines for alcohol use weakened, drinking changed from ritualistic and occasional to become a part of routine everyday social intercourse and entertainment. This European pattern of drinking was accompanied by a change in attitude toward alcohol, which came to be regarded more positively.

Since the British were more familiar and comfortable with alcohol than with other intoxicants such as cannabis and opium, they promoted alcohol use and tried to control local cannabis and opium consumption (Saxena, 1997). Strict laws against the latter substances also contributed to a shift in popular means of intoxication toward beverage alcohol. Besides giving licenses to big distilleries, the colonial government also allowed local production of liquor. The cumulative result of these developments was a gradual increase in alcohol consumption so that when India gained her independence in 1947 alcohol occupied a definite place in many Indian social strata and was associated with a Western way of life (Wig, 1994). It is noteworthy that alcohol prohibition was among the demands voiced by India’s native leadership and prohibition became one plank upon which the independence struggle was fought.

3. TYPES OF ALCOHOLIC BEVERAGES AVAILABLE

Because India has great variety in topography, climate, vegetation, culture, and traditions, it is unsurprising that hundreds of kinds of alcoholic beverages are made and consumed. All of them, however, can be grouped into the following four broad categories.

3.1 India-Made Foreign Liquor (IMFL)

This category, created for revenue purposes, consists in Western-style distilled beverages such as whiskey, rum, gin, vodka and brandy. These are made in India under
government licenses and the maximum alcohol content allowed is 42.8%. Whiskey is by far the most popular drink in this category, with hundreds of brands available, at least 20 of which have an all-India presence. Several dozen brands of rum, gin and brandy are also available. Wines fall under this category of liquor too, although until recently wine production and consumption in India was almost nonexistent. Some wines are now made in the country, and small amounts of wine are imported for select consumers.

3.2 Country Liquor

These distilled alcoholic beverages are made from any cheap raw material available locally, e.g. sugarcane, rice, or coarse grains. Country liquor is produced in licensed distilleries and sold from authorized outlets within the same district. Common varieties of country liquor are arrack, desi sharab, and tari (toddy). Excise duties are paid, but since production costs are low the retail prices are also low. The licensing system and some governmental monitoring of the production process ensures a uniformity in alcohol content (around 40%) and basic safeguards against adulteration with other harmful intoxicants. Northern and western India are sugar-producing areas, and a large amount of molasses is available in these states at a very cheap price. Consequently, molasses is the main raw ingredient for country liquor there. In south India, coconut and other palms are used for the same purpose. In addition, inexpensive grains are used for country liquor all over India.

3.3 Illicit Liquor

Besides licensed distilleries, a number of small production units operate clandestinely. The raw materials they use are similar to those in country liquor, but since they evade legal quality controls the alcohol concentration in their products varies and adulteration is frequent. It is common to find samples containing up to 56% alcohol. One dangerous adulterant is industrial methylated spirit, which occasionally causes mass poisoning of consumers who lose their lives or suffer irreversible eye damage. Since no government revenues are paid, illicit liquor is considerably less expensive than licensed country liquor, and thus finds a ready market among the poor. In many parts of India illicit liquor production and marketing is like a cottage industry, with every village having one or two illegal operations. In addition to the commercial production of illicit liquor, home production for personal consumption also is common in some parts of the country. For example, in a survey of Punjabi alcohol users Lal and Singh (1978) found that 45% of them reported home liquor production for their own use. Home fermentation and distillation are also common in several tribal areas.

3.4 Beer

Beer is a relatively recent arrival in India, which remains largely a spirits-consuming society. However, beer production and consumption have grown rapidly. Indian beer is manufactured in large licensed breweries and is available under more than 60 brand
names whose alcohol content ranges from 5% to 9%. Beer is available mostly in bottles, but cans have been introduced recently. Since for the same amount of alcohol the price of beer is much higher than distilled liquor, beer is a drink for the middle and upper economic classes. Beer also has become a favourite beverage of the urban young.

4. THE ALCOHOL INDUSTRY

Based on beverage type the Indian alcohol industry has three prominent sectors: the IMFL and beer sector, the country liquor sector, and the illicit liquor sector. The structure, marketing and sales practices, and economic issues differ for each of these.

The IMFL and beer sector is the most visible part of the alcohol industry, boasting a few large companies with multiple production units and nationwide marketing networks. These companies control much of the market, have been present in India for several decades, and have established several brand names regionally or nationally. These companies aggressively advertise and promote their brands and their corporate identities, and constantly monitor and protect their products’ market shares. They are also cash rich, since profit margins are high in this industry.

Beginning in 1992 under liberalized industrial laws, some Indian alcohol companies developed collaborative ties with international corporations. Joint ventures have been established to use local production capacity to manufacture international brands under a technology transfer and licensing system. These joint ventures have served a dual purpose: They have brought international alcohol brands to India, and they have utilized the existing production and marketing strengths of Indian industry. Hence they have been mutually beneficial. Nearly all of the major transnational alcohol companies now have a presence in India and many internationally popular brands of whiskey and beer have become available. These have been accepted well by the upper middle and higher socioeconomic classes, who can now purchase these famous brands locally rather than having to carry them back from trips to other countries or to buy them from illegal importers (Saxena, 1994a). The price of these products remains high, but since they carry high social prestige value there is good demand in this premium range.

The IMFL and beer industry spends much effort and money to promote and advertise their brands. Since direct advertisement of liquor is not permitted in the print and electronic media, the industry has found methods to advertise indirectly (Saxena, 1994a). Alcohol brands are advertised in the form of same or similarly named other products (e.g. mineral water, soda, and playing cards) made by the same company. The advertisements display the alcohol product prominently. In addition, beverage ads have become common on satellite cable television beamed to India from neighbouring countries. IMFL and beer producers also financially sponsor major sporting events that attract sustained media attention, including live television coverage of the event. With its new international linkages, the Indian alcohol industry has also gotten into the entertainment and fashion worlds. It is now common for a liquor company to sponsor a fashion show or a musical event. Hence the Indian IMFL and beer industry has
initiated a high level of sustained marketing and promotional activities, and these have become especially aggressive in the 1990s.

In contrast to the IMFL and beer sector, the country liquor industry is more decentralized. There are many regional producers and most brand names have only a local presence. These producers do not indulge in advertising or sponsorships since manufacture and retailing is under local licensing with little competition. They more or less have a captive market in their area and their low costs ensure high sales. Profit margins are high, and it is widely believed that a part of the profits goes to the licensing authorities.

The illicit alcohol industry also has a local presence and is run with the help of local criminals. They either operate this industry themselves or provide protection for a price of those who do. It is believed that regular payments are also made to law enforcement authorities. Illicit liquor is bought mainly for its very low price, and hardly any marketing is necessary. The whole operation is kept low-key to avoid visibility and possible legal action.

The Indian alcohol industry produces a large amount of revenue for the government. It has been estimated that direct collections of excise and sales taxes are approximately US$5 billion per year for the country as a whole. This money goes largely to state governments, and some states derive as much as 10% of their total revenues from the alcohol industry. In addition, the industry contributes indirectly by promoting entertainment, travel, tourism, and sports, all of which are independently taxed at high levels. The alcohol industry also is a source of employment, and it is estimated that about 1.5 million people work directly in the production and sale of alcoholic beverages in India. Besides the generation of legal revenues for the government, the alcohol industry is thought to create an approximately equal sum in “black money” that takes the form of bribes, protection payments, and profits from illicit alcohol. This gives the alcohol industry enormous political power and clout, which may be used to help influence and maintain government policies beneficial to the industry.

5. PRODUCTION AND AVAILABILITY OF ALCOHOL

5.1 Production and Availability Estimates

National production and availability data are very difficult to obtain in India, since there is no single agency responsible for this task. The production and sale of alcohol is a state, not a federal, responsibility, and so the 25 different state excise departments keep the records. Unfortunately, these are not routinely collated at the national level. The Ministry of Chemicals maintains data on alcohol production, and has a separate head that oversees potable alcohol, but there are gaps in their information because of non-reporting by some states. The Ministry of Welfare is responsible for tracking alcohol-related problems, but it does not focus on the amounts of alcohol consumed. The
Indian Distillery Association keeps data on licensed production from industrial sources, and claims to have accurate figures.

The figures for distilled spirits presented in table 1 below have thus been derived from several different sources and crosschecked against each other. They are based on an estimated average alcohol content of 42.8% for IMFL and 40% for country liquor. Beer and wine are not included in this table. As can be seen, the data are incomplete, and the apparent decrease from 1991-1992 to 1993-1994 is inexplicable. Perhaps it is a result of gaps in reporting by some states, rather than an actual decrease in production.

Table 1: Annual Distilled Spirits Production in India, by Year (April to March)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AMOUNT OF ABSOLUTE ALCOHOL PRODUCED (IN THOUSANDS HECTOLITRES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982-83</td>
<td>2,862.55</td>
</tr>
<tr>
<td>1983-84</td>
<td>3,104.72</td>
</tr>
<tr>
<td>1984-85</td>
<td>3,310.64</td>
</tr>
<tr>
<td>1985-86</td>
<td>3,407.49</td>
</tr>
<tr>
<td>1986-87</td>
<td>3,204.80</td>
</tr>
<tr>
<td>1987-88</td>
<td>3,432.48</td>
</tr>
<tr>
<td>1988-89</td>
<td>4,190.45</td>
</tr>
<tr>
<td>1989-90</td>
<td>no data</td>
</tr>
<tr>
<td>1990-91</td>
<td>no data</td>
</tr>
<tr>
<td>1991-92</td>
<td>4,895.00</td>
</tr>
<tr>
<td>1992-93</td>
<td>3,467.00</td>
</tr>
<tr>
<td>1993-94</td>
<td>3,626.00</td>
</tr>
<tr>
<td>1994-95</td>
<td>6,056.00</td>
</tr>
<tr>
<td>1995-96</td>
<td>7,888.04</td>
</tr>
</tbody>
</table>

The following unconfirmed data are available on beer production in India (see table 2). Wine is not included in this table either, but wine consumption in India is negligible and would not appreciably alter the quantities shown.

Table 2: Annual Beer Production in India, by Year

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AMOUNT OF ABSOLUTE ALCOHOL PRODUCED (IN THOUSANDS HECTOLITRES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>17.8</td>
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<tr>
<td>1980</td>
<td>66.6</td>
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<tr>
<td>1990</td>
<td>86.2</td>
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<tr>
<td>1991</td>
<td>96.1</td>
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<tr>
<td>1992</td>
<td>100.5</td>
</tr>
<tr>
<td>1993</td>
<td>136.1</td>
</tr>
</tbody>
</table>
India has recently permitted importation of beverage alcohol for commercial purposes, but the figures for these are unavailable. Indian nationals returning from abroad as a part of their personal baggage bring in significant amounts of alcoholic beverages. In addition, it is believed that illegal imports may contribute to overall consumption in India as well. These are mostly premium international brands of spirits that are consumed by the rich. India has negligible alcohol exports to other countries.

As has been described above, a good deal of alcohol is produced illegally. While the quantities of this vary from state to state and from time to time, illicit and home production, together with illegal imports, probably are equivalent to about half again the nation's legal production. Taking the figure of 8000 thousand hectolitres (800 million litres) of absolute alcohol as the annual legal production, an estimate of 1200 million litres of annual consumption seems likely.

5.2 Per Capita Consumption

Based on an estimated national consumption of 1200 million litres of absolute alcohol in 1996, and a total national population of circa 953 million in that same year, a per capita figure is obtained of approximately 1.2 litres. This seems low when compared to figures from developed countries, but since drinking is very unevenly distributed in Indian society it is necessary to make some adjustments to this figure in order to arrive at a more accurate idea of the amount drunk by an average drinker.

Since 38% of the population is under age 15 years, adult (over age 15) per capita consumption comes to almost 2 litres. If women are excluded, among whom the abstinence rate is >95%, then adult male per capita consumption becomes 3.5 litres. Several surveys (described below) demonstrate that even among adult men about 60% abstain. Hence, if the per capita consumption figure is recalculated for adult male drinkers alone it rises to approximately 9 litres of absolute alcohol per annum. This compares well with estimates by Lal and Singh (1978) based upon sales figures and survey results from Punjab. They estimated the per capita consumption of drinkers at 10 litres, but Skog (1980) reanalysed their data and produced an estimate of 12.5 litres. These figures are of the same order as those for many European countries.

In light of these observations India should be viewed as having a minority of heavy drinkers within a majority of abstainers, rather than as having a low level of overall drinking as the gross national per capita consumption figure suggests. As will be shown below, this pattern has some serious public health implications.

6. PREVALENCE AND PATTERNS OF ALCOHOL USE

No nationwide systematic epidemiological surveys have been conducted on alcohol use, but a number of smaller studies have been completed in different regions whose results are quite consistent. The available studies can be sorted into psychiatric surveys, general population drinking surveys, and special population drinking surveys.
6.1 Psychiatric Surveys

Many psychiatric morbidity surveys have been conducted on India’s general population, and prevalence data for alcohol dependence have been obtained along with those for other mental disorders. In one of the earlier studies Surya et al. (1964) surveyed 510 households (2731 individuals) in southern India and found the prevalence of “alcoholism” to be 3.6 per 1000. In another part of rural southern India, Gopinath (1968) reported a prevalence of 2.36 per 1000. Another study in a neighboring state used a stratified random sample of about 2900 individuals and observed an ICD-8 diagnosis of alcoholism to be 4.8 per 1000 (Varghese et al., 1973). In contrast to these studies, Dube and Handa (1971) found that 1.38% of the population they studied in northern India habitually abused alcohol. A similar figure of 1.3% was produced in a small survey in eastern India by Elnagar et al. (1971).

These psychiatric surveys were carried out to discover the prevalence of mental illnesses in general, and the screening procedures used were designed to detect only the most severe cases of alcohol dependence. However, these studies created an awareness of alcohol-related problems and paved the way for more focused investigations of alcohol use.

6.2 General Population Drinking Surveys

Several general population studies have examined the prevalence and pattern of alcohol use. Deb and Jindal (1975) found that 74.2% of adult men in rural Punjab had used alcohol at least once from among a sample of 1251 individuals. In a similar survey from the same region Mohan et al. (1978) reported that 32.9% of all adults had used alcohol at least once during the past year. Lal and Singh (1978) studied about 7000 people from rural Punjab and 25.6% of them drank alcohol, while the rate of drinking in males over age 15 years was nearly 50%. Sethi and Trivedi (1979) surveyed 2010 general population adults from northern India and discovered that 21.4% had abused alcohol at least one drug, usually either alcohol or cannabis. Varma et al. (1980) questioned 1031 people from both rural and urban areas of northern India and reported that 60% of these adults had never drunk alcohol. The prevalence of drinking once or more in the previous year was 23.7%, and of past use, 16%. In yet another study among a rural general population, Mohan et al. (1980) found that 58.3% of adult males drank, while only 1.5% of adult females did so. Probable dependence among current male drinkers was 3.9%, and per capita consumption was estimated at 6.62 litres of absolute alcohol.

In a methodologically sophisticated general population study in western India, 24.7% of adults drank (Sundaram et al., 1984). The rates for males were 36.1% and 13.4% for females. Probable alcohol dependence rates were 3% (3.6% for males and 0.5% for females). Mathur and Chandra (1989) in a southern India study found 35% of the men to be current drinkers. The drinking prevalence was higher among those of lower socioeconomic status. Chakravarthy (1990) reported alcohol use to be from 26% to 50% among rural southern Indian males, and the prevalence was higher among those who were illiterate. Ponnudurai et al. (1991) used the Michigan Alcohol Screening Test.
(MAST) to estimate problem drinking in a large city of southern India and found a prevalence of 16.7% among males. In another large community study of approximately 400,000 people, Bang and Bang (1991) estimated that about 25% of their sample were drinkers. Mohan et al. (1992), using rapid survey techniques, assessed substance abuse in poor urban areas of Delhi to be 26%, a majority of whom abused alcohol (with or without tobacco).

6.3 Special Population Drinking Surveys

Some studies have looked at alcohol use among special populations (e.g., students). For example, Mohan et al. (1979) conducted one of the earlier studies among high school students and found that 12.7% were drinking. Another early study by Dube et al. (1978) among university students noted that the prevalence of ever having used alcohol was 32.6%. Varma and Dang (1980) reported a similar prevalence of 31.6% for drinking by non-student youth. A large study of college students from seven Indian cities found that between 9.3% and 15.1% were current drinkers (Mohan, 1981). The positive features of this multicentre collaborative study were its methodological strengths and the consistency of the results across cities.

Unlike the relatively low figures for drinking by the general university student population, medical students have shown a higher drinking prevalence of from 40% to 60% (Sethi and Manchanda, 1977; Singh, 1979). There are no data on drinking by industrial workers, but a study by Gangrade and Gupta (1978) mentioned that nearly 10% of the factory workers studied near Delhi drank alcoholic beverages.

The findings of these various studies must be treated with caution because their samples are relatively small, they are all regional (rather than nationwide), and the operational criteria for "ever used," "currently use," and "dependent" differ considerably. However, some conclusions can still be drawn. The studies generally agree that 60% or more of the adult population is abstinent. This contrasts markedly with most developed countries, where complete abstinence rates are much lower. A second common finding is the striking gender difference, with women showing drinking rates of fewer than 5% in most of the studies, compared to much higher rates for men.

No clear associations of drinking with socioeconomic categories are available for India, but indications suggest that drinking may be more prevalent among the lower classes and the poorly educated. Drinking is still much more prevalent among men than females, although some evidence indicates that educated urban females are being initiated into drinking. Clinic data also suggest that more young people now indulge in heavy drinking than before. In this regard it needs to be emphasized that the available figures are mostly for "ever used" or "used within the last year," and do not necessarily indicate problem drinking. Alcohol dependence may be present among 1% to 2% of the adult population in India.
There is a need for national level epidemiological studies of drinking, alcohol abuse and alcohol dependence. These studies should be more advanced and employ uniform instruments and standard, internationally accepted criteria and definitions so that comparisons can be made across regions and sociodemographic groups within India and with other countries.

7. ALCOHOL-RELATED PROBLEMS

It is probable, given equal amounts of drinking, that developing countries like India experience more problems than developed countries (Saxena, 1997). Among the reasons for this may be such things as a highly skewed distribution of drinkers in the society, the prevalence of nutritional and infectious diseases, economic deprivation, more hazardous and accident-prone physical environments, and a lack of any organized support system. Although conclusive scientific evidence for alcohol-related health and social problems is lacking for India, there are enough indications in the available literature to infer that these are substantial. The rapid rise in alcohol consumption in recent years has increased the likelihood of further growth of these problems in the years to come.

7.1 Health Problems

Few scientific studies from India deal with the health problems linked to alcohol use. Most of the extant studies are hospital-based and can only be used to derive population-level problems in an indirect way.

Mortality

In a four-to-five-year follow-up study of patients diagnosed as alcohol dependent after being examined in a hospital, Sharma and Murthy (1988) found that 11.3% of those who could be traced had died. In another study, Desai (1989) documented a mortality of 5.5% during an 18-month follow-up among hospital patients with alcohol dependence. Since the majority of these patients were middle-aged or younger, these are high mortality figures.

Liver Disease

Cirrhosis figures are not systematically recorded in India, and even if they were they might not correlate with alcohol use, since most such cases result from other causes, e.g. viral hepatitis sequelae, poisons, and other drugs. A review of Indian studies during the period from 1933 to 1975 reveals that among biopsy-proven cirrhosis cases, between 0.0% and 66% (cumulative mean = 16%) had alcoholism (Bhagvat and Islam, 1980). Another study among patients who presented with cirrhosis found only a minority of them to have had excessive alcohol intake (Rajwanshi et al., 1985). However, for all of these studies, since drinking history often is not elicited or reliably recorded, these proportions may be underestimates.
Studies of heavy drinkers have revealed a much higher prevalence of liver disease. Based upon liver biopsies from 41 clinic alcoholics from southern India, Shankar et al. (1986) reported a normal liver in only 12%, while hepatitis was present in 56.1%, fatty liver in 14.6%, and cirrhosis in 9.7%. Another investigation of 49 alcohol dependent patients from northern India revealed similar findings: normal 12.2%, hepatitis 44.9%, fatty changes 34.7%, and cirrhosis 8.2% (Sarin et al., 1988).

**Cancer**

There has been much concern that heavy drinking may have increased the incidence of certain cancers. Although at about 75 per 100,000, the overall cancer incidence in India is lower than in most developed countries, oral cavity and esophageal cancers are particularly common (Indian Council of Medical Research, 1992). Confirming evidence links these cancers with tobacco chewing and smoking, but some studies have also pointed out the contributory role of drinking alcoholic beverages. For instance, Jussawalla (1981) was one of the first to draw attention to alcohol’s role in the high incidence of esophageal cancer in India. Subsequently, Rao et al. (1989) conducted a case-control study of 503 esophageal cancer patients and concluded that, along with tobacco use and some dietary factors, drinking alcohol increased the relative risk of cancer. In another case-control study on upper alimentary tract cancers, Notani (1988) calculated the adjusted odd ratio of alcohol consumption in the under age 60 years group to be between 1.5 and 2.7 for esophageal cancer, 1.3 and 3.6 for oral cavity cancer, and 1.9 and 5.4 for pharyngeal cancer. A synergistic effect between alcohol and tobacco use was observed.

A general population study of more than 10,000 individuals from Kerala State showed the effects of tobacco and alcohol use on the incidence of leukoplakia (Gupta, 1984). The prevalence was significantly higher among regular (5.7%) and occasional (3.9%) drinkers than among non-drinkers (2.9%). Moreover, the figures were higher among drinkers in each age group and in each tobacco habit category, clearly demonstrating alcohol’s independent effect. Sankaranarayanan et al. (1989) investigated 187 cases of gingival cancer, along with 895 controls, to show a significant positive association with alcohol use ($p<0.001$), as well as all forms of tobacco use. A recent study by Rao et al. (1994) on 713 oral cancer patients from Bombay reported a relative risk with alcohol use of 1.42. An association of oral carcinoma with drinking alcohol has also been demonstrated in patients older than 60 years by Kuriakose et al. (1992). In a laboratory-based study, Zariwala and Bhide (1994) reported that some samples of commercial country liquor in India led to mutagenicity, raising the possibility that ingredients in these beverages may be carcinogenic. It seems apparent that drinking contributes to the higher prevalence of some kinds of cancer in India, although the exact public health impact of this remains to be ascertained.
Accidents and Injuries

Alcohol is held responsible for a substantial proportion of accidents and injuries in India, including road traffic crashes (with motorized and other kinds of vehicles), pedestrian injuries, farm machinery accidents (e.g. thresher, tractor equipment), and household accidents. Unfortunately, scientific studies are unavailable to document this, but estimates made by the responsible agencies paint an alarming picture. The National Road Research Institute surmised that a third of all drivers on intercity roads were under the influence of alcohol, and that a quarter of all major traffic crashes is alcohol-related. The Agricultural Research Institute estimated that half of all farm machinery accidents that led to loss of limb or life were related to alcohol, with or without the presence of other drugs. Increased traffic congestion on roads, poor vehicle and road maintenance, and the presence of unlicensed and unskilled drivers on the roads are contributory factors, but alcohol consumption certainly adds another potent influence to India's high accident rates.

Neuropsychiatric Disorders

Alcohol seems to play a significant part in precipitating many neuropsychiatric disorders, including cognitive deficits, epilepsy, psychiatric emergencies, depression, and suicides. Unpublished data from Chennai (a city in Madras State) and Bangalore reveal that a majority of clinic patients who sought help for chronic alcohol problems had neuropsychological deficits. Data from Delhi corroborate this and also demonstrate a high prevalence of epilepsy in such persons. Narang et al. (1992) found a correlation between cognitive impairment and duration of drinking among 30 clinic patients who were alcohol dependent. A study of psychiatric emergencies in a large general hospital showed that 17.6% of these were related to drink (Adityanee & Wig, 1989). Alcohol dependence also is a common reason for inpatient referral to a psychiatric unit (Srinivasan et al., 1987).

The death rate from suicide in India per 100,000 grew from 6.8 to 9.9 between 1984 and 1994, and it is believed that this is at least partially related to the increase in alcohol consumption during this same period. Between 5% and 10% of males who attempt suicide are under the influence of alcohol (Adityanee, 1986), and a much larger number of both male and female attempted and completed suicides may be related to excessive drinking.

Among their psychiatric inpatient referrals, major hospitals have reported a rise in alcohol-related problems from 1% to 20% over the last 30 years (Wig, 1994). Babu and Sengupta (1997) showed that problem drinking was present in 14.6% of general hospital inpatients, although only a fourth of these were referred for psychiatric treatment.
Health Effects of Impurities and Adulterants in Alcoholic Beverages

A lack of quality controls results in many impurities and adulterants being present in or added to illicit alcoholic beverages. These include heavy metals like lead and arsenic (Narang et al., 1987), organic solvents, and sometimes sedative drugs like benzodiazepines and barbiturates. However, the most dramatic effects are seen when methyl alcohol (usually in the form of industrial spirit) is added. This almost always leads to deaths or serious organ damage, including loss of eyesight. An estimated 300 deaths per year occur in India from this type of poisoning, and these incidents get covered regularly in national newspapers. One such poisoning outbreak has been discussed in the medical literature (Ravichandran et al., 1984), and the pathological findings of such cases have been reported by Mittal et al. (1991).

Other Health Effects

Numerous other negative health consequences derive from or are exacerbated by excessive drinking. Nutritional deficiencies and infections are two common examples. Unpublished data from a Delhi hospital reveal that from 25% to 33% of alcohol dependent patients from poor families also suffer from pulmonary tuberculosis. HIV infection has increased at an alarming rate in India (Pandav et al., 1997), and alcohol is thought to contribute to this, as well as to the spread of other sexually transmitted diseases. A community-based survey of 450 sex workers in a large Indian city found that about 81% of them drank alcohol regularly and about 80% had a sexually transmitted disease of some kind (Chakraborty et al., 1994; Pal et al., 1994). Regular alcohol consumption has been identified as a significant risk factor for hypertension in India (Gopinath et al., 1994), and a rural community study found drinking to be significantly related to mean blood pressure (Joshi et al., 1993).

7.2 Social Problems

Excessive drinking produces a variety of closely interrelated social problems in India. For ease of description these have been divided into the following broad categories.

Violence and Crime

Violence within and outside the home is frequent in India and a substantial proportion of it is believed to be alcohol-related. Wife beating and child abuse under the influence of alcohol are common, and street brawls and group violence also happen often after drinking. Clear statistics are not available, but it appears that about half of serious violent crime is related to alcohol use, although alcohol may not be the only factor that contributes to the criminal act.
Workplace Effects

Heavy drinking affects work performance in a number of negative ways. When compared to their sober counterparts, drinkers are more frequently absent, are less efficient, have more accidents at work, and also show maladjustment with other workers which leads to overall decreased performance. A study by Senthilnathan et al. (1984) demonstrated maladjustment among alcohol-dependent workers when compared to non-drinkers. Indian industry has recently begun to recognize the problems related to alcohol and some programmes have been instituted to help excessive drinkers, although most of the work force still does not have access to these.

Economic Effects

While alcoholic beverages are inexpensive in India, their purchase may still require a substantial portion of a poor person’s meagre income. With one in three people in India falling below the poverty line, the economic consequences of expenditures on drink attain special significance. Besides the money spent on alcohol, a heavy drinker also suffers other adverse economic effects. These include fewer wages (because of missed work and lowered efficiency on the job), increased medical expenses for illnesses and accidents, legal costs of drink-related offences, and decreased eligibility for loans. Most individuals with severe alcohol dependence find it difficult to reduce their expenditure on drink, and hence their families often must do without essential necessities. Although the overall economic effect of alcohol use at the national level has not been estimated, it is likely that it represents a substantial proportion of India’s national income.

Family Effects

Excessive drinking by one or more family member results in several negative consequences for others in the family, especially for the wife and children of a male drinker. These effects are particularly serious for poor families. As has been mentioned above, much of the family income may be used to buy alcohol, wages may decline, and the drinker may eventually lose his job. In such situations the wife and children are forced into work, often in low-paid, hazardous jobs. Children may be unable to continue their schooling and may also suffer from nutritional deficiencies because there is not enough to eat at home. Wife and child battering are common, which lead to physical and mental trauma. Failure of the man to use contraceptive methods often leads to unwanted pregnancies, further increasing family size. These factors contribute toward greater poverty, often to the point of destitution.

Strong family ties and social disapproval of divorce save many of these families from a formal breakdown, but the prevalence of intermittent or prolonged marital separation, as well as suicides, in heavy drinking families is high. Problems faced by housewives of alcoholic men have been studied scientifically by Ganilur et al. (1983), but the many
descriptive accounts by the lay press offer more vocal testimony of these phenomena. Wives of alcoholic men show a high degree of depression (Devar et al., 1983) and of suicide (Ponnudurai & Jayakar, 1980).

8. CURRENT RESPONSES

8.1 Legislation and Policy

India is one of the rare countries where prohibition has been incorporated into the national constitution as one of the directive principles of state policy. Article 47 of the Constitution of India reads that “the state shall endeavour to bring about prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health.” However, the various national governments that have been in power since independence have followed this policy inconsistently. Alcoholic beverage production and sale is controlled by the states, and not the federal government, with a result that there are different, often contradictory, policies among the 25 states. Gujarat State, in western India, the birthplace of Mahatma Gandhi, has had complete prohibition continuously since 1947. But most other states have promoted the production and sale of alcohol, fulfilling the constitutional requirement of prohibition by token symbolic measures such as designating some days in the year as “dry days.” Given this situation it is hardly surprising that the quantity of alcohol consumed has increased rapidly.

The main reason for ignoring the constitutional prohibition is the large amount of revenue that the state governments derive from alcoholic beverages. As mentioned above, the proportion of revenues from alcohol is considerable, with some states obtaining as much as 10% of their total revenues from this source. Legislative debates have repeatedly focused on this, with government ministers expressing their unwillingness to forego these monies despite the felt need to reduce alcohol availability. Alcohol producers and retailers also have lobbied to maintain policies favourable to them, using their money and political clout to get their way.

Quite recently, three states (Tamilnadu, Andhra Pradesh and Haryana) have implemented total prohibition. Political parties who won elections on this issue, and who—upon coming to power—implemented this policy took these decisions. These examples show that increased attention is now paid, as part of electoral calculations, to those social sectors such as women and the rural populace who have opposed alcohol. Even so, economic difficulties have already forced Andhra Pradesh to partially repeal its prohibition policy, and debates over the positive and negative results of prohibition are ongoing in Haryana.

Beyond the rather drastic step of prohibition, governments have a number of other policy options at their disposal to reduce alcohol consumption and alcohol-related problems, but these are not used in any meaningful way. Laws ban the sale of alcohol to minors, but they are not strictly enforced. Retail licenses are granted increasingly by
open auction, thus fetching a high price. This, in turn, forces retailers into promotional activities so as to increase their sales and profits. Licenses for the production of beverage alcohol, especially beer, are now granted in large numbers. Public drinking is banned, but action usually is not taken against offenders unless a fight breaks out. One powerful tool governments have is the tax levied on alcoholic beverages, which eventually affects retail price and therefore consumption levels. The actual price of beverage alcohol in most of India has decreased in real terms over the last 20 years. Governments have resisted tax increases on alcohol in order to maximize their revenues from higher sales. This is especially true for the cheapest alcoholic beverages, where there is believed to be considerable price elasticity.

A health warning printed on alcohol containers is mandatory and this legal provision is followed. But such warnings are of no help to the large proportion of illiterate consumers who cannot read them. No units or other measures of alcohol are mentioned on the containers. Liquor advertisements are banned from the print and electronic media, but as discussed above, liquor companies have found ways to get around these rules, including surrogate advertising, sponsorship of sports and other events, and satellite television. The net result is a consistent level of high-pressure promotion of premium and middle sector beverages.

Driving a vehicle with a blood alcohol level of more that 100 mg percent is a crime, but a lack of proper measuring equipment assures that only the obviously drunk are caught. In any case, police are too busy investigating more serious crimes to give much attention to such "minor" infringements of the law.

In recent years the Indian government has relaxed rules concerning alcoholic beverage imports, along with those for the local production of foreign brands under collaborative agreements. This has provided an unprecedented opportunity for multinational alcohol producers to establish themselves in India. Not only is this likely to increase alcohol sales in India, but it also will give Western-style drinking even more social legitimacy and a more positive image than before. These policy decisions completely disregarded public health considerations.

8.2 Prevention Efforts

The Ministry of Welfare is primarily responsible for preventing alcohol consumption. Among its many other responsibilities (e.g. the tribal and lower castes, women, the disabled, and the elderly), substance abuse has been relegated to a low priority. Whatever efforts are made are targeted more toward illegal drugs and less toward alcohol. In practical terms, alcohol prevention programmes amount to media advertisements and the financing of some nongovernmental organizations to operate counselling and rehabilitation centres. Most of these centres are located in urban areas, leaving large areas of rural India unserved by any organized activity in this field. At present, preventive education does not target commercially inspired media stories on controversial and potentially harmful suggestions for "sensible drinking" or "drinking for your heart" (Saxena, 1994b), with a result that these go unchallenged.
8.3 Treatment Facilities

Treatment falls under the Ministry of Health. Over the last 20 years a number of drug and alcohol detoxification centres have been set up in all major regions of the country. While these have been established under the enhanced threat of illegal drugs, they have also provided integrated management to individuals requiring help for alcohol problems. These facilities are available for no or a very small fee and offer detoxification and follow-up care. Some of the larger centres provide specialized psychological and investigative support. These centres also run community extension clinics, where treatment facilities—usually domiciliary—are provided within the community. Although these centres serve a very useful role in the treatment of alcohol dependence and alcohol-related problems, they are grossly insufficient to cover even a small part of the population that needs help. It has been estimated that there are fewer than 2000 beds for drug and alcohol-related problems, which is a minuscule number for the several million individuals who need such assistance in India. Private medical facilities have somewhat filled this gap, but they are so expensive that only a few wealthy patients can use them. These services are also completely concentrated in the large cities.

The detection and treatment of alcohol-related problems in health care facilities is extremely poor. Health care workers under the supervision of doctors run primary health care in rural areas. Awareness of alcohol problems and skills in the recognition and treatment of them at a primary level is highly deficient. Some training programmes to improve the skills of primary care personnel in this field have begun, but in the absence of follow-up support or monitoring they have not had much impact on the services rendered.

8.4 Research Activities

Little research was conducted in India on alcohol-related problems until the early 1970s. Subsequently, isolated studies have been completed, mainly epidemiological or on hospital patients. These studies have documented the extent of alcohol problems and also have conducted treatment trials on those seeking help. Some of these studies have been briefly reviewed above. During the 1990s, more organized efforts have been mounted to investigate the causes, manifestations, and management strategies suitable for the alcohol dependent. However, the focus is still on the heavy drinking dependent individual, and the orientation is still medical. Psychosocial research remains scarce and the public health model is missing.

One reason for the lack of good research is inadequate financial support. Alcohol does not seem to compete well against other pressing health and disease priorities. The Indian Council of Medical Research has provided some funds, but has yet to establish a centre fully devoted to this area.
8.5 Community and Nongovernmental Activities

Spontaneous community action on socially relevant issues in poor developing countries like India is rare, and alcohol was not on the community action agenda until about 10 years ago. But in the past decade a number of movements have sprung up in opposition to excessive drinking. Perhaps the best known of these is the anti-alcohol action by rural women in Andhra Pradesh (Saxena, 1994a). These poor illiterate women had tolerated excessive drinking of country liquor by their menfolk for a long time. This drinking led to less time spent on farming, less money, and frequent episodes of domestic violence. In the early 1990s women of one village organized themselves and picketed the local liquor vendor. They also ostracized the drinking men and finally were able to force the district administration to shut down the liquor shops. Observing the success of these women, women in other villages joined the movement and finally the state government was persuaded to declare prohibition throughout the state. Inspired by this success, many other groups—mostly led by women—have resorted to direct action, but so far they have not had much success. Even in Andhra Pradesh, the state government has now had to partially rescind prohibition due to the economic losses from no alcohol sales.

Some nongovernmental organizations have entered the alcohol field and have been supported with government finances. They have provided counselling and rehabilitative services, but their impact has yet to be felt nationally.

9. CONCLUSION

Alcohol has been used in India for a very long time, but the amounts consumed and problems associated have increased in recent years. Distilled alcoholic beverages are the ones drunk most frequently, although beer has become more popular among the young. Besides licensed beverages, illicit alcohol is widely available and may amount to half again the quantity of legal alcoholic beverages. The recent economic liberalization policy has allowed multinational liquor brands entry to the Indian market, which may further increase the quantities of alcohol consumed.

Although most of the population is abstinent, available evidence points to high levels of drinking with associated health and social problems among those who do drink. These have already created serious public health problems and they also impede the development of poorer regions of the country. Policy responses to date from the federal and state governments have been inadequate and inconsistent, resulting in the unopposed promotion of alcohol in most of the country, while a few states maintain partial or complete prohibition. Prevention programmes and treatment facilities are wholly insufficient to meet India’s needs. It can be anticipated that alcohol use and related problems will grow in India in the future. Unless planned policy changes are designed and vigorously implemented these problems are likely to produce an excessive burden on this developing country’s resources.
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