

## A Reveille on the Prevalence of Alcohol Use in India: What Does the Epidemiological Literature Say?

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### Abstract

*There is a piece of classical and voluminous evidence in the literature regarding the use of alcohol from the Hebrew Bible, literary heritage of Greeks and Romans and the Vedas of India. However, the recent evidence suggests that excessive alcohol consumption is a risk factor for a wide range of health and social problems and a major cause of premature illness and death. The present paper explores the findings of the national and regional based epidemiological survey on alcohol use in the Indian setting. Although there is a difference in the technique and screening instrument, it can be assumed that the prevalence of alcohol use disorders in India can vary from 4.6 % to 5.2 %. The studies conducted in various parts of India using AUDIT as a research instrument found a varying prevalence of alcohol dependence ranging from 12.4 to 36.5 %. Furthermore, harmful alcohol use is found to vary from 33.2 to 52.6 %. The recent data suggest that fewer people in India consume alcohol, but a larger proportion is affected by harmful use or dependence on alcohol. Considering the changing trends of alcohol use in India, epidemiological data regarding the patterns of alcohol use forms the mainstay for proper health planning.*

**Key words:** Alcohol use, India, Prevalence, Epidemiology

### Alcohol use from ‘water of life’ to ‘addiction’ - a friend or a foe?

“... Alcohol has existed longer than all human memory. It has outlived generations, nations, epochs, and ages. It is a part of us, and that is fortunate indeed. For although alcohol will always be the master of some, for most of us it will continue to be the servant of man” [1]. The above-mentioned words explicitly connote to a notion that alcoholic beverages have been used in human societies since the beginning of recorded history- there was alcohol in the beginning! [2]. There is a shred of classical and voluminous evidence in the literature regarding the use of alcohol from the Hebrew Bible, literary heritage of Greeks and Romans and the Vedas of India. Most of the records, archaeological data narrates the goodness and beneficence of the wondrous potions derived from wines and beers. With the advent of the distillation process there emerged an era that leads to the production of so-called “hard alcohol” depending on the concentration with a variety of labels like “water of life”- whiskey in English, “little water”- vodka by the Russians [3]. The ubiquitous use of alcohol got some pejorative notion by the Benjamin Rush which revealed that habitual drunkenness is a disease and he explicitly called it an addiction. Rush’s caveat to alcoholic beverages got empirical support in the twentieth century which led to the contemplation of alcohol – a foe?

### A reveille on alcohol use - 21st-century perspective

Alcohol is a global burden. Overall 5.1 % of the global burden of disease and injury is attributable to alcohol, as measured in disability-adjusted life years (DALYs). In the age group 20-39 years approximately 13.5 % of the total deaths are alcohol-attributable. Harmful alcohol use accounts for 3 million deaths every year; this represents 5.3 % of all deaths. It is a causal factor in more than 200 disease and injury conditions. There is a causal relationship between the harmful use of alcohol and a range of mental and behavioural disorders, other non-communicable conditions as well as injuries [4]. The latest causal relationships are on the incidence of infectious diseases such as tuberculosis as well as the course of HIV/AIDS. Harmful use of alcohol brings significant social and economic losses to individuals and society at large [5].

Excessive alcohol consumption is a risk factor for a wide range of health and social problems and is a major cause of premature illness and death [6]. Chronic excessive consumption can affect every part of the body and lead to long term health problems [7, 8]. Alcohol misuse has been implicated in over 20% of traumatic brain injuries and 60% of all injuries reporting to emergency rooms [9]. Alcohol use contributes to more than 60 different disorders, including foetal alcohol syndrome, liver disease, neurological disorders, cardiovascular and cerebrovascular diseases, anaemia and several cancers [10]. It is clear that dependent use is associated

with a significant burden of disease; but there is also evidence that the burden on health care systems from non-dependent, but harmful or hazardous use, maybe greater than the burden due to dependent use.

### Patterns of alcohol use: ICD-10 and DSM V perspective

ICD 10 uses the category of harmful use as a state that constitutes a pattern of substance use that is causing damage to health. The damage may be physical or mental [11]. Dependence syndrome: The ICD 10 criteria specifies dependence as three or more of the following experiences exhibited at some time during one year. The criteria include tolerance, physiological withdrawal state, impaired capacity to control (onset/termination/levels), a strong persistent desire (Craving), preoccupation and progressive neglect, persisting or continued use. The Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) changed from differentiating Alcohol Abuse and Alcohol Dependence to a single category of Alcohol Use Disorder. The presence of at least two of the listed symptoms indicates an alcohol use disorder (AUD) [12]. The severity of an AUD can be graded as mild, moderate, or severe (Mild: The presence of 2 to 3 symptoms, Moderate: The presence of 4 to 5 symptoms, Severe: The presence of 6 or more symptoms).

### Types of alcoholic beverages in the Indian context

The most common forms of alcoholic beverages are arrack (made from paddy or wheat), toddy (palm wine), country liquor, illicit liquor, Indian Made Foreign Liquor (IMFL), beer and imported liquor. Whiskey, brandy, rum, and gin contain 35% to 50% alcohol whereas beers ordinarily contain 4 to 5%. Wines contain approximately 12% alcohol. However, fortified wines may contain about 20% of alcohol. Home production and self-consumption of some alcoholic beverages are also common in certain regions and ethnic communities in India [13]. For instance, In the Sundarban region in West Bengal, Handia (rice beer) is a traditional drink regarded as food as well as intoxicants by the local Adivasis (tribal/indigenous) communities [14, 15].

### Prevalence of alcohol use in India: Findings of Epidemiological studies

The most commonly used screening instruments for detecting alcohol use in the Indian setting are Alcohol use disorders identification test (AUDIT) and Alcohol smoking substance Substance Involvement Screening Test (ASSIST). The epidemiological findings of the national and regional based alcohol prevalence studies are summarized below.

#### National Survey, 2004

In 2004, Ministry of Social Justice and Empowerment, Government of India (MSJE, GOI) and the United Nations International Drug Control Programme, Regional Office for South Asia (UNIDCP, ROSA) conducted a large-scale national survey to obtain information on the extent, pattern, and magnitude of substance abuse in India. The major components of this survey were National Household Survey (NHS- The survey was conducted to provide estimates of the prevalence at the national level drawing a sample of 40,000 males from 25 states of the country), Drug Abuse Monitoring System (DAMS- The data for Drug Abuse Monitoring Survey (DAMS) component was obtained from consecutive new patients contacting various treatment centers.) and Rapid Assessment Survey (RAS- The Rapid Assessment Survey (RAS) collected information on drug use through in-depth interviews of identified drug users (non-random sample), key informants and focus group discussion from 14 urban sites.). The survey was concluded with the following findings: - Alcohol was the most frequently used substance as seen in the NHS

and the DAMS [16]. Annual prevalence of drinking among adult males in India was 21.4% (NHS) & 43.9% (DAMS).

#### National Survey, 2019

In 2019, the Ministry of Social Justice and Empowerment (MoSJE), Government of India, commissioned a national survey on extent and pattern for substance use in India. It was conducted in all the 36 states and UTs of the country, in collaboration with ten other medical institutes and a network of 15 NGOs and data was collected between December 2017 and October 2018. The following methods were used for data collection. (a) Household Sample Survey (HHS) in all states and UTs covering 200,111 households Visits in 186 districts and 473,569 individuals were interviewed (b) Respondent Driven Sampling (RDS) survey covered 35 districts and 72,642 people were interviewed. In this survey, a standard and validated tool, WHO ASSIST, was used to determine harmful use and dependence among users of various substances. The survey was concluded with the following findings: - Alcohol was the most common psychoactive substance used by Indians (among those included in this survey). Nationally, about 14.6% of the population (between 10 and 75 years of age) uses alcohol. In terms of absolute numbers, there are about 16 crore persons who consume alcohol in the country. The use of alcohol is considerably higher among men (27.3%) compared to women (1.6%). For every one woman who consumes alcohol, there is 17 alcohol using men. States with the highest prevalence of alcohol use are Chhattisgarh, Tripura, Punjab, Arunachal Pradesh, and Goa. At the national level, as many as 19% of current users of alcohol consume alcohol in a dependent pattern. The prevalence of dependent pattern of alcohol use in the general population (10-75 years) is estimated to be 2.7%, or 2.9 crore individuals [17-27]. States with high prevalence (more than 10%) of alcohol use disorders are Tripura, Andhra Pradesh, Punjab, Chhattisgarh, and Arunachal Pradesh.

### Prevalence of alcohol use in India: Comparison of national and regional based studies

Although there is a difference in the technique and screening instrument, it can be assumed that the prevalence of alcohol use disorders in India can vary from 4.6 % to 5.2 % (Table 1)

Author/Year	Sample size/ Place	Screening Instrument	Crude rate
Ambedkar A et al., (2019)	5,46,211/ All India	ASSIST	Use:- 14.6% Harmful use:- 5.2% Dependence:- 2.7%
Gururaj G et al., (2016)[18]	34802/ 12 States	Mini International Neuro-Psychiatric Inventory (MINI)	4.6% (Harmful use and dependence)
Ray et al., (2004)	Ray et al., (2004) 40,697/ All India	Survey Questionnaire	Use:- 21%

**Table 1:** Prevalence of alcohol use in India: Comparison of national-based studies

**Patterns of alcohol use in the Indian setting:** - The studies conducted in various parts of India using AUDIT found a varying prevalence for alcohol dependence ranging from 12.4 to 36.5 %. Furthermore, harmful alcohol use is found to vary from 33.2 to 52.6 %. (Table 2)

Author/Year	Sample size/Place	Alcohol dependence	Harmful alcohol use
<b>Research Instrument:- AUDIT</b>			
Verenkar YJ et al.(2018) [19]	315/Goa	20.9%	46.7%
Manimunda et al., (2017) [20]	18,018/Andaman Island	23%	41.6%
Barik A et al., (2016) [21]	3671/ West Bengal	20.5%	52.6%
Ramanan (2016) [22]	2551/ Puducherry	29.3%	41.2%
Rathod SD et al., (2015) [23]	3220/ Madhya Pradesh	36.5%	33.2%
Kim S (2013) [24]	2811/Vellore, TN	12.4%	50.4 %
<b>Research Instrument:- AS-SIST/ ICD-10 criteria*</b>			
Ambedkar A et al., (2019) [17]	5,46,211/All India	2.7%	5.2%
Joseph et al., (2016)[25]	162/Chandigarh	NA	9.8%
Chavan et al., (2007) *[26]	2,992/ Chandigarh	6.7%	9.8%

**Table 2:** Patterns of alcohol use in India: Comparison of regionally-based studies

### Emerging Trends in the prevalence of alcohol use in India

The recent national survey on the magnitude of substance abuse identified country liquor or ‘desi sharab’ (about 30%) and spirits or Indian Made Foreign Liquor (about 30%) as the most preferred alcoholic beverages in the Indian setting. The proportion reporting predominant use of low-alcohol content beverages (like beer, wine) was small at the national level as well as in almost all the states. Moreover, it was notable that in the north-eastern states, people using alcohol reported a higher preference for home-made rice beer, while the highest proportion of drinking illicitly distilled liquor (kacchi sharab) was reported from Bihar (30%) An additional 2.5% of people in the country (about 2.7 crore individuals), consume alcohol in a harmful manner. In other words, about 5.2% of the population (more than 5.7 crore individuals) are affected by harmful or dependent alcohol use. Nearly one in five alcohol users suffer from alcohol dependence and need urgent treatment [17]. As per WHO 2018 report, half of the global population (aged more than 15 years) are alcohol users [27]. In comparison, India has a much lower prevalence of alcohol use (14.6% of alcohol users). However, a substantial number of Indians (5.2%) use alcohol in a harmful/

dependent pattern, which is almost equal to the global estimates (5.1% as per WHO, 2018). Moreover, the available evidence on alcohol use in India has the following findings:- Initiation of drinking at an early age, greater consumption among women, greater permeation in rural and peri-urban areas, increasing preference for drinks with high alcohol content, increasing trend of hazardous and harmful drinking [17, 27].

### Conclusion

Fewer people in India consume alcohol, but a larger proportion is affected by harmful use or dependence on alcohol. Considering the changing trends of alcohol use in India, epidemiological data regarding the patterns of alcohol use forms the mainstay for proper health planning.

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