

Alcohol consumption in France: one more glass of French paradox

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In France, excessive drinking is essentially an issue among men. More than four men vs. one woman out of ten are affected. Moreover, one in every two men between the age of 25 and 64 is an excessive drinker.

Excessive drinking is less common among people living in a family, except when another member of the family drinks excessively.

The links between excessive alcohol consumption and socio-economic status appear to be complex. Among women, the risk is significant for executives only, while among men it affects executives as well as blue collar workers, but is less frequent among employees. Persons who have experienced periods of social disadvantage during their lives, men working in intermediate professions, self employed, salespersons, executives and men with low income are more likely to have a chronic rather than an episodic consumption pattern. Finally the least well-off are most likely to be non-drinkers.

These results are based on a general population survey which for the first time in France enables to identify excessive, moderate and non-drinking behaviours.

Alcohol abuse is an important health, social and economic issue (Cf. Inserm, 2001 and 2003). The report on public health objectives annexed in the law of August 9th 2004 on public health policy includes among its 100 objectives a reduction in the prevalence of risky and dangerous drinking and the prevention of alcohol dependence. An understanding of the factors associated with excessive drinking is therefore necessary. This should help to identify and target populations at risk before implementing policies aiming at improving health status and reducing avoidable mortality.

In France little is known about alcohol risks distribution in general population. However results from mortality rates or patients surveys indicate both social and geographical inequalities in excessive alcohol consumption. This may in part explain the extent of social inequalities in mortality which exists in France (Cf. Kunst *et al.*, 2000).

Until recently, lack of general population data on consumption volume and frequencies made it impossible to distinguish between moderate and risky consumption and how these are distributed between social groups. Such data is now available that permits to identify consumption patterns, following the introduction of the AUDIT-C

The distribution of different patterns of alcohol consumption

	Daily consumption	Consumption of 6 glasses or more on one occasion	Categories of drinkers	Percentage of persons affected	
Men	0 glasses*	and	Never	Non drinkers	17
Women	0 glasses				35
Men	≤ 21 glasses	and	Never	Moderate drinkers	40
Women	≤ 14 glasses				52
Men	≤ 21 glasses	or	≤ Once a month	Episodic drinkers	31
Women	≤ 14 glasses				11
Men	≥ 22 glasses	or	≥ Once a week	Chronic drinkers	13
Women	≥ 15 glasses				2

*1 standard glass contains 10 grams of alcohol

Source : IRDES - ESPS 2002 data

Field: respondents aged 16 or more who replied to questions on alcohol consumption.

Note for the reader: men who drink 22 glasses of alcohol or more per week, or those who drink at least 6 glasses on the same occasion at least once a week, are chronic excessive drinkers. These represent 13% of the male population.

test questionnaire in recent French general population health interview surveys (Com-Ruelle *et al.*, 2005). AUDIT-C was included in the Health, Health care and Insurance Survey (ESPS) 2002 and 2004. Our study analyses alcohol problems and related socio-economic factors in French general population using this data.

Four categories of alcohol consumption

In order to understand patterns of alcohol consumption, a classification using 4 progressive categories has been constructed (Cf. Com-Ruelle *et al.*, 2006). It was obtained using AUDIT-C and consumption thresholds defined by the World Health Organization (WHO). These categories are:

- non drinkers;
- moderate drinkers who never drink 6 glasses or more on one occasion and never more than 14 glasses per week for women and 21 glasses per week for men;
- episodic drinkers who sometimes drink more than 6 glasses on one occasion but never more than once a month ; daily consumption is less than or equal to 14 glasses per week for women or 21 glasses for men;
- chronic drinkers who drink more than 15 glasses per week for women or 22 or more for men, and 6 glasses on one occasion at least once a week.

We test different variables which may be correlated with these profiles. We aim at identifying demographic, social and economic factors associated with non-drinking as well as those incorporated in the process of moving from a moderate to excessive, episodic and chronic consumption.

Excessive drinking: more than 4 men and 1 woman out of 10

More than 1 out of 10 men are chronic drinkers and about 3 in 10 are

episodic drinkers (see Figure p. 1). Among women, only 2% are chronic drinkers and 10% episodic drinkers.

Between 25 and 64 years old almost one in two men is an excessive drinker

There are considerable age-related differences in consumption patterns in both men and women (see figure p. 3): there are more non-drinkers below the age of 25 and above 65 whereas chronic excess drinking increases steadily with age up to 64. Episodic excessive drinking is more prevalent between the ages of 25 and 44 and then steadily decreases. Overall episodic or chronic excess affect men aged 25 to 64 among whom half are affected.

All other things being equal¹, age still has an independent effect on consumption patterns (see box, p. 3 and table p. 4). Firstly, those under 35 years old declare more often they do not drink. Among drinkers, there is a decrease in the global excessive drinking after the age of 44. On the other hand we show that the probability of chronic rather than episodic drinking excess increases significantly with age. These relationships are a function of both age and generation. In one sense they represent the transition from non-drinking to chronic dependency. And there are also differences in patterns of consumption between generations.

Alcohol consumption in France has been steadily decreasing for half a century. Although this is reassuring, this trend does not tell us what is happening in terms of excessive drinking, and more importantly the medical and social impact of this. Data relating to this issue are lacking. As well as working to reduce the average annual consumption per person of alcohol, we need to focus on reducing excessive and harmful drinking and to reduce alcohol dependence, as envisaged in the public health law of August 9, 2004. Hence we must first estimate the prevalence of at risk alcohol consumption and identify the populations at risk, in order to help those people who may develop alcohol dependency. The objective of this study is to do this using French general population data (ESPS 2002 and 2004).

Families appear to «protect» against excessive drinking, except when a family member is an excessive drinker

All other things being equal, women who live in a household consisting of a couple with children are less likely to consume alcohol than those living alone. Those who do consume alcohol very rarely drink to excess. If the couple does not have children, they do not drink less but are very moderate drinkers.

¹ That is controlling for the effects of family situation, level of education, income, occupation and socioprofessional status.



DATA

Two sub-samples from the 2002 and 2004 ESPS surveys

The results of this study are based on data from the French Health, Health Care and Insurance Surveys (ESPS) carried out by IRDES in 2002 and 2004.

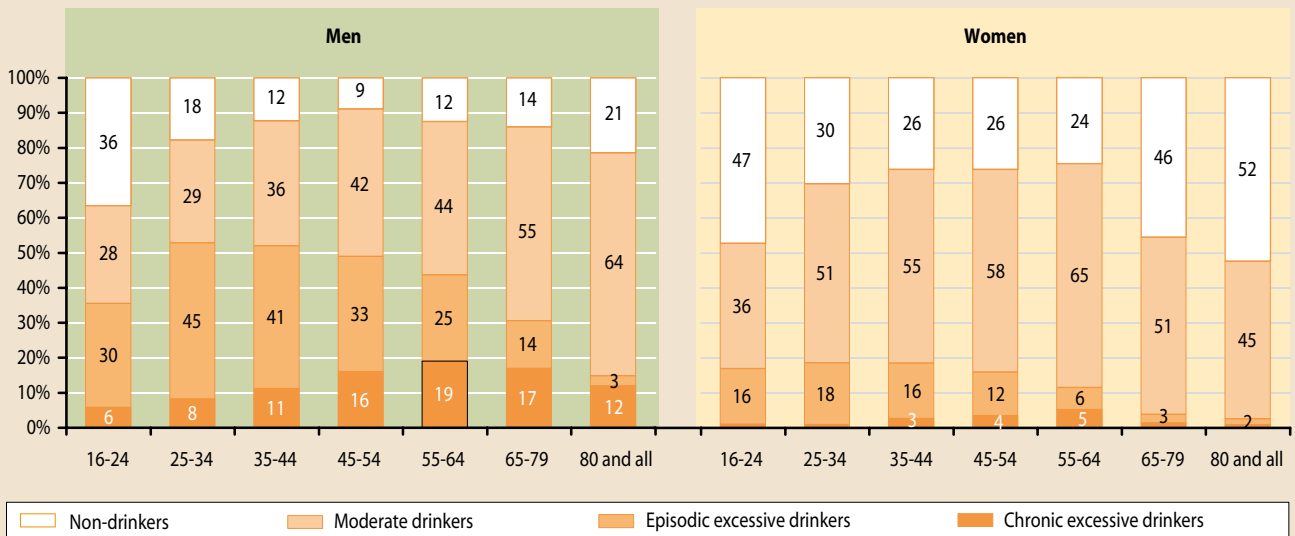
In these surveys, alcohol consumption is measured in a self-assessed "Health" questionnaire. Our working

sample contains 11 17 individuals aged 16 or more having answered questions on alcohol consumption (Com-Ruelle *et al.*, 2006).

A second analysis was completed from the ESPS 2004 survey only, measuring the relationship between alcohol consumption and social

vulnerability, which was introduced in the 2004 questionnaire. This subsample comprised of 4507 respondents aged 30 or older.

Distribution of alcohol consumption profiles by age



Note for the reader : 30% of men and 16% of women aged between 16 and 24 are episodic excessive drinkers.

Source : IRDES - ESPS 2002 Data

Men living in a couple with no children are more likely to drink alcohol than those living alone, but whether or not they have children they are far less likely to drink excessively than those living alone.

Hence excessive drinking is more common amongst persons living alone, men or women, while moderate drinking is more prevalent amongst those living in families.

This result suggests that living in a family protects against excessive drinking, but also indicates that living alone rather than in a family is associated with risky behaviour.

However, this association between family life and moderate drinking is slightly offset by the fact that the probability of excess drinking increases if a family member drinks heavily. This second relationship may indicate the strong influence of family members' drinking behaviour on an individual, or the opposite – the influence of shared preferences or lifestyles on household formation.

A higher probability of non-drinking in lower social classes

Non-drinking is more prevalent in less well off social classes : low income households, unemployed men, persons with few educational qualifications, students and other inactive unretired persons, female blue collar workers and female farmers.

Different mechanisms may explain these results including the effect of price, the influence of health status, or cultural variables which are lacking and thus have not been controlled for in our models.

More excess drinking among women executives

Among women who report alcohol consumption, only managers are more likely to report excessive consumption of alcohol (see table p. 4 and figure p. 5). This suggests several non-exclusive hypotheses. A first hypothesis could be that there may be less under-reporting from female executives. But this result also

appears to be in line with studies showing that female managers smoke more than others (Guilbert *et al.*, 2000), thus seems to indicate that this population is more prone to risky behaviour. This may be related to their professional environment –onerous responsibilities, a more male environment, patterns of socializing – or less aversion to risk.



Statistical models

METHOD

Three analyses « all other things being equal » estimate in turn:

- the probability of not consuming alcohol;
- then, among drinkers, the probability of excess drinking compared to moderate drinking;
- finally, among at risk drinkers, the probability of chronic versus acute risk.

For this, three dichotomous logistical models were developed for men and for women separately in order to take into account their different behaviours.

Socio-economic factors associated with the different categories of drinkers

	Men			Women		
	Probability of being:					
	Non-drinker versus drinker	Excessive drinker versus moderate drinker	Chronic drinker versus episodic drinker	Non-drinker versus drinker	Excessive drinker versus moderate drinker	Chronic drinker versus episodic drinker
Age	<i>Odds-ratio</i>	<i>Odds-ratio</i>	<i>Odds-ratio</i>	<i>Odds-ratio</i>	<i>Odds-ratio</i>	<i>Odds-ratio</i>
16-24 years	2,9****	0,8	0,8	2,5****	1,1	0,7*
25-34 years	1,8****	1,1	0,7**	1,7****	1,0	0,3***
35-44 years	Ref	Ref	Ref	Ref	Ref	Ref
45-54 years	0,8	0,7****	1,6***	0,8**	0,7****	2,0**
55-64 years	1,2	0,5****	2,6****	0,7***	0,5****	2,5**
65 years and old	1,8*	0,2****	4,5****	1,1	0,2****	1,8
Family situation						
Person living alone	Ref	Ref	Ref	Ref	Ref	Ref
Couple with child(ren)	1,2	0,5****	0,7	1,3**	0,2****	1,0
Couple with no children	0,6***	0,7***	0,9	0,9	0,3****	1,6
Single parent family	0,8	0,5**	0,5	1,0	0,7	0,6
Others	1,4	0,4****	1,0	1,5**	0,3****	2,6
No family member drinks excessively	Ref	Ref	Ref	Ref	Ref	Ref
At least one family member (apart from the respondent) is an excessive drinker	0,4****	4,6****	1,2*	0,5****	6,5****	0,9
Level of education						
Primary, no schooling	1,2	1,0	1,0	1,8****	1,0	1,0
Primary cycle	Ref	Ref	Ref	Ref	Ref	Ref
Secondary cycle	1,1	0,9	0,8	0,8**	1,0	0,9
Superior	0,6****	1,0	0,8*	0,5****	1,1	1,0
Occupation						
Active employed	Ref	Ref	Ref	Ref	Ref	Ref
Unemployed	2,2****	1,0	1,0	1,2	1,3	1,7
Retired	1,1	1,2	0,9	1,3	1,0	1,7
Students	4,5****	0,5***	1,4	1,6***	1,2	0,8
Other inactive	2,6****	0,8	1,3	1,5****	1,1	0,6
Professional category						
Farmers	1,0	1,6**	1,1	1,7***	0,6	1,0
Craftsmen, salespeople, chief executives	1,4	1,4*	1,8**	1,2	1,4	1,7
Managers and senior professionals and intellectuals	0,6**	1,5****	1,0	0,9	1,5**	1,3
Employees	Ref	Ref	Ref	Ref	Ref	Ref
Intermediate professions	0,9	1,2	1,5*	0,8*	1,1	1,3
Blue collar workers	1,3	1,5****	1,1	1,4****	1,0	0,8
Net monthly household income						
Less than 990 €	1,2	1,1	1,8***	1,0	0,9	2,0
990 to 2500 €	Ref	Ref	Ref	Ref	Ref	Ref
2 500 to 4600 €	0,8**	1,1	1,0	0,9	0,8	1,5
Greater than 4600 €	0,6****	0,9	0,8	0,8****	1,1	0,7
Geographical situation						
Parisian Basin	Ref	Ref	Ref	Ref	Ref	Ref
Ile-de-France	2,1****	1,0	1,4	1,2	1,1	1,2
North	1,5**	1,7****	1,2	1,0	1,6**	1,6
East	1,5**	1,2	1,3	1,1	0,9	1,0
West	1,0	1,4***	1,5**	0,8**	0,9	1,9
South-West	1,1	1,2*	2,0****	1,0	1,1	2,8**
Centre-East	1,5**	1,2	1,4	1,2*	1,3	1,8
Mediterranean	1,5**	1,2	1,9***	1,4****	1,2	1,4
Rural communes	Ref	Ref	Ref	Ref	Ref	Ref
Less than 20 000 inhabitants	1,0	0,8**	1,0	1,0	1,1	1,3
Between 20 000 to 100 000 inhabitants	2,1****	0,7****	0,9	1,3**	1,0	1,3
More than 100 000 inhabitants	1,6****	0,8***	1,1	1,1	0,9	1,3

Field: Respondents aged 16 or over who have responded to questions on drinking behaviour.

Source : IRDES - ESPS 2002 data

Odds-ratio: The odds ratio is a measure of the degree of association between two variables.

A value of 2.9 obtained for men aged between 16 and 24 is interpreted as follows. For these en the probability of being a non-drinker (Pnc) compared to that of being a consumer (Pc) is 2.9 times higher than for men aged 35-44 (the reference category):

$[Pnc / Pc]_{16-24 \text{ years}} = 2.9 * [Pnc / Pc]_{35-44 \text{ years}}$. For example, if for a man aged 35 to 44, the probability of being a non-drinker is 0.1, the same probability for a man aged 16-24 is 0.32 ($=2.9*0.1/0.9$), all other things being equal.

The coefficient of multiplication 2.9 is significantly different from 1 at the 0.1% threshold.

Level of significance: * 10%, ** 5%, *** 1%, **** 0.1%.

Among men, associations between socio-economic class and excess drinking are more complex

Among men who drink, executives, craftsmen and salesmen are more likely to drink excessively than employees. This is also the case for active employed men compared to students. When this risk has been demonstrated, it is more often chronic than episodic for craftsmen, salesmen and chief executives and those men from households where net monthly revenue is less than €990.

Experiencing periods of social disadvantage is associated with two opposite types of behaviour: no drinking and chronic excessive drinking

The addition of questions measuring social vulnerability in the 2004 ESPS survey, based on episodes of social disadvantage experienced during a lifetime² and measures of access to psychosocial resources have made it possible to study their statistical impact on alcohol consumption patterns.

If people who have experienced periods of social disadvantage during their lives, all other things being equal, are more likely to be non-drinkers, those who do drink are more likely to do so excessively, and if they do so to develop chronic drinking.

Furthermore, people who work with others as well as those who receive emotional support from their family, are more likely to be drinkers than persons living on their own, no doubt because they have more opportunity to socialize. If they drink too heavily this is more likely to take the form of acute dependence because of their frequent social contacts.

Finally, persons with limited independence in the workplace are less likely to drink excessively than persons who have more control over their work; and if alcohol dependence develops this is more likely to be acute than chronic. This is in line with the results described above for executives and independent professionals.

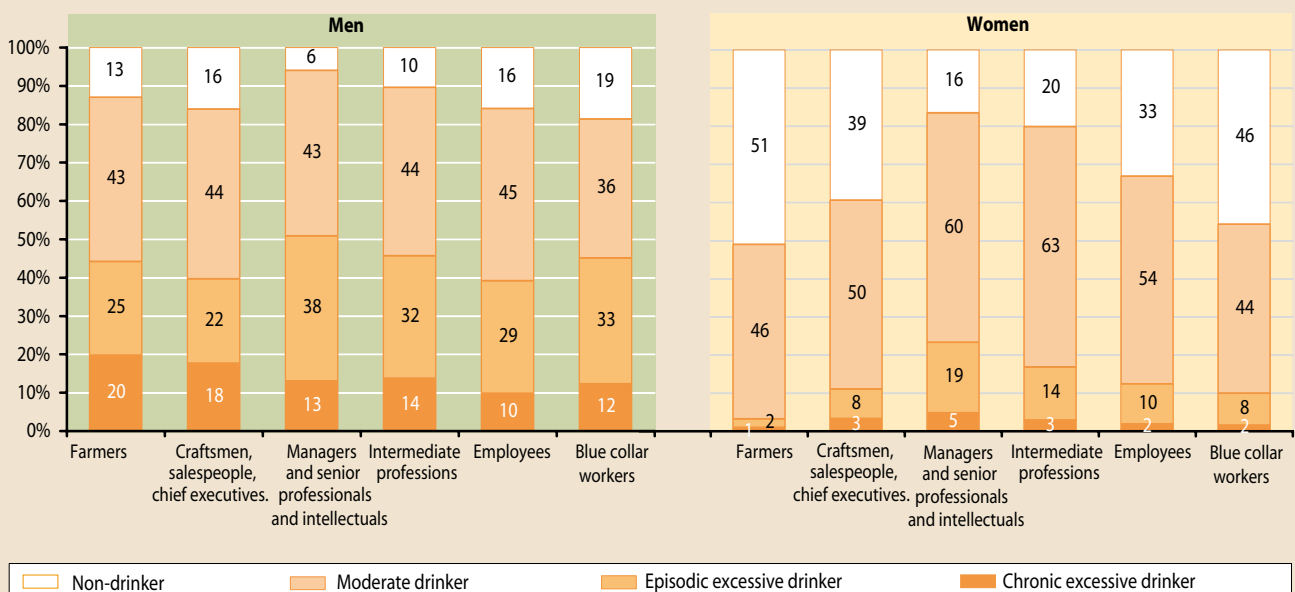
The North is still seriously affected by excessive drinking

All other things being equal, drinking patterns vary between regions and these differences vary by sex. For men, our results indicate that the regions of Ile-de-France, the North, the East, the Centre-East and the Mediterranean have more non-drinkers, in contrast to the West, South-West and Paris Basin, where there are fewer non-drinkers. Excessive drinking is higher in the North, South-West, West and Mediterranean, with this risk more likely to be chronic than acute in the latter three areas.

Women are more likely to abstain from drinking in the Centre-East and the Mediterranean. Excessive drinking is more frequent in the North and chronic drinking is most prevalent in the South-West.

² The indicator of social vulnerability (Cambois and Jusot, 2006) identifies people who say they have experienced one of the following events in their lifetime: involuntary periods out of work, at least one instance of insurmountable financial problems, lengthy periods of isolation or temporary accommodation with friends, family or in hostel accommodation...

Alcohol consumption patterns by socio-economic group



Field: Respondents aged 16 and over answering questions on alcohol consumption.

Source: IRDES - ESPS 2002 data

Comparison with data on mortality from chronic alcohol poisoning by region

The regional differences shown in our study do not match entirely with those based on chronic alcohol poisoning mortality rates, produced by the Cepi-DC team of Inserm (French National Institute for Health and Medical Research).

There is a high prevalence of excessive drinking in the North, where mortality from chronic alcohol poisoning is highest. However, although we find a high rate of alcohol excessive consumption in the south-west for men and for women,

this region has one of the lowest mortality rates from alcohol consumption.

These differences may be explained by the fact that regional data on death rates from chronic alcohol poisoning are not adjusted for social or economic differences, unlike our data, but may also reflect differences in the quality of reported data, with differences in under-reporting between the regions.

Standardised mortality rates for chronic alcohol poisoning*

Men		Women	
Areas	Rates	Areas	Rates
North	108,9	North	31,8
Parisian Basin	73,4	Parisian Basin	15,3
West	71,1	Ile-de-France	14,0
East	63,2	West	13,8
Ile-de-France	53,0	East	12,4
Centre-East	50,6	Mediterranean	10,3
South-West	45,2	South-west	9,7
Mediterranean	44,3	Centre-East	8,8

* Rates standardised by age for 100 000 inhabitants in 2000

Source : CépiDC – Inserm

Compared with regional results on mortality from chronic alcohol drinking, our study shows a different regional picture, where the impact of the region is corrected from the effect of socio-economic status.



This study is the first attempt, using general population data for France, to measure alcohol consumption and to link it with socio-economic factors. It shows that excessive alcohol consumption is an important problem for men, particularly between the ages of 25 and 64. It also shows that family situation has an important influence on patterns of alcohol consumption. In addition it indicates that the less well-off socio-economic groups are more likely to report non-drinking. The links with risky consumption are more complex. In fact excessive drinking is more prevalent among better-off groups such as female managers, and among some

less well-off groups, such as men living in low income households or persons who have experienced periods of social disadvantage.

Based on self assessed data, these results may be affected by under-reporting of the amount of alcohol consumed, due in part to denial. Furthermore it could be possible that reporting bias differ according to socio-economic status, which could have an impact on observed differences in alcohol consumption between social groups.

Notwithstanding these limitations, these results show clearly that alcohol abuse is a serious problem in France, and identifies socio-economic factors associated with this risk.

These results can help to implement public health policies aiming at targeting excessive consumption alcohol groups in France.



FURTHER INFORMATION

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