

Supplementary Table S1. Definition and classification of directly alcohol-attributable causes of death

Definition	DAA causes of death refer to underlying causes where alcohol is explicitly mentioned (alcohol population attributable fraction of 100%)	
Classification	ICD-10 codes	Comments
Alcohol-use disorders	F10	Also called mental and behavioural disorders due to use of alcohol or alcohol-related disorders
Alcoholic cardiomyopathy	I42.6	
Alcoholic liver disease	K70	Includes liver diseases associated with alcohol use or alcohol-use disorders. Usually refers to the coexistence of two or more subentities, i.e., alcoholic fatty liver; alcoholic hepatitis; and alcoholic cirrhosis.
Alcohol-induced pancreatitis	K85.2, K86.0	
Alcohol poisoning	X45, X65, Y15	Includes accidental poisoning by and exposure to alcohol (X45), as well as intentional poisoning by and exposure to alcohol (X65) and poisoning by and exposure to alcohol, undetermined intent (Y15)
Other pathologies due to alcohol	E24.4, G31.2, G62.1, G72.1, K29.2, R78.0	Corresponds to a few rarely occurring causes such as degeneration of nervous system due to alcohol (G31.2), alcohol-induced epileptic seizure (G4051), alcoholic polyneuropathy (G62.1), alcoholic myopathy (G72.1), alcoholic gastritis (K29.2)

ICD-10: International Statistical Classification of Diseases and Related Health Problems, Tenth edition.

Supplementary Table S2. Definition and classification of material wealth level

Definition	It refers to the possession of useful floor space and cars at home and was built by combining information from household floor space and household car ownership. Household floor space in square meters scored 1 if its value was <72, 2 if it was 72-104, and 3 if it was >105. Household car ownership in number of cars owned scored 1 if there was no car ownership at home, 2 if there was one car, and 3 if there were two or more. The value of the two variables was added to obtain the total score of material wealth level.
Classification	Low material wealth: total score<4 Medium/high material wealth: total score≥4

Supplementary Table S3. Definition of categories of employment status and participation in labourmarket

Employed population	People who performed work in the last week prior to the 2001 Census -even if just for one hour- for pay, profit or family gain, including those who were temporarily absent from work due to illness, holiday, industrial dispute, education or training. It includes both participants who reported having paid employment and those who were self-employed. All types of explicit or implicit contracts of employment with other persons or organizations were considered.
Non-employed population	It includes both the unemployed (those who participated in the labourmarket) and the economically inactive population (those who did not participate in the labourmarket).
Unemployed population	People who in the last week prior to the 2001 Census met the following three conditions: 1) They were without work, i.e., they were not in paid employment or self-employment. 2) They were actively seeking employment, i.e., they had taken specific steps to seek paid employment or to be self-employed; for example, applying for work in employment offices, workplaces, job advertising, etc. 3) They were available to start work in paid employment or self-employment.
Inactive population	People who in the last week prior to the 2001 Census were not part of the labor force; that is, they were neither employed nor unemployed, including, for example, students, pensioners and homemakers, provided that they were not working at all and not available or looking for work.

Supporting reference: Instituto Nacional de Estadística (INE). Censos de Población y Viviendas de 2001. Available at: <http://www.ine.es/censo2001/>

Supplementary Table S4. Definition and classification of Occupational Class

Definition	It refers to the kind of work the employee did in the last week prior to the 2001 Census, that is, the specifics tasks or activities performed (work content) and the level and specialization of qualifications or skills needed to perform it.	
Classification	Codes of 1994 National Occupational Classification^a	Comments
<i>Non-manual workers</i>	001-632	
Public administration and big companies' directors	101-119	Executive and legislative power. Directors of public administrations, companies and other organizations (political parties, business organizations, labor unions, humanitarian organizations and other relevant organizations) with 10 or more employees.
Small companies' managers	120-199	Mangers of companies with less than 10 employees other than accommodation or catering companies.
Teachers	220-229, 281-289	Educational professions with university degrees.
Other professions with university degrees	200-219, 230-279, 290-299	Professions associated with university degrees in physics, chemistry, mathematics, engineering, natural sciences, health sciences, education, law, economics, business organization, social and human sciences, tourism, priests, and others. Opticians, physiotherapists, occupational therapists, speech therapists, podiatrists and similar professions are not included.
Technicians/support professionals	300-399	Technicians of engineering and the physical, chemical, natural, and health sciences (i.e. opticians, physiotherapists, occupational therapists, speech therapists, podiatrists, dietetics and nutrition professionals) technicians in childhood education, technicians in navigation and driving and flight instructors, support professionals in finance, commerce and administration, consignees and agents in recruiting manpower, technical specialists of the security forces and private detectives, support professional in social promotion, professional of arts, entertainment and sports, other.
Administrative employees	001-003, 400-499	Employees in accounting, financial and support services to the production and transport, employees of libraries, postal services, operators of office machines, administrative assistants with or without attention to the public, employees dealing directly with the public in travel agencies, receptionists, telephone operators, cashiers, tellers and armed forces employees.
Catering workers	500-509	Bartenders, other bar staff, cooks, kitchen assistants, caterers, waiters, etc.
Personal services workers	510-519	Nursing assistants, caregivers, hairdressers, beauty treatment specialists, workers serving travelers, butlers, treasurers, morticians and embalmers, others.
Sales workers	530-599	Clerks and sales workers in shops, stores, kiosks, markets, etc. Fashion, art and advertising models.
Skilled workers in agriculture/livestock/fishing	600-632	
<i>Manual workers</i>	700-989	
Skilled construction workers	700-729	Includes skilled construction except machine operators as foremen, team leaders, bricklayers, masons, concrete workers, finishers, steel fixers, carpenters (except carpenters metal structures), plasterers, plumbers, pipe fitters, construction electricians, painters, varnishers, wallpaper workers, cleaners of staff facades, chimney sweepers, roofers, tilers, parquet installers, installers of heat and sound insulation, glaziers, other workers finish construction.
Skilled manufacturing workers	730-739, 750-849	Team leaders and operators in metallurgy and mechanical workshops (i.e mechanics of motor vehicles, agricultural or industrial machinery and aircraft engines, moulders, welders, blacksmiths, tool makers, assemblers of metal structures, metal precision mechanics), mechanics and fitters of machines and electrical and electronic

		equipment, graphic arts workers, potters, glassblowers, workers in food, beverage and tobacco industries, workers making wooden objects (i.e., carpenters), workers in the textile, clothing, leather and footwear industries. Team leaders and operators in industrial and stationary machines. Industrial assemblers.
Drivers	850-854, 860-899	Drivers of vehicles for urban or road transport (i.e., taxi drivers, drivers of cars, vans, buses, trucks, motorcycles and mopeds). Operators of locomotives, agricultural machinery and heavy mobile equipment. Sailors are not included.
Other unskilled services workers	900-939	Unskilled workers in trade, peddlers, telemarketers, home sellers, domestic workers, cleaners inside buildings, housemaids, cleaning staff offices or hotels, launderers, pressers, janitors, wachmen, caretaker, attendants, bodyguards, window cleaners, car washers, shoe shine and other street trades workers, meter readers, money collectors of vending machines, garbage collectors, street cleaners, etc.
Unskilled workers in agriculture/livestock/fishing	940-944	Includes unskilled workers in agriculture, livestock, forestry and fisheries.
Mineworkers,	740-749, 950-959	Miners, foremen mining, stonemasons, stone carvers, other workers in extractive industry.
Unskilled construction workers	960-969	Construction labourers, labourers in public works and maintenance of roads, dams and similar constructions.
Unskilled manufacturing/transport workers	970-989	Labourers in manufacturing and transportation industries, loaders/unloaders of goods.

^b: The number of three-digit occupation codes was 207. This classification was based on the International Standard Classification of Occupations for European Union purposes (ISCO-88-COM).

Supporting reference: Instituto Nacional de Estadística (INE). Clasificaciones. Clasificación Nacional de Ocupaciones 1994. Available at: <http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft40%2Fno94%2F&file=inebase&L=0>.

Supplementary Table S5. Calendar-period effect on directly alcohol-attributable mortality and some partially alcohol-attributable causes of death in selected sociodemographic groups from a cohort of working-age people in Spain, 2002-2011

Sociodemographic groups and causes of death	2002-2007		2008-2011		Effect size	
	APC	95%CI	APC	95%CI	Point	95%CI
Total population						
Directly-alcohol attributable	-0.9	-2.5 to 0.8	1.3	-1.7 to 4.4	2.2	-0.2 to 4.6
Unspecified Liver Cirrhosis/Disease	-2.7	-4.0 to -1.5	-3.9	-6.2 to -1.5	-1.2	-3.1 to 0.7
Causes strongly related to alcohol	-3.2	-4.3 to -2.1	-4.2	-6.3 to -2.1	-1.0	-2.7 to 0.7
Caused moderately/strongly related to alcohol	-3.0	-4.0 to -2.0	-4.4	-6.3 to -2.5	-1.4	-2.9 to 0.1
Total employees						
Directly-alcohol attributable	6.9	4.3 to 9.6	3.7	-0.4 to 7.9	-3.2	-6.6 to 0.2
Unspecified Liver Cirrhosis/Disease	4.1	2.1 to 6.2	-1.2	-4.4 to 2.0	-5.3	-8.0 to -2.6
Causes strongly related to alcohol	1.4	-0.3 to 3.1	-1.8	-4.6 to 1.0	-3.2	-5.5 to -0.9
Caused moderately/strongly related to alcohol	1.7	0.2 to 3.1	-2.3	-4.8 to 0.2	-4.0	-6.1 to -1.9
Manual workers						
Directly-alcohol attributable	10.1	6.7 to 13.8	5.5	0.2 to 11.0	-4.6	-9.1 to -0.1
Unspecified Liver Cirrhosis/Disease	7.2	4.4 to 10.1	2.3	-1.9 to 6.8	-4.9	-8.5 to -1.3
Causes strongly related to alcohol	4.4	2.1 to 6.7	1.2	-2.5 to 5.1	-3.2	-6.3 to -0.1
Caused moderately/strongly related to alcohol	4.1	2.1 to 6.2	-0.3	-3.6 to 3.1	-4.4	-7.1 to -1.7
Total non-employees						
Directly-alcohol attributable	-4.3	-6.5 to -2.0	-0.4	-5.0 to 4.4	3.9	0.3 to 7.5
Unspecified Liver Cirrhosis/Disease	-5.4	-7.0 to -3.7	-6.3	-9.8 to -2.8	-0.9	-3.6 to 1.8
Causes strongly related to alcohol	-5.3	-6.8 to -3.8	-6.6	-9.8 to -3.4	-1.3	-3.8 to 1.2
Caused moderately/strongly related to alcohol	-5.5	-6.8 to -4.1	-6.6	-9.4 to -3.7	-1.1	-3.3 to 1.1
Medium/high wealth non-employees						
Directly-alcohol attributable	-5.6	-8.8 to -2.3	4.1	-2.5 to 11.1	9.7	4.5 to 14.9
Unspecified Liver Cirrhosis/Disease	-4.7	-7.0 to -2.4	-6.2	-11.1 to -0.9	-1.5	-5.3 to 2.3
Causes strongly related to alcohol	-4.9	-6.9 to -2.8	-6.9	-11.4 to -2.3	-2.0	-5.5 to 1.5
Caused moderately/strongly related to alcohol	-4.4	-6.3 to -2.5	-7.0	-11.0 to -7.0	-2.6	-5.7 to 0.5

APC: Annual Percent Change of mortality rate adjusted by age-group from Poisson regression models; **95%CI:** 95% Confidence Interval of APC. **Effect size:** Refers to the magnitude of change in the linear trend between crisis and pre-crisis periods, and was estimated as the difference between the APC in 2008-2011 and 2002-2007. **Medium/high wealth:** Variable built by combining information from household floor space and household car ownership.

DAA: Directly Alcohol-Attributable Deaths

ULCD: Deaths from Unspecified Liver Cirrhosis/Disease (K74.3-K74.6, K76.0, K76.9). Population Alcohol Attributable Fraction –PAAF=40%*. (N° of ULCD deaths= 14462).

SRA: Deaths Strongly Related to Alcohol (ICD Codes: K74.3-K74.6, K76.0, K76.9, K22.6, K76.6, K86.1, I85, I98.2, W65-W74,X31, X85-Y09, Y87.1. It refers to those causes with a PAAF>30%*, except those which may have been strongly influenced by economic crises for reasons other than alcohol consumption such as traffic injuries, or those with a long latency period such as alcohol-related cancers (N° of SRA deaths=18206).

SMRA: Deaths Moderately/Strongly Related to Alcohol (ICD Codes: K74.3-K74.6, K76.0, K76.9, K22.6, K76.6, K86.1, I85, I98.2, W65-W74,X31, X85-Y09, Y87.1, K85, X40-X44, X6-X49, X65). It includes those causes with a PAAF> 20%*, except those which may have been strongly influenced by economic crises for reasons other than alcohol consumption, such as traffic injuries or those with a long latency period such as alcohol-related cancers (N° of SMRA deaths=23110).

* Supporting reference for PAAF values: Centers for Disease Control and Prevention (CDC). Average for United States 2006-2010. Alcohol-Attributable Fractions — Any Alcohol Use. Available at: https://nccd.cdc.gov/DPH_ARDI/Default/Default.aspx.