



## Full length article

## Directly alcohol-attributable mortality by industry and occupation in a Spanish Census cohort of economically active population



José Pulido<sup>a,b,c</sup>, Fernando Vallejo<sup>a,b</sup>, Ignacio Alonso-López<sup>a</sup>, Enrique Regidor<sup>b,c</sup>, Fernando Villar<sup>a</sup>, Luis de la Fuente<sup>b,d,\*</sup>, Antonia Domingo-Salvany<sup>e</sup>, Gregorio Barrio<sup>a</sup>

<sup>a</sup> National School of Public Health, Carlos III Health Institute, Avenida Monforte de Lemos 5, E-28029 Madrid, Spain

<sup>b</sup> Consortium for Biomedical Research in Epidemiology and Public Health (CIBERESP), Avenida Monforte de Lemos 5, E-28029 Madrid, Spain

<sup>c</sup> Department of Preventive Medicine and Public Health, Madrid Complutense University, Ciudad Universitaria s/n, E-28040 Madrid, Spain

<sup>d</sup> National Epidemiology Center, Carlos III Health Institute, Avenida Monforte de Lemos 5, E-28029 Madrid, Spain

<sup>e</sup> IMIM, Institut Hospital del Mar d'Investigacions Mèdiques, Carrer del Dr. Aiguader, 88, E-08003 Barcelona, Spain

## ARTICLE INFO

## Keywords:

Alcohol-attributable mortality  
Occupation  
Industry  
Sociodemographic factors  
Population cohort

## ABSTRACT

**Aims:** To assess disparities in directly alcohol-attributable (DAA) mortality by industry/occupation in Spain during 2002–2011 and the contribution of different socio-demographic factors, including socioeconomic position, to explain such disparity.

**Methods:** Nationwide cohort study covering 16 million economically active people living in Spain in 2001. Deaths at age 25–64 were analyzed. Subjects were classified by employment status, industry and occupation at baseline. Poisson regression models were built, calculating rate ratios (RRs) compared to all employees or those in the education sector.

**Results:** DAA mortality was much higher in the unemployed than in employees (Crude RR: 2.4; 95% CI: 2.3–2.6) and varied widely across industries/occupations. Crude RRs > 3.0 ( $p < 0.05$ ) compared to teachers were found in employees in extractive industries/fishing, agriculture/livestock, construction, catering/accommodation and protective services. Socio-demographic factors, especially age, gender and educational attainment contributed more to explain risk disparities than other factors or potential selection bias. However, after exhaustive sociodemographic adjustment, including education attainment and material wealth, a RR > 1.33 ( $p < 0.05$ ) remained in unemployed, catering/accommodation employees and unskilled construction workers. RRs were significantly larger in women than men ( $p < 0.05$ ) among mineworkers/fishworkers/sailors (RR = 8.6 vs. 1.2) and drivers (RR = 3.7 vs. 1.0).

**Conclusions:** The results could be extrapolated to all alcohol-attributable mortality since disparities for other strongly alcohol-related deaths, although smaller, were in the same direction. Given the wide occupational disparities in alcohol-attributable mortality, implementation of special measures to reduce this mortality in the highest risk groups is fully justified. Future research should better characterize the explanatory factors of disparities and their role in the causal chain.

### 1. Introduction

Alcohol use, particularly regular/episodic excessive drinking, is an important risk factor for disease burden worldwide (WHO, 2014a). Unemployment has been found to be associated with an increased risk of alcohol-related problems (alcohol-related morbimortality, alcohol-use disorder, regular/episodic excessive drinking) (Alonso et al., 2017; Backhans et al., 2016; Eliason, 2014; Garcy and Vagero, 2012; Henkel, 2011; Lundin et al., 2012; Mustard et al., 2013). Focusing on

employees, the association between occupation and alcohol-related problems has generally been assessed using a few (i.e., 3–5) broad occupational categories as indicators of socioeconomic position (SEP), and a consistently higher risk of such problems has been found in unskilled workers (usually in the lowest position) (Crombie and Precious, 2011; Erskine et al., 2010; Harrison and Gardiner, 1999; Herttua et al., 2008; Mackenbach et al., 2015; Makela, 1999; Probst et al., 2014). Previous studies have also shown that occupational inequalities in alcohol-related mortality are substantially higher than in all-cause

\* Corresponding author at: National Epidemiology Center, Carlos III Health Institute, Avenida Monforte de Lemos 5, E-28029 Madrid, Spain.

E-mail addresses: [jpulido@isciii.es](mailto:jpulido@isciii.es) (J. Pulido), [fvallejo@isciii.es](mailto:fvallejo@isciii.es) (F. Vallejo), [ialopez@isciii.es](mailto:ialopez@isciii.es) (I. Alonso-López), [enriqueregidor@hotmail.com](mailto:enriqueregidor@hotmail.com) (E. Regidor), [fvillar@isciii.es](mailto:fvillar@isciii.es) (F. Villar), [lffuente@isciii.es](mailto:lffuente@isciii.es) (L. de la Fuente), [adomingo@imim.es](mailto:adomingo@imim.es) (A. Domingo-Salvany), [gbarrio@isciii.es](mailto:gbarrio@isciii.es) (G. Barrio).

<http://dx.doi.org/10.1016/j.drugalcdep.2017.07.028>

Received 22 May 2017; Received in revised form 20 July 2017; Accepted 25 July 2017

Available online 18 August 2017

0376-8716/ © 2017 Published by Elsevier Ireland Ltd.

**Table 1**  
Crude mortality rate directly attributable to alcohol among economically active population aged 25–64 by employment status, industry and occupation. Spain, 2002–2011.

	Total participants				Men				Women				Aged 25–49			Aged 50–64				
	Deaths	CMR	95% CI		Deaths	CMR	95% CI		Deaths	CMR	95% CI		Deaths	CMR	95% CI		Deaths	CMR	95% CI	
<b>Employment status</b>																				
Unemployed	1670	7.4	7.0	7.8	1488	14.7	14.0	15.5	182	1.5	1.3	1.7	757	4.3	4.0	4.6	913	19.2	17.9	20.4
Employed	4171	2.9	2.8	3.0	3751	4.2	4.1	4.4	420	0.7	0.7	0.8	1596	1.5	1.5	1.6	2575	6.3	6.1	6.6
<b>Industry<sup>a</sup></b>																				
Extractive industries/fishing	57	5.9	4.6	7.6	51	6.1	4.6	8.0	6	4.6	2.1	10.3	30	4.6	3.2	6.6	27	8.6	5.9	12.6
Agriculture/livestock	460	5.9	5.4	6.4	436	7.7	7.0	8.4	24	1.1	0.8	1.7	173	3.5	3.0	4.0	287	10.1	9.0	11.3
Construction	789	4.8	4.4	5.1	778	5.0	4.7	5.4	11	1.0	0.5	1.7	326	2.7	2.4	3.0	463	10.5	9.5	11.5
Catering/accommodation	379	4.3	3.9	4.8	324	7.0	6.3	7.8	55	1.3	1.0	1.7	161	2.5	2.1	2.9	218	9.5	8.3	10.9
Administration/business support	110	3.0	2.5	3.6	91	5.9	4.8	7.3	19	0.9	0.6	1.4	39	1.5	1.1	2.0	71	7.0	5.5	8.8
Public administration	339	2.9	2.6	3.2	302	4.4	3.9	4.9	37	0.7	0.5	1.0	103	1.3	1.0	1.5	236	6.6	5.8	7.5
Manufacturing industry/basic supplies	683	2.6	2.4	2.8	635	3.3	3.1	3.6	48	0.7	0.5	0.9	250	1.3	1.2	1.5	433	5.7	5.2	6.2
Artistic/recreational/training activities	51	2.6	1.9	3.4	45	3.7	2.8	5.0	6	0.8	0.3	1.7	22	1.4	0.9	2.1	29	6.7	4.6	9.6
Transport/storage	245	2.5	2.2	2.8	236	3.1	2.7	3.5	9	0.4	0.2	0.8	83	1.2	0.9	1.4	162	6.0	5.1	7.0
Trade/repair	537	2.4	2.2	2.6	462	3.8	3.5	4.2	75	0.7	0.6	0.9	212	1.3	1.1	1.5	325	5.8	5.2	6.4
Household activities	60	2.0	1.5	2.5	24	6.1	4.1	9.2	36	1.3	1.0	1.9	22	1.1	0.7	1.6	38	3.7	2.7	5.1
Healthcare/social services	156	1.7	1.4	1.9	113	3.9	3.2	4.7	43	0.7	0.5	0.9	70	1.1	0.8	1.4	86	3.0	2.4	3.7
Finance	80	1.6	1.3	2.0	70	2.4	1.9	3.1	10	0.5	0.3	0.9	36	1.0	0.7	1.4	44	2.9	2.2	3.9
Professional/scientific/technical services	97	1.4	1.2	1.7	85	2.1	1.7	2.6	12	0.4	0.2	0.7	33	0.6	0.4	0.8	64	5.4	4.2	6.9
Personal services	22	1.3	0.9	2.0	15	4.2	2.5	6.9	7	0.5	0.2	1.1	12	0.9	0.5	1.6	10	2.7	1.5	5.1
Education	106	1.2	1.0	1.4	84	2.6	2.1	3.2	22	0.4	0.3	0.6	24	0.4	0.3	0.6	82	2.8	2.2	3.5
<b>Occupation<sup>a</sup></b>																				
Unskilled construction workers	189	6.6	5.7	7.6	186	6.9	5.9	7.9	3	2.1	0.7	6.4	87	3.8	3.1	4.7	102	18.4	15.2	22.4
Mineworkers/fishworkers/sailors	51	6.3	4.8	8.3	46	6.4	4.8	8.5	5	5.8	2.4	0.0	28	5.1	3.5	7.4	23	8.9	5.9	13.4
Farmers	442	6.2	5.7	6.8	417	8.0	7.3	8.8	25	1.3	0.9	1.9	172	3.8	3.3	4.4	270	10.3	9.1	11.6
Small catering/accommodation companies' managers	74	5.9	4.7	7.4	67	8.4	6.6	10.7	7	1.5	0.7	3.2	31	4.2	3.0	6.0	43	8.4	6.2	11.3
Protective service workers	80	5.5	4.4	6.8	79	6.1	4.9	7.6	1	0.6	0.1	4.3	30	2.7	1.9	3.8	50	15.0	11.3	19.8
Skilled construction workers	654	5.1	4.7	5.5	643	5.2	4.8	5.6	11	1.9	1.0	3.4	258	2.8	2.5	3.2	396	10.4	9.4	11.4
Catering workers	264	4.3	3.9	4.9	223	6.8	6.0	7.8	41	1.5	1.1	2.0	112	2.5	2.1	3.0	152	9.9	8.4	11.6
Drivers	259	3.6	3.1	4.0	249	3.7	3.3	4.2	10	1.8	1.0	3.4	91	1.8	1.5	2.2	168	7.4	6.4	8.6
Other unskilled services workers	293	3.2	2.8	3.6	212	7.4	6.4	8.4	81	1.3	1.0	1.6	107	1.8	1.5	2.1	186	5.8	5.0	6.7
Skilled manufacturing workers	601	3.1	2.9	3.4	556	3.8	3.5	4.1	45	1.0	0.7	1.3	204	1.5	1.3	1.7	397	6.9	6.3	7.6
Unskilled manufacturing/transport workers	53	2.8	2.2	3.7	48	3.5	2.6	4.6	5	1.0	0.4	2.5	23	1.5	1.0	2.3	30	8.9	6.2	12.8
Other small companies' managers	168	2.7	2.3	3.2	155	3.9	3.3	4.5	13	0.6	0.3	1.0	56	1.5	1.2	2.0	112	4.4	3.6	5.3
Sales workers	178	2.0	1.7	2.3	140	4.2	3.5	4.9	38	0.7	0.5	0.9	80	1.1	0.9	1.4	98	5.3	4.3	6.4
Technicians/support professionals	293	1.8	1.6	2.0	262	2.8	2.5	3.1	31	0.4	0.3	0.6	122	1.0	0.8	1.2	171	4.5	3.9	5.2
Personal service workers	79	1.6	1.3	2.0	53	5.2	3.9	6.8	26	0.7	0.5	1.0	37	1.1	0.8	1.5	42	3.2	2.4	4.3
Administrative employees	236	1.5	1.3	1.7	196	2.9	2.5	3.3	40	0.5	0.3	0.6	93	0.8	0.6	0.9	143	4.1	3.5	4.9
Public administration/big companies' directors	54	1.3	1.0	1.7	51	1.6	1.2	2.1	3	0.3	0.1	0.9	15	0.5	0.3	0.9	39	2.6	1.9	3.6
Teachers	80	1.1	0.9	1.4	66	2.4	1.9	3.1	14	0.3	0.2	0.5	16	0.3	0.2	0.5	64	2.7	2.1	3.4
Other professions with university degrees	123	1.1	0.9	1.3	102	1.6	1.4	2.0	21	0.4	0.3	0.6	34	0.4	0.3	0.6	89	3.3	2.7	4.1

CMR: Crude mortality rate directly attributable to alcohol per 100,000 person-years at risk; Deaths: Number of deaths directly attributable to alcohol; 95% CI: 95% Confidence Interval.  
<sup>a</sup> Industries and occupations were ordered by CMR magnitude in total employed population. Details on specific industries or occupations included in each category can be consulted in Table S1.

mortality, and that alcohol consumption contributes considerably to inequalities in all-cause mortality (Hemstrom, 2002; Nandi et al., 2014; Probst et al., 2014; Tjepkema et al., 2013). These studies are very valuable in guiding global public policies, but such broad occupational categories are probably heterogeneous regarding the risk of alcohol-related problems, preventing identification of the highest-risk specific industries/occupations for intervention or research purposes. Studies using smaller industry/occupation groups (not necessarily ordered by SEP) are scarce and often show that working in catering/accommodation, mining or construction is associated with the highest risk for alcohol-related problems, whereas the opposite occurs with working in healthcare/social services, education or public administration (Baker, 2008; Berry et al., 2007; Coggon et al., 2010; Hemmingsson et al., 1997;

Hemmingsson and Ringback, 2001; Jarman et al., 2007; Mandell et al., 1992; Pidd et al., 2011; Pukkala et al., 2009; Romeri et al., 2007; Shaikh et al., 2015).

To identify the industry/occupation groups with higher intervention needs, it may be sufficient to analyze crude disparity measures of alcohol-related problems. However, to improve the orientation and content of intervention programs it is essential to assess the contribution of different factors to explain the disparity of such problems by industry/occupation, which requires sequential adjustment of disparity measures by these factors. There is evidence that age, gender, SEP, immigration or marital status are associated with alcohol-related problems (Bush and Lipari, 2015; Kaila-Kangas et al., 2016; Makela et al., 2006; Pidd et al., 2011; WHO, 2014a) and probably also with industry/occupation.

Download English Version:

<https://daneshyari.com/en/article/5119850>

Download Persian Version:

<https://daneshyari.com/article/5119850>

[Daneshyari.com](https://daneshyari.com)