

Alcohol in Primary Care. Differential characteristics between alcohol-dependent patients who are receiving or not receiving treatment

El Alcohol en Atención Primaria. Características diferenciales entre los pacientes dependientes del alcohol que han solicitado o no tratamiento

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Abstract

Despite its high associated morbidity and mortality, few alcohol-dependent (AD) patients receive treatment. However, many use primary health care services for other reasons. The aim of the present study is to describe the differential characteristics of AD patients in primary care, distinguishing between those who receive treatment and those who do not, and their reasons for not seeking it.

In a cross-sectional study patients were evaluated by their general practitioner (GP) and interviewed by a member of the research team. Sociodemographic, diagnostic and clinical data were collected.

From 1,372 patients interviewed in Catalonia, 118 (8.6%) were diagnosed as AD. These patients showed a lower socioeconomic status (48.3% vs 33.3%, odds ratio 2.02), higher unemployment rates (32.2% vs 19.2 %, odds ratio 2.11), and greater psychological distress and disability. Patients with AD receiving treatment (16.9%), were older (44 vs 36 years of age), reported higher unemployment rates (66% vs 25.5%, odds ratio 6.32) and higher daily alcohol consumption (61.5 vs 23.7 grams), suggesting a more advanced disease. Patients with AD in general showed a higher degree of comorbidity compared to other patients, with patients in treatment showing the most elevated level. The main reasons given for not seeking treatment were shame, fear of giving up drinking and barriers to treatment. Taken together, the data suggest the need to implement earlier strategies for the detection and treatment of AD.

Keywords: alcohol, alcohol dependence, primary care, treatment.

Resumen

A pesar de la elevada morbi-mortalidad de la dependencia del alcohol (DA), pocos pacientes afectados reciben tratamiento. Sin embargo, muchos de ellos son visitados en atención primaria por otras razones. El objetivo del presente estudio es describir las características diferenciales de los pacientes dependientes del alcohol atendidos en Atención Primaria, distinguiendo también entre aquellos que realizan tratamiento o no, y los motivos por los que no lo solicitan. Se trata de un estudio transversal en el que los pacientes fueron entrevistados tanto por sus médicos de atención primaria (MAP) como por un investigador del estudio. Se recabaron datos sociodemográficos, diagnósticos y clínicos. De 1372 entrevistados, 118 (8,6%) fueron diagnosticados de DA. Éstos presentaron un nivel socioeconómico más bajo (48.3% vs 33.3%, odds ratio 2.02), más desempleo (32.2% vs 19.2 %, odds ratio 2.11), y mayores niveles de malestar psicológico y de incapacidad. Los que recibían tratamiento (16,9%), tenían más edad (44 vs 36 años), mayores tasas de desempleo (66% vs 25.5%, odds ratio 6.18) y mayor consumo diario de alcohol (61.5 vs 23.7 gramos), sugiriendo una mayor evolución de la enfermedad. La mayoría de variables clínicas analizadas mostraron una mayor comorbilidad en los pacientes afectados de dependencia del alcohol, y dentro de éstos, una mayor gravedad en los que recibían tratamiento respecto a los que no lo hacían. Las principales razones esgrimidas para no acudir a tratamiento fueron la vergüenza, el miedo a dejar de beber y las barreras para acceder al tratamiento. Estos datos sugieren pues la necesidad de implementar estrategias de detección y tratamiento precoces de la DA.

Palabras clave: alcohol, dependencia del alcohol, atención primaria, tratamiento.

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The consumption of alcohol is a major public health problem, both nationally and internationally. On a world level, it is calculated that some 3.8% of premature deaths and 4.6% of disability-adjusted life years can be attributed to alcohol (Lim et al., 2012; Rehm et al., 2009). Europe, specifically, is one of the areas of the world where there is a greater prevalence of this problem, with 15 million persons affected by alcohol dependence (Rehm et al., 2015b; Witchen et al., 2011). This means there are clear and well-documented repercussions on health, with multiple organic, psychological and even cognitive problems (Soler González, Balcells Oliveró, & Gual Solé, 2014), not only for the individuals concerned but also for their families and society at large. In the same way, it implies an increase in costs for the health system, the judicial system and the welfare system (Ezzati, López, Rodgers, Van de Hoorn, & Murray, 2002). In Spain, alcohol is the second cause of disease burden, with 11% of disability-adjusted life years (DALYs) lost among persons between the ages of 15

and 29 (Catalá-López, Gènova-Maleras, Alvarez-Martín, Fernández de Larrea-Baz, & Morant-Ginestar, 2013) being attributable to alcohol and also 8.4% and 12.3% of premature deaths in women and men respectively, between the ages of 15 and 64 (Rehm, Rehm, Shield, Gmel, & Gual, 2013a).

Despite the high prevalence of alcohol dependence, the majority of patients do not seek treatment. In fact, alcohol-related problems show the lowest treatment rate within mental illnesses (Kohn, Saxena, Levav, & Saraceno, 2004), it being estimated that in Europe up to 92% of affected patients do not receive treatment (Alonso et al., 2004). Multiple previous studies of this point to shame and stigma as being among the most important causes of this (Room, 2005), as well as other reasons such as the fear of giving up drinking, ignorance of the options available or the perception that treatment is ineffective (Andréasson, Danielsson, & Wallhed-Finn, 2013).

Previous researches indicate that patients who attend treatment show traits that differentiate them from those

Table 1. Comparison of clinical and sociodemographic variables in patients without and with a diagnosis of alcohol dependence

	No AD diagnosis (N=1254)	AD diagnosis by CIDI or GP (N=118)	Odds ratio (95 % confidence interval)	Regression coefficient (95% confidence interval)
Average age (SD)	43.7 (12.8)	37.4 (13)		-6.541 (-8.99 - -4.09) p<.001 b
Low socioeconomic level % (CI)	33.3 (30.69 - 35.91)	48.3 (39.28 - 57.32)	2.02 (1.37 - 3) p<.001 b	
Unemployed % (CI)	19.2 (17.02-21.38)	32.2 (23.77-40.63)	2.11 (1.38 - 3.24) p=.001 b	
Smokers % (CI)	28.7 (26.2-31.2)	54.2 (45.24 -63.1)	2.32 (1.56 - 3.45) p<.001 b	
Hypertension % (CI)	15.7 (13.69 - 17.71)	11.9 (6.06 - 17.74)	1.11 (0.59 - 2.1)p=0.749	
Hepatic problems % (CI)	1.7 (0.98 - 2.42)	4.2 (0.58 - 7.58)	2.68 (0.945 - 7.59) p=0.064	
Depression % (CI)	10.7 (9.0 - 12.41)	14.4 (8.07 - 20.73)	2.25 (1.26 - 4.02) p=0.006	
Anxiety % (CI)	16.3 (14.26 - 18.34)	17.8 (10.9 - 24.7)	1.47 (0.88 - 2.46) p=0.14	
K10 % (CI)	7.6 (6.13 - 9.07)	15.3 (8.8 - 21.8)	2.67 (1.51 - 4.73) p=.001 b	
Total mean score (SD)	8.63 (7.2)	11.9 (8.4)		3.95 (2.55 - 5.35) p<.001 b
WHODAS 2.0 average (SD)	2.49 (6.4)	3.83 (7.8)		1.22 (-0.036 - 2.48) p=0.053
Number of days unable to carry out normal activities or work owing to health reasons.				
Total score (SD)	10.97 (13.5)	15.06 (16.02)		5.16 (2.5 - 7.82) p<.001 b
Average daily amount of alcohol (in grams) (SD)	4.7 (10.8)	30.1 (45.7)		23.94 (20.69 - 27.18) p<.001 b
Chronic excessive consumption of alcohol % (CI)	0.1% (0.00 - -0.27)	7.6% (2.82 - 12.38)	102.47 (12.01 - 868.88) p<.001 b	
At least 100g of alcohol daily				
Binge-drinking % (CI)	0.2% (0 - 0.45)	5.9% (1.65 - 10.15)	23.01 (4.31 - 122.88) p<.001 b	
At least 200g of ethanol weekly				

Note. AD= Alcohol dependence in the last 12 months. CIDI= Composite International Diagnostic Interview. GP= General Practitioner. SD= standard deviation. CI= 95% confidence interval. BMI= Body Mass Index. K10= Kessler scale of psychological distress. Cut-off point for severe psychological distress of 21 points, on a scale of 0 to 40. WHODAS 2.0= World Health Organization Disability Assessment Schedule 2.0, range of scores from 0 to 100.

a Regression coefficients adjusted for gender and age.
 b p significant with Bonferroni correction (p<0.05/16=0.003125)

who do not. In a similar way, all of them show that patients who are in treatment are older, have more problems related to consumption and more comorbid health problems, as well as a more precarious psychosocial situation (Berglund, Fahlke, Berggren, Eriksson, & Balldin, 2006).

The objective of the present study is to describe the main differences between patients who are attended to in primary care according to whether they have been diagnosed or not with alcohol dependence over the last twelve months, as well as describing the differences between patients who suffer alcohol dependence according to whether they are in receipt of specialized treatment or not, and the reasons for which they do not seek it.

Material and methods

Subjects and measures

This study was part of a multi-centric European study whose aim was to find out the prevalence of alcohol use disorders, which include the abuse of and the dependence on alcohol, in the primary care population, to describe the main characteristics of diagnosed patients, evaluate the degree of detection of the disease on the part of primary care doctors, determine the percentage of patients who receive specialized treatment and study the barriers that impede access to the same. The methodology has been amply described in a previous article (Manthey et al., 2014).

The study, carried out in Catalonia, is cross-sectional and included 30 randomly-selected GPs from 20 primary care centers. Only three declined to participate while two others were excluded as there was already a sufficient sample. Each GP was asked to respond to a questionnaire referring to patients visited on one day chosen at random. The patients who were visited by the doctor and who consented after signing the informed consent statement, were later interviewed on the same day of the visit by a member of the research team. Some 1,994 patients were interviewed. Of these, the questionnaire completed by the doctor was only obtained from 1,372. The clinical diagnoses made by the doctor were collected, as well as the various health and sociodemographic measures obtained by means of the Composite International Diagnostic Interview (CIDI) (Kessler & Üstün, 2004), which diagnoses the presence of alcohol consumption disorders based on the criteria of the DSM-IV (American Psychiatry Association, 2000), the Kessler screening questionnaire (Furukawa, Kessler, Slade, & Andrews, 2003; Kessler et al., 2003), that measures psychological distress, and the World Health Organization Disability Assessment Schedule (WHODAS 2.0.) (Üstün et al., 2010), that measures the degree of disability, the latter three being administered by the research team. Our principal variable in access to treatment or getting professional help is derived from a combination of the questions that doctors and patients were asked respectively. Professional help comprises advice or assessment,

individual or group psychological interventions, or pharmacotherapy. As well as the closed questions, there were open questions regarding treatment received and the providers of this treatment, which were later classified as professional or non-professional by the authors. A wide definition was used, but professionals such as herbalists and priests were excluded.

Statistical analysis

A description and comparison of patients is made, grouping them together according to whether or not they have been diagnosed as being alcohol-dependent in the last twelve months. A comparison is also made within the sub-group of alcohol dependents, according to whether they are receiving specialized treatment or not. These comparisons are made by means of logistical or linear regression models according to the nature of the variable, adjusting the results for age and gender. The Bonferroni correction procedure for multiple comparisons was applied to the habitual statistical significance of 0.05.

Results

Of the 1,372 patients who were interviewed, and from whom the questionnaire completed by their GP was collected once they had been visited, 118 (8.6%) were diagnosed with alcohol dependence, either by their doctor or by means of the CIDI.

Table 1 shows the differences in the variables studied between the patients who attend primary care, whether they suffer alcohol dependence or not. Among these variables, a greater proportion of patients who are classified as being below the average socioeconomic level stand out, with worse results for the dependent cohort (48.3% vs 33.3%), who also present higher rates of unemployment (32.2% vs 19.2%), smoking (54.2% vs 28.7%), serious psychological distress (15.3% vs 7.6%) and higher scores on the WHODAS disability scale (15.06 vs 10.97). The patients with alcohol dependence were also younger (37.4 years of age (SD13.0) vs 43.7 years of age (SD12.8)). All of these differences turned out to be statistically significant, even after adjusting for age and gender. There were also higher rates of depression, anxiety and hepatic problems in the cohort with alcohol dependence, without these differences reaching levels of statistical significance. Patients with alcohol dependence consumed more grams of alcohol per day (30.1 vs 4.7; $p < 0.001$), and also showed higher rates of consumption in the form of binge-drinking (5.9% vs 0.2%; $p < 0.001$).

Only 20 (16.9%) of the patients with dependence on alcohol were in receipt of treatment at the time of the study. Of these 20 patients, the GP diagnosed 14 as dependents, while the CIDI diagnosed 19 of them. One patient was diagnosed by the GP and not by the CIDI. Table 2 shows the principal reasons given for attending to receive treatment

Table 2. Reasons for not seeking treatment

	n (total=94)
Fear of giving up drinking	11
Shame	18
Desired treatment not offered	7
Stigma	8
Denial	1
Barrier	11
Treatment considered ineffective	1
Did not know how to access it/Did not know it existed	1
Lack of willpower	1
Lack of information	1
Inexistence of professional help	1
Considers alcohol to be different from other drugs	1
It is an incurable disease	1

or not. Shame and stigma, with 27.6% of the total answers given, were the main reasons for not attending, followed by fear of giving up drinking and barriers to access, each with 11.7% of the answers.

In Table 3 the differences in the variables studied between the patients who attend for treatment and those who do not can be seen. It was found that those who attend for treatment are older (44 vs 36 years of age), although after applying the statistical correction for multiple comparisons the difference turned out not to be significant. Unemployment rates were also higher for the sub-group in receipt of treatment (65% vs 25.5%). Also in a significant way, the grams of alcohol consumed on a daily basis were higher for the sub-group in receipt of treatment (61.5 vs 23.7). Although not reaching statistically significant levels, the group in receipt of treatment also presented a higher proportion of smokers, depression, anxiety, psychological distress, levels of disability and consumption of alcohol in the form of binge-drinking.

Table 3. Differences between patients with alcohol dependence according to whether they receive treatment or not

	No treatment (N=98)	Treatment (N=20)	Odds ratio ^a (95% confidence interval)	Regression coefficient (95% confidence interval)
Average age (SD)	35.98 (13.12)	44.05 (10.5)		8.1 (1.93 - 14.28) p=0.011
Low socioeconomic level % (CI)	49 (39.1 - 58.9)	45 (23.2 - 66.8)	0.74 (0.27 - 2) p=0.551	
Unemployed % (CI)	25.5 (16.9 - 34.1)	65(44.1 - 85.9)	6.3 (2.14 - 18.67) p=0.001 b	
Smokers % (CI)	49.4 (39.5 -59.3)	68.4 (48 - 88.8)	2.24 (0.76 - 6.6) p=0.143	
Hypertension % (CI)	13.3 (6.6 - 20)	5 (0.00 - 14.55)	0.152 (0.016 - 1.41) p=0.098	
Hepatic problems % (CI)	4.1 (0.17 - 8)	5 (0.00 - 14.55)	0.81 (0.081 - 8.2) p=0.862	
Depression % (CI)	13.3 (6.6 - 20)	20 (2.5. - 37.5)	1.23 (0.33 - 4.56) p=0.753	
Anxiety % (CI)	14.3 (7.4 - 21.2)	35 (14.1 - 55.9)	3 (0.98 - 9.2) p=0.054	
K10 severe % (CI)	14.3 (7.4 - 21.2)	20 (2.5. - 37.5)	1.25 (0.348 - 4.45) p=0.731	
Total mean score (SD)	11.2 (8.1)	15.3 (9.)		3.5 (-0.54 - 7.6) p=0.088
WHODAS 2.0 average (SD)	3.1 (6.8)	7.5 (10.9)		4 (0.2 - 7.9) p=0.039
Number of days unable to carry out normal activities or work owing to health reasons.				
Total mean score (SD)	113.7 (14.2)	21.8 (22.3)		7 (-0.91 - 14.94) p=0.028
Average daily amount of alcohol (in grams) (SD)	23.7 (33.3)	61.5 (77.4)		39.4 (17.5 - 61.4) p<.001 b
Chronic excessive consumption of alcohol % (CI)	4.1 (0.17 - 8)	25 (6 - 44)	8.7 (1.88- 40.3) p=0.006	
At least 100g of alcohol daily				
Binge-drinking % (CI)	5.1 (0.74 - 9.5)	10 (0.0 - 23.15)	4.3 (0.6 - 30.66) p=0.146	
At least 200g of ethanol weekly				

Note. AD= Alcohol dependence in the last 12 months. CIDI= Composite International Diagnostic Interview. GP= General Practitioner. SD= standard deviation. CI= 95% confidence interval. BMI= Body Mass Index. K10= Kessler scale of psychological distress. Cut-off point for severe psychological distress of 21 points, on a scale of 0 to 40. WHODAS 2.0= World Health Organization Disability Assessment Schedule 2.0, range of scores from 0 to 100.

^a Regression coefficients adjusted for gender and age.

^b p significant with Bonferroni correction (p<0.05/16=0.003125)

Discussion

This study underlines a clear differentiation between patients who are dependent on alcohol vis-à-vis the overall number of patients who are attended to at primary care centers, highlighting greater disability, greater levels of psychological distress, a worse socioeconomic situation and higher rates of unemployment. All of these data point to a fact that is already known, such as the repercussions, both somatic and psychosocial, that dependence on alcohol imposes on those patients who suffer it. It also highlights the scanty proportion of patients who receive treatment and the shame and stigma which are the main causes of this.

If we analyze in detail the clinical differences between patients who attend for treatment and those who do not, it can be observed that those who do attend are more serious cases, are older, drink larger amounts and suffer more repercussions derived from their dependence on alcohol: higher levels of unemployment, anxiety, depression and disability. Although previous studies have shown that there are cases of alcoholism that are not progressive, or are intermittent (Vallant, 2003), alcohol dependence generally becomes worse over time. The average age of the patients in the group in receipt of treatment was higher, although after adjusting for multiple comparisons the difference was not statistically significant. Even still, the higher age and the greater severity observed in the sub-group of patients who seek treatment lead one to think that it is only when the problem reaches a certain level of seriousness that patients either seek or are persuaded to attend treatment. In other words, doctors and patients seem to act in accordance with the old myth that only contemplates the recovery of the alcoholic when he or she has 'hit rock bottom'. From a health perspective, however, quite the opposite may be deduced: the need for earlier interventions with the aim, precisely, of preventing the disease from reaching levels of greater severity. On this point it would be useful to highlight the data from a recent study (Miquel et al., 2014), wherein it can be seen that GPs recognize alcohol dependence more in patients who are older whereas semi-structured interviews such as the CIDI questionnaire identify this group of patients at an earlier age. All of this, together with the enormous costs that the disease means for society (Rehm et al., 2009), emphasize the idea of implementing universal screening for alcohol dependence by means of tools designed specifically for that purpose in primary care, as many guides already recommend (Anderson, Gual, & Colom, 2005; Moyer, 2013; Pascual, Guardia, Pereiro, & Bobes, 2013). This would allow for early detection of the disease and would offer the possibility of preventing its progress. In addition to this, the fact that in our sample some 30% of the patients who attend for treatment were not diagnosed by their GP as being alcohol-dependent underlines the importance of the aforementioned universal screening test as a further option for improving treatment rates.

Even still, as previous studies have shown (Alonso et al., 2004; Kohn et al., 2004), there is still a serious problem regarding the low proportion of patients who receive or seek treatment. Our study found that only 16.98% of patients suffering from alcohol dependence receive treatment, a figure that sits between the 8.3% and the 21.9% indicated in the aforementioned studies; but it is one that is lower than the data obtained in European countries as a whole (20.4%) (Rehm et al., 2015a). In any case, all studies coincide in indicating that the problems related to alcohol are, within mental illnesses, those that show the lowest treatment rates.

The main reason for the absence of treatment is shame, followed by fear of giving up alcohol and barriers that impede access to treatment, data that concur with previous studies (Andréasson et al., 2013; Room, 2005). One way of reducing the associated shame and stigma could be the introduction of quantitative parameters such as "heavy use over time", that allows problems derived from alcohol to be described in a continuum, thus avoiding stigmatizing labels (alcoholic vs non-alcoholic) (Rehm et al., 2013b). On the other hand, barriers to access account for 11.7% of the replies, a fact that implies, on the part of the providers, the need to improve access to treatment for patients.

Various methodological limitations have to be borne in mind when it comes to interpreting the results of this study. Firstly, and most importantly, it is a cross-sectional study, which impedes the establishment of causal relationships in a reliable way. Much of the information that was gathered came via interviews and self-reporting tools, a fact that implies the possibility of skewed data, although previous studies do suggest that the risk is low for the tools used (Furukawa et al., 2003; B. Ustün et al., 1997). We should also be cautious when interpreting data derived from the comparison of patients with alcohol dependence and who receive treatment and those who do not, owing to the fact that the sample size of one of the groups is small. On the other hand, one of the strengths of the study is the high index of participation on the part of the GPs, as well as ample external validity coming from the range of primary care centers in the territory. In this sense, our results concur with the majority of previous studies existing in the literature.

Conclusions

Patients who have alcohol dependence constitute a collective that is clearly differentiated from the remainder of patients within the ambit of primary care. They are patients with a more serious condition and with more comorbidities that are both somatic and psychiatric. Despite this, many of them go unnoticed by the professionals who attend to them, and as previous studies have pointed out, the proportion who are in treatment is frankly low. The data suggest, as well, that the ones who do receive treatment are those whose level of dependency has reached a more serious level, with

them having developed more negative consequences, which presupposes a worse prognosis. Overall, the study suggests the need to implement earlier screening and treatment strategies, it being necessary to take into account the main reasons that the patients give for not attending for treatment and the means available to overcome them.

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Bibliography

Alonso, J., Angermeyer, M. C., Bernert, S., Bruffaerts, R., Brugha, T. S., Bryson, H., ... Vollebergh, W. A. M. (2004). Prevalence of mental disorders in Europe: results from the European Study of the Epidemiology of Mental Disorders (ESEMeD) project. *Acta Psychiatrica Scandinavica Supplementum*, 21–27. doi:10.1111/j.1600-0047.2004.00327.x

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC.

Anderson, P., Gual, A. & Colom, J. (2005). *Alcohol and Primary Health Care: Clinical Guidelines on Identification and Brief Interventions*. (Department of Health. of the Generalitat of Catalonia, Barcelona.

Andréasson, S., Danielsson, A. K. & Wallhed-Finn, S. (2013). Preferences regarding treatment for alcohol problems. *Alcohol and Alcoholism (Oxford, Oxfordshire)*, 48, 694–699. doi:10.1093/alcalc/agt067

Berglund, K., Fahlke, C., Berggren, U., Eriksson, M. & Balldin, J. (2006). Individuals with excessive alcohol intake recruited by advertisement: demographic and clinical characteristics. *Alcohol and Alcoholism (Oxford, Oxfordshire)*, 41, 200–204. doi:10.1093/alcalc/agh244

Catalá-López, F., Gènova-Maleras, R., Alvarez-Martín, E., Fernández de Larrea-Baz, N. & Morant-Ginestar, C. (2013). Burden of disease in adolescents and young people in Spain. *Revista de Psiquiatria Y Salud Mental*, 6, 80–85. doi:10.1016/j.rpsm.2012.07.002

Ezzati, M., Lopez, A. D., Rodgers, A., Vander Hoorn, S. & Murray, C. J. L. (2002). Selected major risk factors and global and regional burden of disease. *Lancet*, 360, 1347–1360. doi:10.1016/S0140-6736(02)11403-6

Furukawa, T. A., Kessler, R. C., Slade, T. & Andrews, G. (2003). The performance of the K6 and K10 screening scales for psychological distress in the Australian National Survey of Mental Health and Well-Being. *Psychological Medicine*, 33, 357–362. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/12622315>

Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E., ... Zaslavsky, A. M. (2003). Screening for serious mental illness in the general population. *Archives of General Psychiatry*, 60, 184–189. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/12578436>

Kessler, R. C. & Üstün, T. B. (2004). The World Mental Health (WMH) Survey Initiative Version of the World Health Organization (WHO) Composite International Diagnostic Interview (CIDI). *International Journal of Methods in Psychiatric Research*, 13, 93–121. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/15297906>

Kohn, R., Saxena, S., Levav, I. & Saraceno, B. (2004). The treatment gap in mental health care. *Bulletin of the World Health Organization*, 82, 858–866. doi:S0042-96862004001100011

Lim, S. S., Vos, T., Flaxman, A. D., Danaei, G., Shibuya, K., Adair-Rohani, H., ... Memish, Z. A. (2012). A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*, 380, 2224–2260. doi:10.1016/S0140-6736(12)61766-8

Manthey J., Gual A., Jakubczyk A., Pieper L., Probst C. & Struzzo P. (2014). Alcohol dependence in primary care in Europe (APC) study: Design, instruments and first results. Toronto, Canada: Center for Addiction and Mental Health.

Miquel, L., Barrio, P., Moreno-España, J., Ortega, L., Manthey, J. & Gual, A. (2015). *Detecció i prevalència del trastorn per ús de alcohol en els centres d'atenció primària de Catalunya*. Manuscrito remès para publicació.

Moyer, V. A. (2013). Screening and behavioral counseling interventions in primary care to reduce alcohol misuse: U.S. preventive services task force recommendation statement. *Annals of Internal Medicine*, 159, 210–218. doi:10.7326/0003-4819-159-3-201308060-00652

- Pascual, F., Guardia, J., Pereiro, C. & Bobes, J. (2013). Alcoholismo. Guía de intervención en el trastorno por consumo de alcohol. Sociedad Científica Española de Estudios sobre el Alcohol, el Alcoholismo y las otras Toxicomanías (SOCIDROGALCOHOL).
- Rehm, J., Allamani, A., Vedova, R. Della, Elekes, Z., Jakubczyk, A., Landsmane, I., ... Wojnar, M. (2015a). General practitioners recognizing alcohol dependence: a large cross-sectional study in 6 European countries. *Annals of Family Medicine*, *13*, 28–32. doi:10.1370/afm.1742
- Rehm, J., Anderson, P., Barry, J., Dimitrov, P., Elekes, Z., Feijão, F., ... Gmel, G. (2015b). Prevalence of and potential influencing factors for alcohol dependence in Europe. *European Addiction Research*, *21*, 6–18. doi:10.1159/000365284
- Rehm, J., Marmet, S., Anderson, P., Gual, A., Kraus, L., Nutt, D. J., ... Gmel, G. (2013a) Defining substance use disorders: do we really need more than heavy use? *Alcohol and Alcoholism (Oxford, Oxfordshire)*, *48*, 633–640. doi:10.1093/alcalc/agt127
- Rehm, J., Mathers, C., Popova, S., Thavorncharoensap, M., Teerawattananon, Y. & Patra, J. (2009). Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. *Lancet*, *373*, 2223–2233. doi:10.1016/S0140-6736(09)60746-7
- Rehm, J., Rehm, M. X., Shield, K. D., Gmel, G. & Gual, A. (2013b). Alcohol consumption, alcohol dependence and related harms in Spain, and the effect of treatment-based interventions on alcohol dependence. *Adicciones*, *25*, 11–18. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/23487275>
- Room, R. (2005). Stigma, social inequality and alcohol and drug use. *Drug and Alcohol Review*, *24*, 143–155. doi:10.1080/09595230500102434
- Soler González, C., Balcalls Oliveró, M. y Gual Solé, A. (2014). Alcohol related brain damage. State of the art and a call for action. *Adicciones*, *26*, 199–207. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/25314035>
- Ustün, B., Compton, W., Mager, D., Babor, T., Baiyewu, O., Chatterji, S., ... Sartorius, N. (1997). WHO Study on the reliability and validity of the alcohol and drug use disorder instruments: overview of methods and results. *Drug and Alcohol Dependence*, *47*, 161–169. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/9306042>
- Ustün, T. B., Chatterji, S., Kostanjsek, N., Rehm, J., Kennedy, C., Epping-Jordan, J., ... Pull, C. (2010). Developing the World Health Organization Disability Assessment Schedule 2.0. *Bulletin of the World Health Organization*, *88*, 815–823. doi:10.2471/BLT.09.067231
- Vaillant, G. E. (2003). A 60-year follow-up of alcoholic men. *Addiction (Abingdon, England)*, *98*, 1043–1051. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/12873238>
- Wittchen, H. U., Jacobi, F., Rehm, J., Gustavsson, A., Svensson, M., Jönsson, B., ... Steinhausen, H.-C. (2011). The size and burden of mental disorders and other disorders of the brain in Europe 2010. *European Neuropsychopharmacology : The Journal of the European College of Neuropsychopharmacology*, *21*, 655–679. doi:10.1016/j.euroneuro.2011.07.018