What is alcohol abuse? Attitudes to drinking in

Sturla Nordlund & Ståle Østhus

seven European countries

Norwegian Institute for Alcohol and Drug Research, P.O. Box 565 Sentrum, N-0105 Oslo, Norway

(Received 30 May 2012; revised 17 September 2012; accepted 18 September 2012)

Aims: To explore norms for alcohol consumption in different parts of Europe, by studying what people mean by "alcohol abuse."

Method: The participants were presented 18 standardized descriptions of different drinking patterns, obtained by systematically varying three levels of frequency of drinking, three levels of intoxication and two levels of context. Random samples of about 1000 persons aged 15 years and over were drawn from each of seven countries: Finland, Germany, Italy (Tuscany), Norway, Poland, Slovenia, and Spain. The participants were asked if they would call each of the descriptions "abuse" or not. As a measure of the "normative climate" in each country, the mean number of descriptions labeled "abuse" was calculated. We also estimated the conditional probabilities for using the different levels of the dimensions (frequency, intoxication, and context), given that the description was labeled "abuse." This gave a quite easy comparison of the relative importance people in each country gave the different dimensions when they evaluated a drinking pattern as "abuse."

Results: Three distinct groups of countries appeared: The Nordic countries had the lowest number of descriptions labeled as "abuse," and Tuscany and Slovenia the highest. The other countries came in the middle.

Conclusion: It seems that norms for alcohol consumption vary geographically over Europe in a way that justifies the often used, but seldom defined, concept of "alcohol culture." Southern European cultural settings suggest a normative system allowing for higher per capita consumption levels but also offering more restrictive informal norms on intoxication. Nordic countries, on the other hand, with their more restrictive alcohol policies, show a pattern of lower per capita consumption levels and less restrictive informal laws governing intoxication during drinking occasions.

Keywords: Norms for drinking, attitudes to abuse, comparative study, Europe

INTRODUCTION

There is a close connection between prevailing norms in a society and the behavior of its population. The connection can be described as a feedback process where the norms influence behavior by provoking informal sanctions for any departure from the norms. At the same time more widespread and continuing departures from the prevailing norms will react on the norms and change them (Bendor & Swistak, 2001; Lapinski & Rimal, 2005). This is easy to observe in some cases, for instance in the field of fashion, because here the change is so rapid, but the same kinds of process also take place in many other fields of society, although usually more slowly.

Norms obviously vary according to social situations. Regarding alcohol use Mäkelä (1986) found large differences in how people approve moderate drinking and intoxication in everyday and work situations versus in party and holiday situations. It has also been shown how these situational norms have changed in Finland over time (Härkönen & Mäkelä, 2010). But people also speak of drinking patterns in a more generalized way thinking of how often it is acceptable to drink how often it is permitted to get drunk, whether the growing happens in a social setting or in solitude, etc. in these matters people usually have very clear norms about what they perceive as acceptable and unacceptable, normal and deviant, use and abuse (death, 1995; Greenfield, &

Correspondence: Sturla Nordlund, Norwegian Institute for Alcohol and Drug Research, P.O. Box 565 Sentrum, N40105 Oslo, Norway. Tel: +47 40610158. Fax: +47 22340401. E-mail: sn@sirus.no



Room, 1997). Also in this field clear changes have happened over time. A study from Norway (Nordlund, 2008) showed this very clearly. By presenting 18 concrete descriptions of different kinds of drinking pattern to representative samples of the population in 1964, 1989, and 2006, and asking the respondents to decide whether they thought each of the descriptions could be classified as alcohol abuse or not, a clear change in peoples' norms could be shown. More descriptions were characterized as abuse in 1964 than in 1989, and more in 1989 than in 2006. In other words: A clear liberal trend in norms for alcohol consumption was evident.

Norms do not only vary over time, but also between groups, countries and cultures. For example, there are obvious differences in alcohol culture between the Nordic and the Mediterranean countries, even though these differences were larger a few decades ago (Anderson & Baumberg, 2006; Leifman, 2001). In the northern countries, a higher proportion of alcohol is consumed in binges (Gmel, Rehm, & Kuntsche, 2003; Hibell et al., 2009). Really drunk people are more often seen in streets and public places in the Nordic countries than in the Mediterranean countries, even though total consumption is lower, and alcohol control policy is more comprehensive and strict in the Nordic countries than in the Mediterranean countries (Karlsson & Österberg, 2001). This might be seen as quite surprising, and it seems reasonable to ask whether differences in informal norms can explain the differences in drinking behavior.

In this article, we present results from a study in which we describe differences in informal norms for alcohol use in different parts of Europe. As far as we know this has never been done before in a scientifically valid way. We concentrate on the central concept of "abuse," and describe how people distinguish between "normal use" and "abuse." This has already been done in the abovementioned study from Norway, and proved to be efficient in showing differences over time. It was therefore a natural choice to use this method for describing differences in drinking norms between countries.

METHOD

Concepts and measures

The use of alcohol can be described by (at least) three dimensions: frequency, quantity and context. Along these dimensions there are levels that most people would describe as "normal use" and levels they would call "problematic" or "abuse," even though there are large cultural differences. For instance, to drink alcohol every day in a Nordic country would clearly be seen as "problematic," or at least "uncommon," by most people, while to drink wine every day at meals in a Mediterranean country probably would not. Drinking to intoxication in a Mediterranean country would probably be seen as "problematic," while it is more common, and sometimes even expected, in the Nordic countries. To drink alone, especially to intoxication, is probably seen as more "problematic" than drinking in a social setting by a majority in all countries.

In this study, we wanted to see how people in different parts of Europe evaluate different ways of drinking alcohol. To represent the different drinking cultures in Europe, we chose seven countries: Finland. Germany, Italy, Norway, Poland, Slovenia and Spain. The three dimensions for describing alcohol use therefore had to be quantified in ways that have the same linguistic meaning in all cultures; what people evaluate should be the same everywhere, but how they evaluate it in different parts of Europe is what we wanted to know. The most problematic dimension in this respect is the quantity of consumption, because it is not usually the consumed quantity of alcohol per se people regard as "problematic" or not, but the level of intoxication it generates (Midanik, 2003). A certain quantity of alcohol can give quite different effects in a man of 100 kg than in a woman of 50 kg. The quantity dimension was therefore turned into an intoxication dimension, which was more suitable for our purpose, but also more difficult to handle linguistically. This is more thoroughly discussed in the paper from the Norwegian study (Nordlund, 2008). The frequency and context dimensions were quantified in a culturally invariant way without any linguistic problems. The following categories were chosen:

- Three levels of frequency: "a couple of times a week," "a couple of times a month" and "a few times a year."
- Three levels of intoxication: "mildly," "fairly" and "strongly."
- Two levels of context: "alone" and "with friends."

In general, the concept of context obviously covers more than just whether one drinks alone or with friends, but in order to have a manageable number of standardized descriptions of drinking patterns, we had to simplify. More complex definitions of this dimension would probably also have created problems with the cultural meaning of the translations.

The levels of the three dimensions were combined into 18 (= $3 \times 3 \times 2$) statements which will range from the most cautious: "Drinks a few times a year with friends and gets mildly intoxicated," to the most extreme: "Drinks a couple of times a week alone and gets strongly intoxicated." The 18 statements are shown in Table I. They represent a scale on which the respondents could indicate whether they would characterize each statement as "alcohol abuse," "not alcohol abuse," or "uncertain." The 18 statements were translated from English (originally from Norwegian to English) to the languages in the other countries, and then independently back-translated as a control. In Poland, two independent translations were done, and a final translation elaborated. The translations used neutral words, avoiding all kinds of slang or

Table I. Percentage characterizing different drinking situations as "abuse."

Ques	stionnaire item	Norway	Finland	Germany	Poland	Spain	Tuscany	Slovenia
1	Drinks a few times a year with friends gets mildly intoxicated	7.3	2.5	11.8	12.8	22.9	28.5	12.0
2	Drinks a few times a year with friends gets fairly intoxicated	17.0	21.5	44.5	26.6	52.9	45.9	52.1
3	Drinks a few times a year with friends gets strongly intoxicated	28.3	18.9	47.2	32.7	50.4	52.6	60.8
4	Drinks a couple of times a month with friends gets mildly intoxicated	12.1	13.5	35.9	41.2	37.9	64.9	35.3
5	Drinks a couple of times a month with friends gets fairly intoxicated	30.8	45.4	77.0	53.8	71.5	65.5	70.3
6	Drinks a couple of times a month with friends gets strongly intoxicated	46.4	49.8	80.8	74.8	75.8	76.0	82.2
7	Drinks a couple of times a week with friends gets mildly intoxicated	37.7	37.1	62.9	69.1	54.4	66.1	58.2
8	Drinks a couple of times a week with friends gets fairly intoxicated	61.9	83.9	88.3	78.4	83.7	83.1	83.4
9	Drinks a couple of times a week with friends gets strongly intoxicated	79.0	87.1	88.8	86.5	84.4	87.4	89.4
10	Drinks a few times a year alone gets mildly intoxicated	13.5	10.9	21.2	43.9	36.5	51.8	46.6
11	Drinks a few times a year alone gets fairly intoxicated	31.9	33.5	52.2	49.5	59.8	58.1	79.0
12	Drinks a few times a year alone gets strongly intoxicated	40.8	36.3	58.9	64.1	62.3	71.0	83.9
13	Drinks a couple of times a month alone gets mildly intoxicated	23.2	17.8	45.7	68.3	53.5	81.4	62.7
14	Drinks a couple of times a month alone gets fairly intoxicated	52.6	60.9	80.9	75.0	78.1	82.9	88.4
15	Drinks a couple of times a month alone gets strongly intoxicated	66.6	61.1	84.5	84.5	78.9	85.6	91.7
16	Drinks a couple of times a week alone gets mildly intoxicated	50.5	51.1	68.9	83.6	67.6	83.5	77.3
17	Drinks a couple of times a week alone gets fairly intoxicated	81.1	89.0	90.0	87.1	85.8	91.8	92.5
18	Drinks a couple of times a week alone gets strongly intoxicated	86.5	94.0	92.4	91.4	88.1	94.8	94.1
Average number of items characterized as "abuse" Average number of "doubt" answers		7.6 1.5	8.1 0.2	11.3 0.3	11.2 0.6	11.4 0.2	12.7 0.4	12.6 0.8

valuation statements. According to our assisting researchers from the different countries, all translations were done in a satisfactory way.

Procedures and participants

After a short introduction where the purpose and procedure of the study was explained,1 the 18 statements were presented to the respondents. The statements were printed on cards and presented one by one in a random order to a representative sample of the population, 15 years and over, in each country. The respondents were interviewed face-to-face at home (except in Tuscany, see below), in some countries computer assisted (CAPI). When there was an "uncertain" response to a statement it was presented once more to the respondent at the end of the interview session. Because there is a theoretical possibility that the order of presentation of the statements could influence the responses to the individual statements, we wanted the same random order to be used in all the countries, and since the survey had already been done in Norway, the random order used in that study had to be used.

In order to have a large variation in cultural norms in the total sample, we decided to include seven countries widely spread over Europe. We chose three Mediterranean countries (Italy, Slovenia, and Spain), two from central Europe (Germany and Poland) and two from the Nordic countries (Finland and Norway). However, it turned out that Italy had to be represented by the Tuscany region only, or more specifically: the municipal and provincial areas of Firenze, Pistoia, and Livorno. For simplicity, we call this region a country for the rest of this article. We decided that a preferred sample size would be 1000 persons from each country. Since the norms we are dealing with here seem to be

Table II. Sampling period, number of respondents, and the companies that did the field work in each country.

Country	Sampling period	No. of resp.	Field work by	
Finland	March 2010	1021	TNS Gallup	
Germany	March 2010	1005	IPSOS	
Tuscany (Italy)	April 2011	1000	Sociolab	
Norway	March 2006	950	Synovate	
Poland	April 2010	1004	TNS OBOP	
Slovenia	October-November 2010	1059	UTRIP	
Spain	October 2010	1077	IPSOS	

changing very slowly, a new data collection in Norway was assumed to be unnecessary (the Norwegian data are from 2006). The plan was for the other countries to collect the data in March 2010, but bureaucratic problems with the EC project officers caused some delay in some countries. The sampling period and number of respondents in each country are shown in Table II.

The sampling procedure and interviews were carried out by professional companies in all the countries. The sampling procedure was a three step stratified design (municipality/household/person) which is standard for most market research companies. Response rates are normally not given when this method is used, but Ipsos Germany could still present a response rate of 72.8%. In practice the sampling method was to draw starting addresses randomly from a register, let the interviewers walk according to a specific instruction to one, or a maximum of four new addresses, and try to interview the person in the household, who was in the target group, and who had most recently her/his birthday. This method is supposed to give approximately representative samples from each country. Still the samples were weighted with respect to gender, age and type of area. The only deviance from the standard sampling method occurred in the Tuscany region, where the respondents "were approached randomly in public places, where it was assumed they would be willing to stop for the time required to conduct the interviews (approximately five minutes per interview): parks, supermarkets, open markets, train stations (both on trains and in the station premises), company cafeterias, universities."2 It is difficult to assess whether this difference in method has affected the results. Therefore, we have to be cautious when comparing the results from Tuscany with the results from the other six countries.

Statistical analysis

The mean number of descriptions of alcohol habits that were labeled "abuse" in each country is shown in Figure 1, with 95% confidence intervals indicated. These mean numbers can be seen as expressions of the general "normative climate" regarding alcohol consumption in these countries.

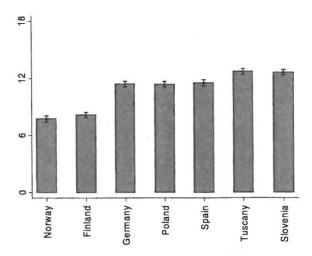


Figure 1. Mean number of descriptions of drinking patterns (18 in all) that were interpreted as abuse in seven countries.

Country differences in the propensity to label drinking patterns as "abuse" were tested in a regression model of the number of situations (18 in total) that respondents labeled as abuse, with country, gender and age entered as explanatory (dummy) variables. Because the dependent variable is a count variable, a standard Poisson regression model was used (Cameron & Trivendi, 2005). In this model, the expected number of situations labeled as abuse is

$$E(y_i|x_i) = \exp(x_i\beta),$$

where i denotes persons or "cases," v_i is the number of situations labeled as abuse, and x_i is a vector of dummy variables capturing country, gender and age group effects. The exponentiated coefficients (i.e. the "incidence risk ratios") on the country dummies from this model can be interpreted as the relative difference (factor change) in the expected mean number of drinking patterns labeled as abuse between the reference country (Norway) and the country the dummy refers to (Table III). In order to obtain country-specific gender and age effects, the number of situations labeled as abuse (y_i) was also regressed on gender and age group dummies separately for each sampled country by means of Poisson regression (Table IV). Robust standard errors were used to correct for over-dispersion in all models. Post-stratifying weights were used to correct the model estimates for potential sampling bias, when such weights were available (weights were not included in the data from Slovenia (self-weighted sample) and Tuscany).

We also wanted to see how much weight people in different countries attach to the different dimensions (i.e. drinking frequency, level of intoxication and drinking context) when they label a specific drinking pattern as abuse. In order to do so we estimated the conditional probabilities for using the different levels



Table III. Estimated differences in average propensity to label situations as abuse.

	IRR	95% CI	
Region (ref. = Norway)			
Finland	1.055*	[1.00-1.11]	
Germany	1.452***	[1.38-1.53]	
Poland	1.478***	[1.41-1.56]	
Spain	1.492***	[1.42-1.57]	
Tuscany	1.603***	[1.53-1.68]	
Slovenia	1.639***	[1.57-1.72]	
Woman	1.127***	[1.10-1.15]	
Age (ref. $= 15-29$)			
30-49	1.130***	[1.09-1.17]	
50-64	1.240***	[1.20-1.28]	
65 and over	1.305***	[1.26–1.35]	
Constant	6.294***	[6.00-6.61]	
N	7052		
Log likelihood	-22,680.1		
BIC	45,457.6		

Notes: Incidence risk ratios (IRR) from Poisson regression on the expected number of situations labeled as abuse (confidence intervals based on robust standard errors).

of the dimensions, given that the description was labeled "abuse." These conditional probabilities add up to one for each dimension in each country, and therefore give a relatively straightforward comparison between the countries (Figure 2).

RESULTS

Table I shows the percentage of respondents that labeled each of the statements as abuse in all the seven countries. There are clear differences between respondents from different countries in the overall tendency to label a described drinking pattern as abuse. The most extreme differences appear in the responses to the statement 13: "Drinks a couple of times a month alone and gets mildly intoxicated." Eighteen percent of the respondents in Finland see this as "abuse," while 81% of the respondents in Tuscany have given the same response. There is also great variation between the countries in the rank ordering of the shares of respondents labeling the statements as abuse. This variation indicates that people in different countries view the importance of the three dimensions differently.

Table I also includes the average number of items characterized as "abuse," and the average number of items where the respondent were uncertain how they should answer (doubt answers), in the different countries. The "doubt-answers" were in general very few, but higher in Norway than in the other countries.

It seems that the interviewers in Norway could have pressed the respondents a little harder in order to get definite answers, but a hypothetical reduction of the "doubt-answers" in this way would not affect the conclusions of this study, except that the average number of items characterized as "abuse" in Norway might have become even closer to the Finnish level.

The unadjusted mean number of descriptions labeled as abuse (Figure 1) suggests that there are three distinct groups of countries, with Norway and Finland having the lowest average number of described drinking patterns labeled as abuse, Tuscany and Slovenia the highest, while Germany, Poland, and Spain lies between these two groups of countries. The differences between the groups are statistically significant. This pattern remains after control for gender and age (Table III).

To see which of the three dimensions people in the different countries attach most weight to when they label a description as "abuse," we have estimated the conditional probabilities of using the different levels of the dimensions, given that the description was labeled "abuse" (Figure 2). These conditional probabilities give an image of the country-specific relative frequencies of the "abuse" response by each of the levels of the three dimensions of the 18 descriptions, and they show some clear differences. For instance, the figure shows that the Finns attach more weight on weekly drinking, and Slovenians less, when labeling a drinking habit as abuse, relatively speaking. The Finns are also the least likely of the seven national settings to regard "yearly" frequency or only "mild" intoxication as deserving of an abuse designation. Norwegians attach most weight on strong intoxication, and people from Tuscany less, relatively speaking. In all countries drinking alone is seen as more important than drinking with friends when people label a drinking pattern as abuse, but this aspect seems to be slightly less important in Germany and Spain than in the other countries. The frequency dimension seems to have a relatively clear north-south gradient in the relative importance for labeling a drinking pattern as abuse. For the other dimensions no clear gradient is apparent, except that people from the Nordic countries see strong intoxication as more important for labeling a pattern as abuse, than people in the other countries, relatively speaking.

In all the countries, women label more of the descriptions as abuse than men (Table IV). There seem, however, to be some differences between the countries: For instance, the gender difference is lower in Germany than in Finland and Slovenia. No northsouth gradient could be detected in the gender differences. There seems to be an age gradient in all countries: In general, more descriptions are labeled abuse with increasing age. Also here there are differences between the countries. Tuscany and Norway seem to have the largest difference between young and old in how they evaluate drinking habits, and Germany and Poland the smallest.

^{*}p < 0.05.

^{**}p < 0.01

^{***}p < 0.001.

Table IV. Incidence risk ratios from Poisson regression of number of situations labeled as abuse on gender and age.

	Norway	Finland	Germany	Poland	Spain	Tuscany	Slovenia	
Woman	1.121**	1.185***	1.061*	1.153***	1.118***	1.081***	1.192***	
	[1.03-1.22]	[1.11-1.27]	[1.01-1.12]	[1.09-1.22]	[1.05-1.19]	[1.03-1.13]	[1.14–1.24]	
Age (ref. $= 15-3$	29)							
30-49	1.065	0.987	1.074	1.105*	1.105*	1.371***	1.212***	
	[0.94-1.20]	[0.90-1.08]	[0.98-1.18]	[1.01-1.20]	[1.02-1.19]	[1.26-1.50]	[1.15-1.28]	
50-64	1.313***	1.171**	1.041	1.143**	1.247***	1.609***	1.280***	
	[1.16-1.48]	[1.07-1.29]	[0.95-1.14]	[1.05-1.24]	[1.15-1.36]	[1.47-1.76]	[1.21-1.36]	
65 and over	1.553***	1.286***	1.164***	1.160**	1.200***	1.598***	1.348***	
	[1.37-1.76]	[1.17-1.41]	[1.06-1.27]	[1.06-1.27]	[1.09-1.32]	[1.47-1.74]	[1.27-1.43]	
Constant	6.105***	6.869***	10.293***	9.640***	9.644***	8.548***	9.633***	
	[5.52-6.75]	[6.38–7.40]	[9.46–11.20]	[8.94–10.39]	[9.00-10.33]	[7.89-9.26]	[9.14–10.16]	
N	935	1018	986	984	1071	1000	1058	
Log likelihood	-3103.9	-3047.7	-3154.7	-3121.2	-3924.1	-3092.0	-3104.7	

Notes: Incidence risk ratios with 95% confidence intervals in brackets (robust standard errors) were estimated separately for each country.

^{***}p < 0.001.

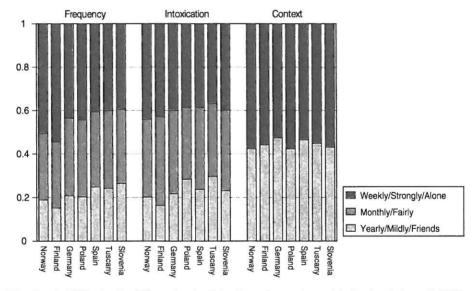


Figure 2. Conditional probabilities for the different levels of the dimensions to be used in the descriptions of drinking patterns, given that the description was labeled "abuse."

DISCUSSION

Figure 1 shows a clear picture of the tendency among people in the seven counties to label a description of alcohol habits as "abuse." The mean numbers shown in the figure can be interpreted as a main indicator of the "normative climate" in relation to alcohol use in each country. Three very clear levels in the mean number of "abuse" - answers are shown, forming three groups of countries: The Nordic countries, Finland and Norway, have clearly less "abuse" - answers, implying a

quite liberal view of drinking practices. In these countries, people tolerate both more frequent and more severe drunkenness, than in the other countries before they call it "abuse." Slovenia and Tuscany seem to have the strictest views on drinking practices, while Poland, Germany, and Spain constitute a group in between. With a reservation due to the special data collection method in Tuscany, we can conclude that there seems to be a north-south gradient in the views on drinking habits in Europe.

With the exception of Spain all three groups contain only neighboring countries (Tuscany representing Italy),



^{*}p < 0.05.

^{**}p<0.01.

which indicates that the three groups really represent different alcohol cultures, and that these cultures are geographically located in different parts of Europe. The norms for alcohol consumption in Spain seem to be more similar to those in a central European country.

The relative tendencies to use the different levels of the frequency and (partly) intoxication dimensions for labeling a drinking pattern as "abuse," also seem to have a north-south gradient (Figure 2). People in the northern countries (Finland and Norway) use the highest level of both frequency and intoxication relatively more often than the other countries when they label a drinking pattern "abuse." People in Slovenia and Tuscany (and also Spain) use the highest frequency more rarely, and the lowest frequency more often, than the other countries, for labeling a drinking pattern as "abuse." Apart from the Nordic countries, there are small differences in the use of the heaviest intoxication level. This means that people in the Nordic countries, even relatively, are more willing than people in the other countries to accept the lower levels of drinking frequency and intoxication without calling them "abuse." In all the countries people more often see drinking alone as a sign of "abuse" than drinking with friends, but the importance of this seems to be less in Germany and Spain than in the other countries.

The absence of a north-south gradient in the gender differences of labeling a description as abuse (Table IV) might be a little surprising, since studies have shown that there is a larger proportion of abstainers among women compared to men in the southern countries than in the northern countries, and the ratio of male to female frequencies of episodic heavy drinking is smallest in the Nordic countries (Anderson & Baumberg, 2006; Mäkelä et al., 2006). One should therefore, expect a larger difference between men and women in southern countries than in the northern countries in the tendency to perceive the descriptions as "abuse." In the Norwegian study (Nordlund, 2008), abstainers clearly labeled more descriptions as "abuse" than consumers, and the number of descriptions labeled as "abuse" decreased with higher consumption.

Differences in the "normative climate" for drinking in different parts of Europe have long historical roots and have developed slowly over a very long period of time. The Nordic countries have a reputation for heavy and boisterous drinking behavior since the Viking era, and at least tendencies to the same kind of conduct are still very commonly seen in public places during weekends. This is more or less according to expectations and usually not regarded as alcohol abuse per se. However, it is seen as a disturbance problem and often results in injuries and medical problems. In order to prevent such problems, strict rules for sales, serving and consumption are in force. Even though these rules may reduce total consumption of alcohol in the population, they do not seem to be able to prevent the high levels of

intoxication and the often problematic behavior at the drinking occasions.

In southern Europe, on the other hand, there are stricter informal norms for drinking, which seem to be strong enough to give a civilized and mostly unproblematic use of alcohol. However, this may have caused a more liberal policy regarding sales and serving, which in turn may have increased total alcohol consumption. In this way, strict informal norms for drinking can go together with high alcohol consumption. Of course, this can also lead to problems, but the types of problems are different than in the Nordic countries. For instance, death rates for liver cirrhosis are substantially higher in the countries than in Nordic countries southern (Ramstedt, 1999).

There is a common understanding that the stricter alcohol control policy is the reason for the lower consumption in the Nordic countries. Why there still seem to be more intoxicated persons in the streets and public places in the north than in the south, may be explained by the results of this article. Human behavior, including alcohol habits, is obviously influenced by both formal rules and informal norms. As we have seen, the norms for drinking are more liberal in the Nordic countries than in the Mediterranean countries. On the other hand, the formal laws and regulations are substantially stricter in the Nordic countries (Karlsson & Österberg, 2001). It may seem that the formal and informal rules for drinking have a certain complementarity: When one is liberal, the other must be strict, and vice versa. This is an interesting hypothesis which deserves further investigation.

In a classic book, MacAndrew and Edgerton (1969) have demonstrated that alcohol consumption can lead to a variety of drunken behavior depending on social norms. As we have shown, social norms vary quite a lot between different parts of Europe, which is reflected in people's behavior. However, it is an established fact that mean consumption and choice of type of alcohol, have been converging over a long period among people in European countries, mainly because consumption has been reduced in the countries that previously had high consumption (Anderson & Baumberg, 2006; Leifman, 2002; Simpura, Karlsson, & Leppänen, 2002). On the other hand, formal rules, or alcohol control policies, have become increasingly stricter in the southern countries since the 1950s (Karlsson & Österberg, 2001), which means that there are converging trends also in the policy arena. Still there are relatively clear differences in informal norms, and thereby behavior, but with very few exceptions, we have little knowledge about how these norms have developed in the different parts of Europe over the years. A future investigation of the developing trends in informal norms would therefore be interesting.





ACKNOWLEDGEMENTS

We wish to thank the following people for their help and support in the data collection process: Esa Österberg (National Institute for Health and Welfare, Helsinki, Finland), Fabio Voller (Agenzia regionale di Sanitá, Florence, Italy), Dirk Schreckenberg (Centre for Applied Psychology, Social and Environmental Research, Hagen, Germany), Jacek Moskalewicz (Institute of Psychiatry and Neurology, Warsaw, Poland), Matej Kosir (Institute for Research and Development, Grosuplje, Slovenia), Lidia Segura and Joan Colom (Program on Substance Abuse of the Government of Catalonia, Barcelona, Spain). We also wish to thank the AMPHORA project administration group, especially Antony Gual and Peter Anderson, for making funding from the EC available for this project. We also thank this group, and especially Silvia Matraj, for patient efforts and help in communication with the EC project officers and for guiding us through the complex rules of the EC.

Declaration of interest: The study is part of the project Alcohol Measures for Public Health Research Alliance (AMPHORA), funded by EU from FP7 HEALTH-2007-B, and by the Norwegian Institute for Alcohol and Drug Research. The authors have no connection with tobacco, alcohol, pharmaceutical or gaming industries or any body funded by one of these organizations.

NOTES

- 1. The interviewer presents the following introduction to the respondent: 'We now want to know what people in general mean by use and abuse of alcohol. I will therefore present to you 18 different statements describing different ways of using alcohol. The statements are written on cards, and the cards will be given to you one at a time. I want you to read the cards carefully. Some people will say that a person that drinks as described on the card is abusing alcohol, while others think it is not indicating abuse. The views on this vary a lot, but we are now interested in your personal opinion; Do you think that the statement on the card indicate abuse of alcohol or not?"
- 2. Quoted from the methodological note from Sociolab, Florence.

REFERENCES

- Anderson, P., & Baumberg, B. (2006). Alcohol in Europe: A public health perspective. London: Institute of Alcohol
- Bendor, J., & Swistak, P. (2001). The evolution of norms. American Journal of Sociology, 106, 1493-1545.

- Cameron, A.C., & Trivedi, P.K. (2005). Microeconometrics: Methods and applications. New York, NY: Cambridge University Press.
- Gmel, G., Rehm, J., & Kuntsche, E. (2003). Binge drinking in Europe: Definitions, epidemiology, and consequences. SUCHT, 49, 105-116.
- Greenfield T.K., Room R. (1997). Situational norms for drinking and drunkenness: Trends in the US adult population, 1979-1990. Addiction, 92: 33-47.
- Härkönen, J.T., & Mäkelä, P. (2010). Changes in the norms guiding alcohol use in the Finnish general population over the past 40 years. Addiction Research and Theory, 18, 392-408.
- Heath, D.B. (Ed.). (1995). International handbook on alcohol and culture. London/Westport/Connecticut: Greenwood Press.
- Hibell, B., Guttormsson, U., Ahlström, S., Balakireva, O., Bjarnason, T., Kokkevi, A., & Kraus, L. (2009). The 2007 ESPAD report. Stockholm: The Swedish Council for Information on Alcohol and Other Drugs.
- Karlsson, T., & Österberg, E. (2001). A scale of formal alcohol control policy in 15 European countries. Nordic Studies on Alcohol and Drugs, 18, 117-131.
- Lapinski, M.K., & Rimal, R.N. (2005). An explication of social norms. Communication Theory, 15, 127-147.
- Leifman, H. (2001). Homogenisation in alcohol consumption in the European Union. Nordic Studies on Alcohol and Drugs, 18, 15-30.
- Leifman, H. (2002). Trends in population drinking. In T. Norström (Ed.), Alcohol in postwar Europe (pp. 49-82). Stockholm: National Institute of Public Health.
- MacAndrew, C., & Edgerton, R.B. (1969). Drunken comportment: A social explanation. Chicago: Aldine Publishing Company.
- Mäkelä, K. (1986). Attitudes towards drinking and drunkenness in four Scandinavian countries. Annals of the New York Academy of Sciences, 472, 21-32.
- Mäkelä, P., Gmel, G., Grittner, U., Kuendig, H., Kuntsche, S., Bloomfield, K., & Room, R. (2006). Drinking patterns and their gender differences in Europe. Alcohol & Alcoholism, 41, i8-i18.
- Midanik, L. T. (2003). Definitions of drunkenness. Substance Use & Misuse, 38, 1285-1303.
- Nordlund, S. (2008). What is alcohol abuse? Changes in Norwegians' perceptions of drinking practices since the 1960s. Addiction Research and Theory, 16, 85-94.
- Ramstedt, M. (1999). Liver cirrhosis mortality in 15 European countries. Nordic Studies on Alcohol and Drugs, 16, 55-73.
- Simpura, J., Karlsson, T., & Leppänen, K. (2002). European trends in drinking patterns and their socioeconomic background. In T. Norström (Ed.), Alcohol in postwar Europe (pp. 83-114). Stockholm: National Institute of Public Health.