

Experienced Harm from Other People's Drinking: A Comparison of Northern European Countries



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ABSTRACT

OBJECTIVE: This study addresses how experienced harm from other people's drinking varies between six Northern European countries by comparing 1) the prevalence of experienced harm and 2) the correlates of harm.

METHOD: The data comprise 18–69-year olds who participated in general population surveys in Denmark, Finland, Iceland, Norway, Sweden, and Scotland during the period 2008–2013. Comparative data were available on five types of harm: physical abuse, damage of clothes/belongings, verbal abuse, being afraid, and being kept awake at night.

RESULTS: This study shows that harms from other's drinking are commonly experienced in all six countries. Being kept awake at night is the most common harm, while being physically harmed is the least common. The proportions that reported at least one of the five problems were highest in Finland and Iceland and lowest in Norway, but also relatively low in Sweden. Across countries, the level of harm was highest among young, single, urban residents, and for some countries among women and those who frequently drank to intoxication themselves.

CONCLUSIONS: The study revealed large differences in the prevalence of harm in countries with fairly similar drinking cultures. However, the correlates of such experiences were similar across countries. Possible explanations of the findings are discussed, including differences in study design.

KEYWORDS: alcohol's harm to others, cross-country comparison, sociodemographics, drinking patterns

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Introduction

Alcohol is associated with a wide range of negative consequences, including harm to health and social problems – for drinkers themselves, for people in their surroundings, and for society at large.^{1–3} Recently, both policymakers^{4,5} and researchers^{6,7} have shown renewed interest in alcohol's harm to others. Among other things, a number of countries have recently conducted surveys to map the extent of such harm in their country.^{8,9}

The prevalence of harm from other people's drinking can be expected to be particularly high in countries with a high consumption level and/or a drinking pattern characterized by frequent intoxications.^{10,11} However, the tolerance of alcohol use and the threshold for experiencing harm from other people's drinking might also be higher in such countries. Thus, it is not obvious how

the level of self-reported harm varies between different countries. This paper sheds light on this issue by comparing the prevalence of experienced harm from other people's drinking as well as correlates of such harm in the Nordic countries and Scotland.

The Included Countries

One reason for researching across national borders is the need for public health monitoring and descriptive epidemiology.¹² For example, national governments often want to know how their countries measure up against other countries in per capita consumption or in other comparative rankings of alcohol use. Cross-country comparisons also allow us to examine whether and how different levels of alcohol consumption as well as different drinking patterns may influence



the level of experienced harm from other people's drinking. A country's level of consumption can reflect the current alcohol policy to some extent, but also a country's deeply embedded drinking culture. Thus, in general, one would expect the differences in drinking cultures to be greater between countries than within a country over time. Recent surveys from the Nordic countries and Scotland included questions about the harm experienced from others' drinking. These allow for cross-country comparisons regarding physical abuse, damage of clothes/belongings, verbal abuse, being afraid, and being kept awake at night.

From a previous Nordic study (Table 1),¹³ we know that countries with fairly similar drinking cultures (Denmark, Finland, Norway, Sweden) may report quite different figures about experienced harm from other people's drinking. This comparison covered questions about nuisances caused by another's drinking and partly overlaps with the questions used in the present paper. Among men, more problems were reported in Denmark and Sweden than in Finland and Norway. Among women, the cross-country differences were less pronounced, but Norwegians generally reported fewer problems than respondents from the other countries. The current discussion on alcohol's harm to others has begun well after the data of the previous Nordic comparison were collected (1996–1998). This paper examines the most recently gathered data (2008–2013) on alcohol's harm to others in the Nordic countries and extends the previous study by also including data from Iceland and Scotland.

Table 1 presents background data on the current paper's study countries. In 2012/2013, a comparatively low alcohol consumption level can be found in Iceland, Norway, and Sweden with total sales of alcohol of 5.4, 6.2, and 7.4 L pure alcohol, respectively. Denmark, Finland, and Scotland represent higher consumption countries with total sales figures of 9.1, 9.5, and 10.9 L, respectively (Table 1).^{14,15}

It can be expected that the level of experienced harm from other's drinking would be highest in countries having intoxication-oriented drinking patterns.^{10,11} Furthermore, a high consumption of spirits may be used as a proxy for a drinking pattern characterized by intoxication.^{16,17} Thus, as shown in Table 1, the proportion of spirits as total sale of alcohol is higher in Scotland and Finland than in the other countries. In Sweden, Denmark, and Norway, wine sales constitute a larger proportion than in the remaining countries. Another indicator of an intoxication-oriented drinking culture may be how many of the total number of drinking episodes that result in intoxications. This proportion seems to be higher in Finland and Sweden than in Denmark and Norway (Table 1).¹ According to the 2011 figures from the European School Survey Project on Alcohol and Other Drugs (ESPAD), the proportion of adolescents who had been drinking in the past 30 days was highest in Denmark and Finland and lowest in Iceland.¹⁸ Also notable in Table 1 is that the proportion of young people who reported binge drinking in the past 30 days was particularly high in Denmark and Scotland, while it was lowest in Iceland. Of the six countries included in this study, alcohol

consumption seems to be highest in Scotland, Denmark, and Finland. Overall, the drinking pattern appears to be more intoxication-oriented in Scotland, Sweden, and Finland than in the other countries.^{10,11}

A high consumption level and an intoxication-oriented drinking pattern tends to increase harm to the drinker,^{1,10,11} although it does not necessarily result in a higher level of self-reported harm from other people's drinking. The tolerance toward alcohol use may also be greater in such countries, and the threshold for experiencing harm therefore may be higher. To our knowledge, no previous studies have mapped the tolerance of, or attitudes toward, the negative consequences of other people's drinking, or compared tolerance across countries. However, previous studies of attitudes toward alcohol use per se indicate that attitudes become more liberal in periods with increased consumption. For example, a repeated Norwegian study of different drinking scenarios revealed that fewer scenarios were characterized as abuse in 2006 than in 1989, and fewer in 1989 than in 1964.¹⁹ Similarly, a study from Finland concluded that attitudes toward one's own drinking have become progressively more permissive since the 1960s.²⁰ However, since the above studies were cross-sectional, it is not possible to conclude whether an increase in alcohol consumption resulted in more liberal attitudes or whether increasingly liberal attitudes resulted in higher consumption.

The research method used in the Norwegian study was later used in a project to compare the attitudes in several European countries. In that study, participants from Finland and Norway were more tolerant of both more frequent and more severe drunkenness than participants from central and southern European countries, ie, fewer drinking patterns were classified as abuse in Finland and Norway, which constituted the countries with the lowest per capita consumption.²¹ Thus, there are most likely other aspects of the drinking culture at work than merely a country's consumption level as measured in per capita consumption. A European literature review showed that a higher proportion of alcohol is consumed in binges in the "dry" Northern countries than in the "wet" Southern countries,²² and may thus be helpful to understand these findings.

In addition to differences in drinking patterns and people's tolerance of drinking across countries, one can assume that the way alcohol consumption and alcohol-related problems are regulated and treated in the various countries may affect the level of experienced harm. According to previous cross-country comparisons, alcohol policy is found to be more restrictive in Norway, Iceland, and Sweden than in Denmark (Table 1).^{23,24} No alcohol policy index is available for Scotland. However, its policies can be regarded as more restrictive than those in the United Kingdom, and are comparable to those of the Scandinavian countries (see footnote in Table 1). With respect to harm from others' alcohol use, one could assume that people who live in countries with a more restrictive alcohol policy (ie, Norway, Iceland, and Sweden) have a lower threshold for reporting harm than people living in Denmark.

Table 1. Comparative data on alcohol use and self-reported harm from other people's drinking in study countries.

	FIRST AUTHOR, YEAR	SAMPLE TYPE	AGE	DENMARK	FINLAND	ICELAND ^a	NORWAY	SWEDEN	SCOTLAND
Consumption/drinking pattern									
Sales of alcohol – liters of pure alcohol ^b	Henriksson 2015 ^{14,c}			9.5	9.1	5.4	6.2	7.4	10.9
Proportion spirits of total sales (%)	Henriksson 2015 ¹⁴			17	22	16	18	15	29
Proportion beer of total sales (%)	Henriksson 2015 ¹⁴			37	47	54	44	36	39
Proportion wine of total sales (%)	Henriksson 2015 ¹⁴ , Babor 2010 ¹ , Hibell 2012 ¹⁸			45	20	30	37	49	31
Intoxication occasions: drinking occasions		High school	Adults 15–16	0.08	0.25	–	0.13	0.27	– ^d
Alcohol use past 30 days (%)				76	48	17	35	38	
Binge drinking past 30 days (%)		High school	15–16	56	35	13	30	31	51
Alcohol control policies									
The alcohol policy index ^f	Brand et al. 2007 ²⁷			33	54	64	67	64	– ^d
Classification of alcohol policy according to strictness, 2012 (Table 7, page 61) ^f	Karlsson 2014 ²⁴			63.3	115.5	117.0	126.5	118.5	– ^d
Reported harm from others drinking									
Percentage with three or more types of problems ^g	Mäkelä 1999 ¹³	Men	19–71	11	7	–	6	11	–
Percentage with three or more types of problems ^g	Mäkelä 1999 ¹³	Women	19–71	12	12	–	10	15	–

Notes: ^aOnly sales by the retail monopoly. Data for on-premise sales are excluded. ^bLiters of sold pure alcohol per inhabitants aged 15 years and older in 2013. ^cLiters of sold pure alcohol per inhabitants aged 16 years and older in Scotland, 2012. Copyright Nielsen/CGA 2013. ^dScotland has stricter alcohol policies in place than the rest of the UK, but was not examined in the index or classification scale. For example, Scottish licensing laws have an explicit public health objective (protecting and improving public health), there are restrictions on alcohol availability (trains/ferrries, ban on multi-buy promotions), and Scotland has introduced a minimum unit pricing policy but its introduction has been delayed due to a challenge in the European Courts. In fact, the Scottish Alcohol Policy is more in line with the Nordic alcohol control policy approach than the UK policy. <http://www.alcohol-focus-scotland.org.uk/campaigns/scottish-policy/>. ^eScottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) 2010: https://is.scotland.scot.nhs.uk/Health-Topics/Public-Health/SALSUS/Previous-Reports/_docs/2010/SALSUS_2010_National_Report.pdf. ^fAn indicator of the strength of a country's alcohol control policies. The higher score, the more restrictive the policy. ^gAsked about experiences of seven specified types of nuisance due to other peoples' drinking the past 12 months.



Correlates of Experienced Harm from Others

Previous studies indicate that the type of harm considered in this paper differs between various subgroups within a population. Such harm is more common among younger than older people.^{7,13,25} Whereas some studies find that women are more likely to report harm than men,^{25,26} others find that men are more likely to report harm.⁷ Single, urban residents and highly educated individuals seem to have a higher risk for experiencing harm.²⁵ Finally, the more people drink, particularly if they drink to intoxication, the more likely they are to experience problems associated with other people's drinking.^{13,25}

As can be seen from the above, some subgroup differences in experienced harm from other people's drinking are well documented, while others are only addressed in a few studies/countries. The surveys included in the present paper allow a systematic cross-country comparison of a broad range of relevant correlates of experienced harm from others' drinking, including variables that have received limited research attention to date: ie, age, gender, place of living, partner status, level of education, and alcohol use.

Aims of the Study

The aims of this study are as follows:

1. to compare the prevalence of experienced harm from other people's drinking in Northern European countries;
2. to compare the correlates of such experiences in the various countries, including sociodemographic factors as well as the respondents' own drinking.

Methods

Participants and procedures. The data were obtained from general population surveys conducted in the five Nordic countries and Scotland during the years 2008–2013. Whereas some of the studies were based on random population samples, others used quota sampling. The final samples were weighted to resemble the demographic distributions of the respective countries. Procedures for calculating weights differed between the countries. The methods used for data collection also varied: face-to-face interviews, telephone interviews, and postal/Web-questionnaires. In general, survey modes that rely on respondents' self-administration are found to report larger amounts of alcohol than those that require interviewers to directly ask about alcohol use. However, these mode effects are greater for more sensitive illicit substances, such as cocaine and marijuana, compared to alcohol use.²⁷ Details about sampling and methods for data collection in each country, as well as the response rates of the respective surveys, are presented in Table 2. To obtain samples with identical age groups, only data from respondents aged 18–69 years were included in the analyses. After selecting these age groups, the sample sizes varied between 802 and 12,678 respondents (Table 2).

Measures. *Experienced harm from other people's drinking.* All countries asked about a set of specified negative

consequences related to other people's drinking in the past 12 months. In this paper, we focus on five negative consequences that were asked in all countries (Table 3). Identical response options were used, ie, never, 1–2 times, and 3 times or more. The introduction to the questions varied somewhat across the study countries. The most important difference was that Finland asked only about experiences in public places, and experiences were only related to perpetrators who were unknown or partly known to the respondents. In the other countries, there were no restrictions regarding the setting or the perpetrator(s). Thus, one could expect more episodes to be reported in the other countries. Moreover, the definition of alcohol use of the perpetrator(s) varied. In Scotland, respondents were asked whether perpetrators had been drinking alcohol, and in Norway whether the perpetrators were under the influence of alcohol. In the other countries, respondents were asked about episodes where the perpetrators were drunk.

Other variations in the wording of the items may also affect the interpretation of the findings (see Appendix for the items used in each country). The largest difference was for the question about being afraid of someone who had been drinking. While respondents in Norway were asked whether they were afraid of being hurt by someone who had been drinking independent of the setting, respondents in other countries were asked whether they had been afraid of someone who had been drinking in public places. Thus, the Norwegians may be less likely to report being afraid than the respondents in the other countries.

In the analyses, the measures of experienced harm from others drinking were dichotomized; ie, we calculated the proportions of those who had experienced each of the five specified problems at least once in the past 12 months. In addition, we compared respondents who had experienced at least one of the five problems with respondents who had not experienced such problems.

Demographic variables. Men were coded as 0 and women as 1, and age was grouped into five categories: 18–29 (coded 1), 30–39 (2), 40–49 (3), 50–59 (4), and 60–69 (5). Educational level was grouped into the three categories “elementary school” (1), “high school” (2), and “university” (3). Partner status was dichotomized into “living with a partner” (0) and “not living with a partner” (1); and place of living was dichotomized to “not urban” (0) and “urban” (1). Due to different phrasing of questions, the definition of an urban living location varies from country to country. For example, in Norway the definition was based on the centrality of the municipality, while in Denmark it was based on the size of the municipality.

Own drinking. All countries assessed respondents' own drinking frequency in the past 12 months. To harmonize the measures across countries, this variable was coded as never (0), a few times (1), monthly (2), weekly (3), and 4 times a week or more (4). For Scotland, the latter category was 5 times a week or more.

Table 2. Study and sample characteristics according to country.

	DENMARK	FINLAND	ICELAND	NORWAY	SWEDEN	SCOTLAND
Year	Autumn 2011 drawn from the population register	Autumn 2008 drawn from the population register	Autumn 2013	Spring 2012	Spring 2013	Autumn 2012 quota sample of the population
Sample			A random sample of a representative panel group	Drawn from the population register	Drawn from the population register	
Design	Web questionnaire, telephone interviews for those not using Web	Face-to-face interviews	Web questionnaire	Computer-assisted telephone interviews	Combined postal and Web questionnaire	Face-to-face interviews
Name of survey	Danish national alcohol and drug survey	Finnish drinking habits survey	Icelandic alcohol survey	Norwegian survey on tobacco and substance use	Habits and consequences – A national survey on tobacco, alcohol, and drugs	Omnibus survey – alcohol's harm to others in Scotland
Response rates (%)	64	74	66	53	59	–
N (18–69-year-olds)	4 388	2 591	1 249	1 703	12 678	802
Characteristics of the samples (weighted data)						
N (18–69-year-olds)	4 401	2 581	1 260	1 730	13,279	855
Gender (%)						$\chi^2 = 2.35n^s$
Male/female	50.1/49.9	50.0/50.0	49.3/50.7	51.3/48.7	50.5/49.5	48.7/51.3
Age (%)						$\chi^2 = 49.76^{***}$
18–29	22.0	21.5	21.6	23.5	23.8	22.8
30–39	18.6	18.7	20.1	20.0	17.6	18.8
40–49	21.7	22.1	20.0	21.3	21.8	21.3
50–59	20.3	20.4	20.0	18.8	17.8	20.0
60–69	17.5	17.3	18.2	16.3	19.0	17.1
Education (%)^a						$\chi^2 = 517.23^{***}$
Elementary school	19.4	22.7	34.9	11.7	14.3	–
High school	42.3	44.8	36.7	45.7	41.5	–
University	38.3	32.4	28.4	42.6	44.2	–
Living place (%)^b						$\chi^2 = 28.37^{***}$
Not urban	35.6	34.9	35.7	31.4	34.8	27.8
Urban	64.4	65.1	64.3	68.6	65.2	72.2
Partner status (%)						$\chi^2 = 160.60^{***}$
Living with a partner	70.6	68.1	73.6	73.0	63.4	70.8
Not living with a partner	29.4	31.9	26.4	27.0	36.6	29.2

(Continued)



Table 2. (Continued)

	DENMARK	FINLAND	ICELAND	NORWAY	SWEDEN	SCOTLAND	
Drinking frequency (%)							$\chi^2 = 856.72^{***}$
None	3.8	10.2	12.9	10.3	9.9	19.4	
A few days	14.1	13.9	24.1	22.5	16.1	16.3	
Monthly	27.2	28.2	32.1	26.4	26.3	24.5	
1–3 times per week	40.0	40.1	25.7	38.1	41.3	35.7	
4+ times week	14.9	7.7	5.1	2.7	6.4	4.1	
Frequency of intoxication (%)							$\chi^2 = 518.49^{***}$
None	25.1	34.0	35.1	45.1	30.6	40.1	
A few days	41.1	37.2	36.9	35.9	33.3	22.0	
Monthly	23.1	19.1	19.6	13.6	21.6	19.6	
1 or more time per week	10.7	9.7	8.4	5.4	14.5	18.3	

Notes: ^aScotland has no variable for education. ^bThe definition of urban living varies between the countries. ^{***} $P < 0.001$.
Abbreviation: ns, not significant.

Table 3. Problems experienced during the past 12 months according to country (%) (weighted data).

	DENMARK	FINLAND	ICELAND	NORWAY	SWEDEN	SCOTLAND	COUNTRY DIFFERENCES
Lowest N for items	4.392	2.576	953	1.724	13.130	855	
Been afraid of a drunken person on the street or in some other public places	14.1	33.7	22.3	5.9 [†]	22.4	18.4	$\chi^2 = 640.83^{***}$
Been physically harmed by a drunken person	2.6	5.7	3.3	1.5	2.4	5.6	$\chi^2 = 123.14^{***}$
Had clothes, items or other belongings ruined by a drunken person	4.8	5.0	7.1	3.9	5.0	7.8	$\chi^2 = 27.54^{***}$
Been insulted by something a drunken person said to you	22.2	15.6	17.6	8.7	15.7	21.2	$\chi^2 = 198.71^{***}$
Been kept awake at night due to noises from a drunken person	28.0	30.5	29.4	15.2	18.5	33.0	$\chi^2 = 433.87^{***}$
At least one of five problems	44.3	52.9	52.6	25.4	37.6	46.3	$\chi^2 = 466.85^{***}$

Notes: ^{***} $P < 0.001$.[†] "Being afraid" was differently worded for Norway than the other countries and the introduction to the items differed across countries (for details, see descriptions under the Measures section and Appendix).



All countries also assessed binge drinking in the past 12 months. Binge drinking was defined as consuming about 60 g or more of pure alcohol on at least one occasion. To harmonize the answer categories of the binge drinking measures, the variable was coded never (0), a few times (1), monthly (2), and weekly (3).

The correlations between drinking frequency and binge drinking were medium-large according to Cohen's classification of effect sizes,²⁸ varying between 0.44 (Norway) and 0.69 (Scotland), with the other countries in between: Denmark (0.46), Finland (0.57), Sweden (0.57), and Iceland (0.66).

Analytic strategy and statistical analyses. First, we used Pearson's chi-square to compare the distribution of

demographics and drinking habits in the six countries (Table 2). Second, we compared the proportions of those who had experienced harm from others' drinking using Pearson's chi-square (Table 3). Third, bivariate analyses were conducted to examine the associations between experienced harm and the respondents' demographics and drinking habits. Since both the dependent and independent variables were somewhat differently measured in the respective countries, we conducted separate analyses for each country, and did not test statistically whether the correlates were significantly different between the six countries. The subgroup differences in each country were also tested using Pearson's chi-square (Table 4). Fourth, multivariate analyses were applied since we expected that some

Table 4. Proportion of respondents in each country reporting at least one of five problems during the past 12 months, by demographic variables and own drinking (weighted data).

	DENMARK N (%)	FINLAND N (%)	ICELAND N (%)	NORWAY N (%)	SWEDEN N (%)	SCOTLAND N (%)
All	4,386 (44.3)	2,576 (52.9)	891 (52.6)	1,724 (25.4)	13,008 (37.6)	855 (46.3)
Gender						
Men	2,198 (44.2)	1,288 (47.4)***	439 (51.0)	882 (25.5)	6,550 (33.3)***	417 (45.1)
Women	2,189 (44.4)	1,288 (58.3)	451 (54.1)	842 (25.3)	6,457 (41.8)	438 (47.5)
Age						
18–29	963 (71.4)***	555 (77.1)***	174 (70.1)***	406 (43.1)***	3,108 (63.6)***	195 (56.4)***
30–39	818 (46.9)	484 (59.5)	171 (55.0)	344 (29.4)	2,291 (43.3)	161 (50.9)
40–49	951 (43.0)	570 (50.2)	176 (49.4)	368 (19.0)	2,835 (31.4)	182 (46.7)
50–59	885 (34.5)	524 (43.7)	188 (48.9)	325 (20.0)	2,310 (25.5)	171 (40.9)
60–69	768 (20.7)	444 (29.5)	181 (40.3)	282 (9.9)	2 466 (17.7)	146 (34.2)
Education						
Elementary school	833 (38.5)***	583 (42.9)***	283 (51.2)	194 (21.1)	1,757 (29.7)***	–
High school	1,814 (45.0)	1,156 (57.0)	330 (53.6)	768 (25.4)	5,178 (38.0)	–
University	1,643 (46.7)	837 (54.0)	242 (53.7)	713 (27.2)	5,515 (40.2)	–
Living place						
Not urban	1,556 (32.0)***	900 (41.0)***	335 (46.3)**	539 (22.8)	4,542 (30.6)***	237 (42.2)
Urban	2,805 (51.2)	1,676 (59.2)	555 (56.4)	1,176 (26.7)	8,465 (41.3)	617 (48.0)
Partner status						
Living with a partner	3,095 (39.6)***	1,755 (48.3)***	648 (49.5)**	1,258 (21.1)***	8,273 (31.3)***	606 (42.4)***
Not living with a partner	1,285 (55.5)	820 (62.7)	210 (60.0)	463 (37.1)	4,734 (48.5)	249 (55.8)
Drinking frequency						
None	160 (35.6)***	262 (51.5)***	106 (52.8)*	177 (14.7)***	1,242 (37.0)***	164 (42.7)
A few days	596 (44.6)	355 (50.7)	221 (57.5)	338 (20.4)	2,084 (39.8)	138 (52.9)
Monthly	1,146 (48.7)	725 (59.7)	285 (55.4)	455 (29.9)	3,414 (42.4)	208 (47.6)
1–3 times per week	1,692 (45.2)	1,037 (50.7)	229 (48.9)	657 (28.0)	5,375 (34.7)	303 (45.2)
4+ times week	630 (37.8)	197 (44.7)	46 (30.4)	45 (26.7)	830 (31.0)	35 (45.7)
Frequency of intoxication						
None	1,041 (36.5)***	821 (47.0)***	309 (50.2)	765 (18.4)***	3,923 (33.0)***	323 (46.1)
A few days	1,709 (39.8)	899 (56.0)	327 53.5	610 (26.6)	4,312 (36.5)	178 (43.8)
Monthly	962 (54.7)	462 (57.1)	166 (59.0)	231 (39.4)	2,797 (43.2)	159 (49.1)
1 or more time per week	447 (60.2)	234 (56.4)	73 (46.6)	92 (41.3)	1,873 (41.2)	147 (51.0)

Notes: * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.



of the revealed subgroup differences in experienced harm from others, at least partly, would reflect different levels of the other independent variables. For example, the different level of harm in various age groups may reflect that drinking habits vary across age groups. To account for this, multiple logistic regression analyses were conducted to examine which correlates were statistically significant, when the effects of all other correlates were controlled for (Table 5). All analyses were conducted using SPSS version 22.

Results

Demographic characteristics and drinking habits.

Table 2 presents the demographic characteristics and self-reported drinking habits of respondents in each country. There were no statistically significant differences in the gender distribution across the six countries. While there was a significant difference in the age distribution, inspection of the percentages indicates only small country differences. Similarly, there were relatively small but statistically significant differences in the proportions who were not living with a partner and who lived in urban areas. Based on the authors' general inspection, the most pronounced and statistical significant difference was for education. The proportion with university-level education was lower in Iceland and Finland than in the other Nordic countries. Unfortunately, we have no data on educational level in the Scottish sample.

There were pronounced differences in self-reported drinking habits between the six countries. Total prevalence for weekly drinking, which refers to a drinking frequency of 1–3 times per week and 4 or more times per week, was most common in Denmark, followed by Finland and Sweden, while it was somewhat lower in Norway and Scotland and lowest in Iceland. For drinking to intoxication one or more

times per week, however, the pattern differed. The proportion was highest in Scotland and Sweden, followed by Denmark, Finland, and Iceland. Weekly binge drinking was least common in Norway.

Prevalence of experienced harm from other people's drinking. As shown in Table 3, the proportions of people who had experienced at least one of the five specified problems in the past 12 months, which ranged from 25% to 53%, were highest in Finland and Iceland, followed by Scotland and Denmark. The level of such experiences was lower in Sweden and lowest in Norway.

When looking at each of the five specific problems, being kept awake at night was the most frequently mentioned harm. Country differences were particularly pronounced for being afraid of a drunken person; here the prevalence was more than fivefold in Finland compared to Norway. Note that the difference seen in being afraid of a drunken person could be due to wording differences (see Discussion). Similarly, the proportion who reported being physically harmed was more than threefold in Finland and Scotland as opposed to Norway.

Correlates of experienced harm from other people's drinking. Table 4 shows the proportions of people who reported experiencing at least one of the five problems by demographics and own drinking habits. Among demographics, age was most consistently correlated with experienced harm. In all six countries, a larger proportion among the young reported having experienced harm from other's drinking. Similarly, respondents who did not live with a partner reported more often harm from others than those who lived with a partner. There was also a tendency of a higher level of harm among urban residents, albeit not statistically significant in all countries. With the exception of Iceland and Norway, there was a statistically significant higher level of harm among respondents with high school/university

Table 5. Odds ratios from multiple logistic regressions predicting experiences of at least one of five problems during the last 12 months. Separate analyses for each country (weighted data).

	DENMARK	FINLAND	ICELAND	NORWAY	SWEDEN	SCOTLAND
N	4,183	2,427	855	1,662	12,312	757
Women ^a	1.07	1.68***	1.05	1.13	1.66***	1.11
Age ^b						
50–59	2.05***	1.78***	1.44	2.24**	1.55***	1.25
40–49	2.92***	2.21***	1.52	2.05**	2.10***	1.66*
30–39	3.42***	3.38***	1.81*	3.45***	3.52***	1.89*
18–29	8.02***	6.88***	2.94***	4.85***	6.88***	2.04**
Urban ^c	1.93***	1.88***	1.47**	1.13	1.44***	1.10
Not living with a partner ^d	1.40***	1.43***	1.21	1.54**	1.52***	1.45*
Frequency of intoxication ^e						
A few days	0.99	1.16	1.01	1.32*	1.05	0.86
Monthly	1.29*	1.10	1.08	1.82**	1.25***	0.99
1 or more time per week	1.38*	1.05	0.72	1.99**	1.49***	1.13

Notes: ^aGender: 0 = male. ^bAge: 0 = 60–69 years. ^cLiving place: 0 = not urban. ^dPartner: 0 = living with a partner. ^eFrequency of intoxication: 0 = not intoxicated last 12 months. * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$.



education compared with respondents with elementary education. Whereas experienced harm from others' drinking was most common among women in Finland and Sweden, there were no gender differences in the other countries.

With respect to drinking frequency (Table 4), the level of harm from others' drinking was higher among moderate drinkers: ie, those who reported drinking monthly or a few times the past 12 months, than among those who did not drink and those who drank relatively often. In Scotland, there was no statistically significant difference in harm between the different drinking groups. For frequency of binge drinking, the proportion who reported harm from others was highest among those who most often were binge-drinkers themselves: ie, on a monthly or weekly basis. In Iceland and Scotland, there were no statistically significant differences in harm between the different binge-drinking subgroups.

Table 5 presents the odds ratios from logistic regressions for each country and displays which correlates were statistically significant when controlling for all other correlates. Due to high correlations between the frequency of drinking and the frequency of binge drinking in some of the countries, only the latter was included in the regression analyses. It is reasonable to assume that people experience harm related to others' drinking more often when they themselves binge-drink than when they drink per se. Since no data on educational level was available for Scotland, this variable was excluded from the regression analyses.

The findings from the regression analyses largely resembled those from the bivariate analyses. Consistent with the bivariate analyses presented in Table 4, young people consistently reported more harm than other people across all countries, and women reported more harm than men, but this gender difference was only statistically significant in Finland and Sweden. Moreover, with the exception of Norway and Scotland, urban residents were more likely to report more problems.

In Iceland, the difference between those who lived with a partner and those who did not was no longer statistically significant when controlling for the effect of the other independent variables. In all other countries, the likelihood of a higher level of harm experienced among those who did not live with a partner continued to be evident. Moreover, the findings for binge drinking changed in Finland: the level of harm did not vary according to own binge-drinking when controlling for the effect of the other variables.

Discussion

This study examined reports of the experiences of five types of harm due to others' drinking in five Nordic countries and Scotland. The results showed that the specific harm from others drinking addressed in this study are commonly experienced in all six countries (28%–53%), of which being kept awake at night is the most common harm (15%–33%) while being physically harmed is the least common (2%–6%). The cross-country

comparisons indicate that residents in Finland and Iceland experience such harm more often than residents in the other Nordic countries and Scotland. The proportion who reported harm from others' drinking was lowest in Norway and relatively low in Sweden. Although the proportion who reported harm varied considerably between the countries, the correlates of such harm were relatively consistent across countries.

Prevalence of experienced harm from other people's drinking. Thus, the results of our study partly replicate the findings from a Nordic comparison conducted in the late 1990s (which did not include Scotland and Iceland), in which women from Norway reported less harm from others' drinking than women from Denmark, Finland, and Sweden.¹³ Moreover, Norwegian men reported fewer problems than men from Sweden and Denmark. However, the earlier finding of a lower level of harm among Finnish men than among Danish and Swedish men was not replicated in the present study. The current findings may reflect the fact that the sale of alcohol has increased considerably in Finland since the last comparison and has surpassed the latest sale figures in Sweden and is at the same level as Denmark.²⁹

The different levels of harm in the six countries may partly reflect different designs of the included surveys. Regarding the methods for data collection, a previous study indicates that the level of self-reported harm from others' drinking may be higher in surveys using telephone interviews than in surveys using the Web.³⁰ However, based on the authors' general inspection, there was no systematic variation between data collection methods and level of harm between the studies in our comparison.

As described in the Methods section, Finnish respondents were asked about episodes only in public places where the perpetrator(s) were unknown or partly known to the respondent. In the other countries, there were no restrictions regarding the location or familiarity of the perpetrator(s). Although there are reasons to assume that the majority of the reported episodes occur in public settings,³¹ and thus are also covered by the Finnish data, one could probably expect the level of harm in Finland to be even higher than our study suggests.

The lower level of harm in Norway than in the other countries may partly reflect different wordings of the questions. The largest difference between Norway and the other countries was found for the proportion of people who had been afraid of a drunken person. In Norway, respondents were asked about being afraid of being hurt by someone under the influence of alcohol, whereas in the other countries they were asked about being afraid of someone who had been drinking or was drunk. However, there were also considerable differences in the types of harm mapped with questions that were similarly phrased, for example, being physically hurt. The higher level of the most severe harm reported (being physically harmed by other drinkers) in Finland and Scotland may reflect higher overall consumption (ie, data from sales figures) and higher intoxication drinking pattern and also the higher prevalence of risky drinking reported in the surveys in these countries. It should be noted



that in this study, high consumption of spirits was used as a proxy for a drinking pattern characterized by intoxication. However, studies conducted in Scotland among patients with serious alcohol problems found that cheap alcohol, in particular vodka and white cider, accounted for most of the units consumed by heavy drinkers.³² Thus, it could be that use of other alcoholic beverages than spirits such as white cider may be used as a proxy for drinking to intoxication, also in the general population.

The registered sale of alcohol per inhabitant is higher in Finland than in Norway and Sweden. Registered sales figures in Iceland are also low (Table 1).³³ Data on self-reported drinking habits (Table 2) indicate less frequent drinking in Iceland and Norway than in the other Nordic countries. Furthermore, available indicators of drinking habits suggest that the Finnish drinking culture is more intoxication-oriented than in Norway but not necessarily more than in Sweden (Table 1).^{1,33} Consistent with this are the figures on self-reported intoxications, which suggest that binge drinking is more common in Finland and Iceland than in Norway. With regard to monthly or more frequent binge drinking, however, the proportion was higher in Sweden than both in Finland and in Iceland.

To sum up, this study shows that harms from other's drinking are commonly experienced in all six countries, and being kept awake at night is the most common harm while being physically harmed is the least common. Regarding the relative large country differences revealed in experienced harm from others drinking, a lower consumption level and less intoxication-oriented drinking habits as well as a stricter alcohol policy may partly explain the lower level of self-reported harm in Norway than in the other countries. Similarly, the high level of harm in Finland may be related to a fairly high consumption level and an intoxication-oriented drinking culture. It is more difficult to apply such explanations to the high level of self-reported harm in Iceland and the fairly low level in Sweden. Other possible explanations may be related to varying tolerance of drinking and drunkenness in general.^{19,21} To our knowledge, no previous studies have compared the tolerance of drinking in the majority of our study countries or have provided other results that could shed light on this issue.

Correlates of experienced harm from other people's drinking. Although the findings from this study have shown different levels of self-reported harm related to other people's drinking in the six countries, the correlates appear to be similar across the countries. In accordance with the findings from several other studies,^{3,7,25} experienced harm from others' drinking was more common among young people than among older people.

Whereas the proportions that experienced at least one of the five specified problems were higher among women than among men in Finland and Sweden, there were no gender differences in the other countries. Another study found more consistent gender differences across countries when persons were asked to report whether they had been negatively affected by a heavy drinker in their life (ie, a family member, a girlfriend/boyfriend, or another person close to them), ie, women were more likely

to report this in all the Nordic countries.³⁴ While the current study asked about specific types of harm, Ramstedt et al's study asked to what extent respondents perceived that a heavy drinking person close to them had negatively influenced their life. In our study, psychological distress and worries related to others alcohol use is not included as a type of harm. In the other study however, worries related to others' use of alcohol are likely to represent one type of harm perceived by the respondents, and previous research has shown that women are significantly more likely to worry about others' alcohol use than men.³⁵ Thus, the above findings suggest that it depends upon the type of harm being studied as to whether or not gender differences will be observed in harm experienced from others' drinking.

Consistent with a previous study from Norway,²⁵ we generally found a significantly higher level of harm among those who were single, urban residents, and highly educated. Moreover, the findings from previous Nordic studies that have indicated a higher level of harm among those who most often were intoxicated themselves were partially replicated.^{13,25} Controlling for the other correlates, own intoxication was significantly correlated with experienced harm in Denmark, Norway, and Sweden, but not in the other countries.

Methodological considerations and suggestions for further research. The present paper is based on six national surveys conducted within a five-year period (2008–2013). These were carried out separately according to national priorities and interests and thus had no original, unifying coordination. This resulted in different phrasing of the questions on experienced harm from others' drinking and of the independent variables included in the analyses, eg, own alcohol use. Furthermore, both sampling and methods of data collection differed. A better approach would have been to plan the surveys as a comparative exercise from the start so that more comparable measures could be obtained and used. When designing comparative studies, future studies addressing experienced harm from others drinking should also consider using statistical analyses including aggregate-level data (eg, overall sales of alcohol and measures of alcohol control policies) in addition to the individual-level data applied in the current study, as these may affect the level of experienced harm. Examining cross-national changes over time would also be a valuable extension of the current study, although that would require a larger sample of countries than was available for this study. In addition, it could be useful to include data from additional countries with more differing drinking cultures than those included in our study.

A recent review shows that studies applying an aggregate level strategy for evaluating self-report of alcohol use, ie, comparisons of alcohol sales and tax, have found evidence that survey self-reports vastly underestimate total alcohol consumption. In addition, the review shows that persons who drink heavily are less likely to participate in surveys.²⁷ Based on these findings, both alcohol use and the level of experienced harm from others' drinking reported in the respective countries most likely represent underestimates.



The five specific consequences compared in our paper do not cover the full range of possible negative consequences from other people's drinking, and future studies should aim to cover a broader range of harm, eg, psychological distress and worries related to others' alcohol use.³⁵ From a comparative perspective, it would also be important to include variables that could help us to understand the observed country differences in experienced harm. For example, it would be useful to include measures on tolerance of or attitudes toward drinking and drunkenness in general.^{19,21} Finally, for preventive purposes, a useful extension of this study would be to map at which location people typically are harmed by others' alcohol use and who the perpetrators usually are, as well as to examine how this varies across countries.³¹

Conclusions

This study shows that all the six countries examined had sizable proportions of respondents who experienced harm from others' drinking, a finding which implies that harm from other people's alcohol use is an important issue to consider when making political decisions.³⁶ However, the difference in the level of experienced harm was relatively large across countries with fairly similar drinking patterns. The proportions of respondents who reported at least one of the five problems related to other people's drinking were highest in Finland and Iceland and lowest in Norway. Although the prevalence varied considerably between the six countries, the pattern of association between correlates and experienced harm was similar across countries. Overall, this study showed that experienced harm from others' drinking was more common among young people than among older people, and more common among women than men. Moreover, we found a significantly higher level of harm among those who were single, urban residents, and highly educated. Finally, those who reported being frequently intoxicated themselves experienced a higher level of harm than those who seldom drank to intoxication.

Future research would benefit from including a variety of additional variables, at both aggregate and individual levels, such as alcohol sales figures and attitudes toward alcohol use in general. These may help us to better understand the observed differences in experienced harm from others' drinking across countries.

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Author Contributions

Contributed to study design: ISM, EES, ES, IOL, KB, AH, MR, PH, SK. Analyzed the data: EES. Wrote the first draft of the manuscript: EES, ISM. Contributed to the writing of

the manuscript: ISM, EES, ES, IOL, KB, AH, MR, PH, SK. Agree with manuscript results and conclusions: ISM, EES, ES, IOL, KB, AH, MR, PH, SK. Jointly developed the structure and arguments for the paper: ISM, EES, ES, IOL, KB, AH, MR, PH, SK. Made critical revisions and approved final version: ISM, EES, ES, IOL, KB, AH, MR, PH, SK. All authors reviewed and approved of the final manuscript.

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Appendix

Wording of items used in the questionnaires of the six countries.

COUNTRIES	WORDING OF ITEMS ¹
Afraid	
Denmark	... has it ever happened that you have been afraid of a drunk person (or more) on the street or in another public place?
Finland	... has it ever happened that you have been afraid of drunken people on the street or in some other public place?
Iceland	... has it ever happened that you have been afraid of a drunk person (or more) on the street or in another public place?
Norway	... has it ever happened that you have you been in a situation where you have been afraid that someone who was under the influence of alcohol would hurt you?
Sweden	... has it ever happened that you have been afraid of a drunk person (or more) on the street or in another public place?
Scotland	... has someone who has been drinking made you afraid when you encountered them on the street?
Physically harmed	
Denmark	... has it ever happened that you have been physically harmed by a drunk person (or more)?
Finland	... has it ever happened that you have been hit, pushed, or tackled by a drunken person in a public place?
Iceland	... has it ever happened that you have been physically harmed by a drunk person (or more)?
Norway	... has it ever happened that you have you been physically harmed by someone who was under the influence of alcohol?
Sweden	... has it ever happened that you have been physically harmed by a drunk person (or more)?
Scotland	... has someone who has been drinking harmed you physically?
Clothes/belongings ruined	
Denmark	... has it ever happened that you have had clothes, items, or other belongings ruined by a drunk person (or more)?
Finland	... has it ever happened that you have had belongings destroyed by or has lost property to a drunken person?
Iceland	... has it ever happened that you have had clothes, items, or other belongings ruined by a drunk person (or more)?
Norway	... has it ever happened that you had your clothes or other belongings of some value been damaged by someone who was under the influence of alcohol?
Sweden	... has it ever happened that you have had clothes, items, or other belongings ruined by a drunk person (or more)?
Scotland	... was your house, car, or property damaged because of someone else's drinking?
Insulted	
Denmark	... has it ever happened that you have been insulted by something a drunk person (or more) said to you?
Finland	... has it ever happened that you have been insulted by a drunken person in a public place?
Iceland	... has it ever happened that you have been insulted by something a drunk person (or more) said to you?
Norway	... has it ever happened that you have you been shouted at or insulted by someone who was under the influence of alcohol?
Sweden	... has it ever happened that you have been insulted by something a drunk person (or more) said to you?
Scotland	... has someone who has been drinking called you names or otherwise insulted you?
Kept awake	
Denmark	... has it ever happened that you have been kept awake at night due to noises from a drunk person (or more)?
Finland	... has it ever happened that you have been kept awake at night due to noise from a drunken person on a street or in the neighborhood?
Iceland	... has it ever happened that you have been kept awake at night due to noises from a drunk person (or more)?
Norway	... has it ever happened that you have been kept awake at night by noise from drunken people in the neighborhood or in the street?
Sweden	... has it ever happened that you have been kept awake at night due to noises from a drunk person (or more)?
Scotland	... have you been kept awake at night by drunken noise?

Note: ¹The introduction to the items differed across countries (for details, see descriptions under the Measures section).