THE INFLUENCE OF SOCIETAL LEVEL FACTORS ON MEN’S AND WOMEN’S ALCOHOL CONSUMPTION AND ALCOHOL PROBLEMS

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Abstract — Aims: To identify the pattern of gender differences in drinking across societies, and to its association with other societal characteristics. Methods: The aggregated results of GENACIS project surveys in 29 countries were examined and were compared with other characteristics of these societies. Results: In all the participating societies men’s drinking was more prevalent and heavier than women’s drinking. Differences between countries in the gender gap in drinking were strongly associated with women’s position in society, as well as with modernization. Similar results were obtained for indicators of alcohol’s adverse consequences. Conclusions: Gender differences should be studied not only as individual behaviours, but also as societal traits, associated with other characteristics of the social system.

INTRODUCTION

The attempts to describe, analyse, and explain the drinking behaviour of individuals and its consequences, should not blind our eyes to the distinctions between societies. These distinctions are based on several scientific traditions. The study of public health, and particularly epidemiology, as disciplines is one of these. The epidemiology of health problems justifies examining societal differences on several grounds. One of these is that there are genuine population-level risk factors. These risk factors are significant and independent both analytically and ontologically. Population characteristics often serve as catalysts or as modifiers of individual-level processes. Thus, for example, living at subsistence level may have very different implications in a poor society than in a rich one (Pearce, 2000).

Another major scientific tradition underlying the study of populations, such as whole societies or regions, is the tradition of social sciences. Early in the 19th century Quetelet (1842) showed that countries and populations differed regularly in crime rates. Later in that century Durkheim (1951) argued strongly that societal facts are as unique as individual characteristics, and that they should be explained by other societal facts. Based on a series of earlier studies he was able to explain temporal and regional variations in the rates of suicide by social and cultural characteristics. Anthropologists have often adopted a more holistic approach, characterizing whole societies (mostly non-industrialized ones) by themes underlying their cultural traits. Thus, Benedict (1934) characterized some of the tribes that she studied as having an Apollonian or a Dionysian culture.

The study of alcohol use and its consequences at the country level has led to a growing body of knowledge about differential consumption patterns that reflect differences in culture, tradition, religion, social position, income, occupation, gender, region, and a host of other factors. They also often change over time and may vary considerably across social groups (e.g. Pittman and White, 1991; Heath, 1995; Hibell et al., 2001). There is already a tradition of attempts to distinguish among societies by their distinct patterns of alcohol consumption. In the last decade or two some of these attempts are expressed in attempts to distinguish between ‘wet’ and ‘dry’ countries. This distinction (which initially seemed to be based on the average amount of alcohol consumed in a country and its correlates) is based on several former attempts to classify countries (Room and Makelä, 2000). These attempts tried to characterize ‘drinking cultures’ and to identify some of their social correlates. Thus, there are claims that several southern European countries share some aspects of a drinking culture.

The ‘wet’–‘dry’ distinction has often been used to describe a continuum which is closely associated with the amount of alcohol consumed and the prevalence of drinking, but (presumably) has several other characteristics as well. Thus, wet countries are often characterized by a high rate of drinkers (and few abstainers), consumption of low or moderate alcohol quantity at a time, a large number of situations in which drinking is common and perhaps normative, drinking mostly at meals (typically wine), frowning on insobriety, and widespread mechanisms of informal social control of drinking. Generally speaking, these are described as societies in which alcohol consumption is well-integrated into the daily conduct of social life. In dry cultures the opposite conditions prevail: occasions of consumption are relatively rare, consumption is frowned upon, and there is a high proportion of abstainers.

While these descriptions are somewhat stereotypical they seem to convey a distinction that does exist in reality. Thus, wet countries are exemplified by the southern European, Mediterranean countries, and typical dry cultures are exemplified by the Scandinavian countries and the United States. However, some recent studies suggest that even if the two types did exist in the past, the differences have begun to disappear, at least in Europe, and there is a convergence of the modes, quantities, and situations of drinking (Allamani et al., 2000; Leifman, 2001). Other studies suggest that while the wet–dry continuum may have been useful for characterizing European cultures, the classification of other countries, mostly

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from South America, Asia, and Africa, may require the addition of other dimensions (Room and Mäkelä, 2000).

**Gender differences**

The hypothesis that gender differences in drinking are associated with gender differentiation in social roles and statuses has already been discussed, particularly since there have been suggestions that the gender-related drinking patterns tend to converge (cf. Bloomfield et al., 2001). If the gender gap in drinking is a consequence of gender-based role differentiation, one should expect such convergence to be the result of the growing equality achieved by women.

**Purposes**

The present study has the following goals:

(i) To describe the differences between men and women in alcohol consumption and some of its adverse consequences across societies and to identify some of its predictors; that is, to look for societal correlates of rates of alcohol consumption by men and women.

(ii) To examine the association between gender inequalities and male–female differences in alcohol consumption and consequences.

**METHODS**

**Drinking indicators**

The data for this paper were obtained from several sources: data on the extent of alcohol consumption were obtained mostly from the current EU concerted action (please see the introduction to this special issue) and the broader GENACIS project (please see www.genacis.org for information on the survey characteristics of the GENACIS study countries listed in Table 3). The major exceptions were as follows:

(i) In certain analyses WHO’s Global Alcohol Database (WHO, 2003) was used. These cases are explicitly noted, so that unless it is otherwise stated, the data are from the GENACIS surveys.

(ii) For some countries data from two or more surveys were available; for example from the ECAS project (Norström, 1999) as well as GENACIS. In these cases the mean of the two sources was used.

The major indicator of the extent of drinking was current drinking—the percentage of the population which had any alcohol consumption during the past year. This variable is rather crude, distinguishing mostly between drinkers and non-drinkers, and reveals little about the pattern of drinking. A more refined indicator (which may be related to the intensity of drinking as well) is the percentage of drinkers who drank alcohol during the past week ('weekly drinkers'). The major indicator of the intensity of drinking was the percentage of drinkers who consumed >8468 g alcohol during the past year ('heavy drinkers'). This cut-off level indicates an average of one ounce of alcohol per day (i.e. 23.2 g ethanol per day). Both weekly drinking and heavy drinking were assessed only for current drinkers. Therefore, these figures may be more sensitive to differences in the definition of the base population. Both weekly drinking and heavy drinking are based on the highest tail of their respective distributions (of the frequency of drinking and of the typical daily alcohol consumption), and both may be sensitive to the age distribution in each country. In order to avoid that problem, the drinking intensity variables (weekly drinking, heavy drinkers, and heavy episodic drinking) were assessed only for the 18–34 year age group.

**Consequences**

Alcohol consumption has been associated with a large number of problems. Many of these are subject to differences in cultural assessment, and thus are unsuitable for country-level analyses. We decided to limit ourselves to the extreme tails of the problems distributions, and only to those indicators which have the most detailed, ‘objective’ definitions. Thus, two indicators of acute health consequences at the country level were used: one was the standardized death rate from liver cirrhosis, and the other, death rates from motor vehicle crashes (cf. Stockwell et al., 2000). While each of these phenomena is caused by other factors as well, they do reflect (at least to some extent) the effects of intoxication, too. In fact, the rate of death from liver cirrhosis is often used as a proxy for the rate of alcohol problems (Norstrom and Skog, 2001; Nemtsov, 2002). These rates, broken down by gender, were available from the Global Status report on Alcohol (WHO, 1999).

Another indicator of acute consequences was available from the GENACIS surveys only. This was the rate of alcohol-related physical aggression by a spouse or partner, as was calculated by another work group in the present study (see Bloomfield et al., 2005). This indicator was selected due to its significance within the context of alcohol-related gender relationships.

**Other variables**

Several other variables were used to describe and characterize participating countries. These included two major indicators of each country’s standard of living: the gross domestic product per capita (GDP), and the Human Development Index (HDI). The HDI is an index developed by the United Nations Human Development Program and combines indicators of the chances for long healthy life, indicators of educational level and standard of living. Thus, it may be considered an index of a country’s well-being, or of the quality of life. The Gini index of income was used as a common index of inequality in income. Three indicators of women’s position in society were used: the rate of fertility, the rate of divorce, and the Gender Empowerment Measure. The latter is an index (developed by the UN Human Development Project) that combines indicators of political and economic participation and power over economic resources. Hofstede’s Cultural Masculinity index was also used as an indicator of the values that dominate in a society. This index is based on an analysis of questionnaires filled by employees of a large, multinational corporation, and was found in many studies to be correlated with gender differences (Hofstede, 1991; Van de Vliert, Schwartz et al., 1999). In addition, two variables that reflect a country’s modernization were used. The rate of urbanization (World Bank, 2000) was used as an indication of a modern life style, while the rate of church attendance
tries in the project at the time of this analysis (EU concerted action as well as countries participating in the broader GENACIS project. The decision to include all countries in the project at the time of this analysis (n = 29) was based mostly on the desire to increase the number of units of observation, and thereby the validity of the findings. However, the reader should be aware that this decision might have two side effects. Increasing the number of countries, and particularly the inclusion of countries from Asia, Africa, and Latin America, clearly increases the variability of some variables. This could lead (i) to higher correlations where only very low ones might have been observed if only the EU countries were included; and (ii) to masking some of the relationships among variables that might be observed if only EU countries were to be included. The reader should be aware that while 29 countries were included in the analysis, the number included in any specific analysis was lower, due to missing values.

GENDER AND DRINKING

Development of a measure of women’s status

As one of the major issues in this project is the status of women in society, several approaches to the measurement of this variable were attempted. The major variables were women’s participation in the labour force (as compared to men’s), women’s proportion in managerial positions, women’s proportion in the parliament and in higher education, and the difference between men’s and women’s earnings (indices of occupational segregation were attempted but were dropped as they did not yield consistent results). Some other variables, reflecting mostly public opinion, were based on the World Values Study (Inglehart et al., 2003), for example, the per cent (in each country) endorsing statements such as:

- ‘When jobs are scarce, men have more right to a job than women.’
- ‘in your home, who does the laundry?’

Data from another survey (the International Social Survey) (ISSP, 2003) yielded information on the domestic division of labour, for example, the per cent answering ‘mostly the woman’ to questions such as:

- ‘in your home, who does the laundry?’

In addition, two more global indicators were taken from available sources. First, the Gender Empowerment Measure (GEM) from the United Nations’ Human Development Project (United Nations, 2002a) was used. This is a composite index measuring gender inequality in three basic dimensions of empowerment: economic participation; economic decision-making; and power over economic resources, and as such, it is an index of women’s involvement in the economy. Second, Hofstede’s index of cultural masculinity (MAS) was used (Hofstede, 1991, 2001). The theory underlying this index is that societies differ along a cultural dimension which may allow one to designate them as more or less oriented toward traditional male values (e.g. power and toughness). Those societies which score higher on this orientation are also the ones that make a sharper distinction between male and female social roles.

Several approaches were used to construct a new index of gender equality. However, they suffered from several problems, the most prevalent being the increasing number of missing values as the number of variables increased. In the end we used the following approach: standard scores were calculated for each of the following variables: the GEM, percentage of women in the parliament, women’s labour force participation as a percentage of men’s, women’s earnings compared with men’s, women’s proportion in higher education, and the country’s score on the attitudes factor mentioned above. A country’s mean standard score on these variables (or those of them for which information was available) was named its ‘Gender Equality Score’ (GES).

This approach has several advantages. First, it provides us with scores for all the countries in the sample. Second, it has face validity, as it is based on women’s position in a variety of domains. Third, this score seems to have good psychometric properties: it had a Cronbach alpha of 0.89 (n = 19) with all six variables included and alpha of 0.84 (n = 20) with 5 variables (without the attitudes factor score).

This index of women’s equality is correlated at r = 0.85 with the GEM, r = 0.43 with Egalitarianism, and r = –0.61 with Hofstede’s cultural masculinity (with Ns of 22, 16, and 21 and significance of 0.01, 0.10, and 0.01, respectively). It also correlated well (r = 0.41 to r = 0.79) with the extent of change in the traditional family (Stockard and O’Brien, 2002), with the availability of substantive benefits for working parents (Lin Chang, 2000), and a country’s extent of women-friendly institutions (Stockard and O’Brien, 2002), although these correlations had to rely on small samples of 11 countries.

Ranking the countries by the GES (emancipation) score puts the five Nordic countries at the top, followed by France and Canada, and Sri Lanka, India, Nigeria, and Costa Rica at the bottom. This may suggest that the GES is associated with economic development. Indeed, it is correlated at 0.71 (P < 0.011) with income per capita (GDP) across the 29 participating countries. This association should be borne in mind while considering the correlations between the GES and other variables. This correlation may pose some limitations on the analyses of the effects of the GES. We shall try to overcome these limitations by using two strategies. First, we shall try to control the effect of economic prosperity statistically. Second, we shall present the effects of some other background variables, typically associated either with economic prosperity or with women’s status, in addition to the effects of the GES.

ALCOHOL CONSUMPTION AND ITS CORRELATES

In order to pursue our first goal (prediction of alcohol consumption) we examined the differences in alcohol consumption, for men and women, across countries. Figure 1 presents the percentage of current drinkers (at least once during the past 12 months) in our sample countries by gender. Countries are ordered by the percentage of male drinkers. A quick glance at the figure reveals several interesting features of the drinking behaviour in the 24 countries presented.

To begin with, the range of the prevalence of current drinkers is rather wide: from 42 to 93% for men, and from 6 to 91%
for women. This wide range reflects, to some extent, our
decision to include several non-western countries in the sam-
ple. Thus, the 10 countries with the lowest rate of drinkers
include 7 non-European countries. In contrast, the 14 countries
with higher rates of drinkers have a narrower range (from
Iceland, with 87% to Austria, 93%, a range of 6%), and 12 of
the 14 countries in this part of the figure are European. Thus,
the European countries have a higher rate and less variation
than the non-European ones.

Another thing that may be observed in Fig. 1 is that
women’s drinking rates are, without exception, lower than
men’s. Yet, despite the lower drinking rates, the variability
of women’s rates seems to be far larger than that of men’s.
Indeed, the standard deviation of the women’s rates is 22.9,
compared with 15.4 for men (the coefficient of variation is
0.19 for men’s rates, 0.35 for women’s).

Figure 2 presents weekly drinkers as a percentage of all cur-
tent drinkers. As these figures are computed only for current
(past year) drinkers, they are rather independent of the rates
of drinking. Men’s rates of weekly drinking cover the whole
range from 16% (Sri Lanka) and 31% (Sweden) to 85%
(Netherlands) and 86% (Austria). Women’s rates are in all
cases lower than men’s. The difference between genders
ranges from 3.4% in Brazil and 10.6% in Sri Lanka to 30%
and 37% in Uganda and Argentina, respectively. As Figure 2
shows, the European countries predominate in weekly drink-
ing, too, and they comprise eight of the highest 10 countries
in weekly drinking, and only four of the lowest ten.

Figure 3 presents the rates of heavy drinkers as per cent
of current drinkers (note: in Argentina and Sri Lanka the
women’s rate is 0). This figure is far less regular than the for-
ter two and it presents wide variations in the rates, for men as
well as for women. While 13 of the 22 countries present male
heavy drinkers rates within the range of 15–27%, five
countries (the Czech Republic, Austria, the UK, Nigeria, and
Uganda) present considerably higher rates (a more focused
analysis shows that the UK, Nigeria, and Uganda are outliers
in the male figures, and Nigeria and Uganda among the
females).

Figure 3 suggests that the difference between men’s and
women’s rates of heavy drinking is positively associated
with the rate of men’s heavy drinking. That is, the higher the
rate of men’s heavy drinking, the higher the difference
between men’s and women’s rates. Apparently, men’s heavy
drinking affects the gender gap more than women’s.

COUNTRY CHARACTERISTICS AND ALCOHOL
CONSUMPTION

Table 1 presents the correlations between some country char-
acteristics and indicators of male and female drinking (two
countries, Uganda and Nigeria, were excluded due to extreme
values which distorted the correlation coefficients). The table
shows that the prevalence of drinking (current-year drinkers)
is quite strongly associated with urbanization, economic
development (GDP), and with the Human Development Index
(HDI), and moderately correlated with the rate of divorce. It is
also associated, although negatively, with religiosity (the rate
of weekly church-going), and with fertility rates.

The correlations in Table 1 suggest that the prevalence of
drinking (men’s and women’s) is associated with moderniza-
tion. The intensity of drinking (the rates of weekly drinkers
and of heavy drinkers) is essentially not correlated with the
societal indicators: none of the correlations in these columns
is significant, and the mean absolute magnitude of the correla-
tions of these variables is merely 0.16.
COUNTRY CHARACTERISTICS AND ALCOHOL PROBLEMS

Table 2 presents the correlations between some of the adverse consequences of drinking (for males and females separately) with selected country characteristics.

The most visible feature of Table 2 is the predominance of negative correlations: most of the correlation coefficients, and all the significant ones, are negative. This shows that mortality from these alcohol-related factors, in men as well as in women, is negatively associated with the country’s standard of living (GDP and HDI), and with rates of urbanization. It
Table 1. Correlations of country characteristics with male and female drinking (correlation coefficients, significance, and N's)

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP/cap.</td>
<td>0.72 0.76</td>
<td>0.33 0.33</td>
<td>0.07 –0.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>0.01 0.01</td>
<td>0.13 0.13</td>
<td>0.78 0.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>24 24</td>
<td>22 22</td>
<td>22 21</td>
<td>20 20</td>
<td></td>
</tr>
<tr>
<td>HDI</td>
<td>0.81</td>
<td>0.70</td>
<td>0.14 0.17</td>
<td>0.11 –0.20</td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>0.01 0.01</td>
<td>0.52 0.45</td>
<td>0.63 0.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>24 24</td>
<td>22 22</td>
<td>22 21</td>
<td>20 20</td>
<td></td>
</tr>
<tr>
<td>Gini</td>
<td>–0.69 –0.65</td>
<td>–0.21 –0.11</td>
<td>0.04 0.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>0.01 0.01</td>
<td>0.37 0.63</td>
<td>0.87 0.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>22 22</td>
<td>20 20</td>
<td>20 19</td>
<td>18 18</td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>0.61</td>
<td>0.60</td>
<td>0.22 0.23</td>
<td>0.10 0.17</td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>0.01 0.01</td>
<td>0.33 0.29</td>
<td>0.67 0.48</td>
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</tr>
<tr>
<td>N</td>
<td>24 24</td>
<td>22 22</td>
<td>22 21</td>
<td>20 20</td>
<td></td>
</tr>
<tr>
<td>Divorce</td>
<td>0.37</td>
<td>0.48</td>
<td>0.01 –0.07</td>
<td>0.17 –0.16</td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>0.11 0.03</td>
<td>0.99 0.78</td>
<td>0.50 0.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>20 20</td>
<td>18 18</td>
<td>18 19</td>
<td>19 19</td>
<td></td>
</tr>
<tr>
<td>Fertility</td>
<td>–0.71 –0.55</td>
<td>–0.03 –0.12</td>
<td>–0.25 –0.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>0.01 0.01</td>
<td>0.89 0.60</td>
<td>0.27 0.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>24 24</td>
<td>22 22</td>
<td>22 21</td>
<td>20 20</td>
<td></td>
</tr>
<tr>
<td>Church</td>
<td>–0.63 –0.76</td>
<td>0.08 0.13</td>
<td>0.15 0.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance</td>
<td>0.01 0.01</td>
<td>0.76 0.62</td>
<td>0.56 0.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>18 18</td>
<td>17 17</td>
<td>17 17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Boldface indicates significance at the 0.05 level; weekly drinkers and heavy drinkers are % of current drinkers. Two outliers were excluded from the heavy drinking correlations.

Table 2. Correlations between health effects of drinking and country characteristics (correlation coefficients, significance, and N's)

<table>
<thead>
<tr>
<th>GES</th>
<th>GEM</th>
<th>GDP/cap.</th>
<th>HDI</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liver disease and cirrhosis, males</td>
<td>–0.47</td>
<td>–0.61</td>
<td>–0.61</td>
<td>–0.65</td>
</tr>
<tr>
<td>Significance</td>
<td>0.02 0.01</td>
<td>0.01 0.01</td>
<td>0.01 0.02</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>23 20</td>
<td>23 23</td>
<td>23 23</td>
<td></td>
</tr>
<tr>
<td>Liver disease and cirrhosis, females</td>
<td>–0.49</td>
<td>–0.63</td>
<td>–0.66</td>
<td>–0.72</td>
</tr>
<tr>
<td>Significance</td>
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<td>0.01 0.01</td>
<td>0.01 0.02</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>23 20</td>
<td>23 23</td>
<td>23 23</td>
<td></td>
</tr>
<tr>
<td>Alcohol dependency, males</td>
<td>0.13</td>
<td>0.03</td>
<td>–0.19</td>
<td>–0.25</td>
</tr>
<tr>
<td>Significance</td>
<td>0.57 0.91</td>
<td>0.41 0.27</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>21 18</td>
<td>21 21</td>
<td>21 21</td>
<td></td>
</tr>
<tr>
<td>Alcohol dependency, females</td>
<td>0.40</td>
<td>0.30</td>
<td>0.05</td>
<td>–0.05</td>
</tr>
<tr>
<td>Significance</td>
<td>0.07 0.22</td>
<td>0.84 0.82</td>
<td>0.56</td>
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<td>N</td>
<td>21 18</td>
<td>21 21</td>
<td>21 21</td>
<td></td>
</tr>
<tr>
<td>Total alcohol deaths, men</td>
<td>–0.51</td>
<td>–0.55</td>
<td>–0.59</td>
<td>–0.65</td>
</tr>
<tr>
<td>Significance</td>
<td>0.02 0.02</td>
<td>0.02 0.01</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>21 18</td>
<td>21 21</td>
<td>21 21</td>
<td></td>
</tr>
<tr>
<td>Total alcohol deaths, women</td>
<td>–0.45</td>
<td>–0.51</td>
<td>–0.54</td>
<td>–0.66</td>
</tr>
<tr>
<td>Significance</td>
<td>0.04 0.03</td>
<td>0.01 0.01</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>21 18</td>
<td>21 21</td>
<td>21 21</td>
<td></td>
</tr>
<tr>
<td>Physical violence by partner: males</td>
<td>0.23</td>
<td>0.41</td>
<td>0.19</td>
<td>–0.16</td>
</tr>
<tr>
<td>Significance</td>
<td>0.46 0.25</td>
<td>0.54 0.59</td>
<td>1.00</td>
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<tr>
<td>N</td>
<td>13 10</td>
<td>13 13</td>
<td>13 13</td>
<td></td>
</tr>
<tr>
<td>Physical violence by partner: females</td>
<td>–0.10</td>
<td>–0.07</td>
<td>–0.25</td>
<td>–0.57</td>
</tr>
<tr>
<td>Significance</td>
<td>0.76 0.85</td>
<td>0.41 0.04</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>13 10</td>
<td>13 13</td>
<td>13 13</td>
<td></td>
</tr>
</tbody>
</table>

Note: Coefficients in boldface are significant at the 0.10 level.

is also negatively correlated with the GES and the GEM. This clear, consistent finding suggests that both modernization and gender equality are negatively correlated with alcohol-related mortality. The rates of partner physical aggression are less clearly associated with country characteristics, but their direction is interesting, too. Women’s complaints about partner violence tend to decrease with increasing wealth and urbanization, while men’s complaints tend to increase with gender equality. Men’s correlations with the rates death from alcohol dependence and liver cirrhosis are very similar to women’s.

**GENDER INEQUALITIES AND DIFFERENCES IN DRINKING AND CONSEQUENCES**

The final sections of this paper address our last research question, namely, the association between gender inequalities and gender ratios in alcohol consumption and alcohol-related problems.

As stated earlier, our major measures of the gender gap are the gender ratios of men’s and women’s drinking indicators. Four major indicators (and four ratios) were used: (i) per cent of current drinkers, (ii) per cent of drinkers who drink at least weekly, (iii) per cent of drinkers who drink heavily, and (iv) per cent of drinkers who engage in heavy episodic drinking (HED) at least once a month.

Table 3 presents the gender ratios of the main drinking indicators (countries ordered by current drinkers). The countries are relatively homogeneous in the gender ratio of current drinkers: almost all have a gender ratio between 1 and 1.4. The major
exceptions are India and Sri Lanka with gender ratios higher than 6. The ‘trimmed mean’, without the highest figure reduces the mean gender ratio from 1.96 to 1.59, and reduces the standard deviation of the distribution from 1.47 to 0.23. It is interesting to note that all seven countries with the highest ratios are non-European. And indeed, if we limit our analysis only to the European countries, the mean gender ratio drops down to 1.11 with a standard deviation of 0.10. In other words, the European countries in our study are very homogeneous with regard to the gender ratio in drinking. The gender ratios for weekly drinking present a rather similar picture, although they are generally higher, and five countries have ratios higher than 2. The distributions of the gender ratios for the two indicators of the intensity of drinking (heavy drinking and heavy episodic drinking) present a different picture: they are generally considerably higher and have higher dispersions.

Table 4 presents the correlations between country structural characteristics and the gender ratios in alcohol consumption. The gender ratio for the rate of current drinking is negatively correlated with the two main indices of women’s status, the GES and the GEM, as well as with the divorce rate. That is, as women’s social status rises, the gender ratio becomes lower. This gender ratio is negatively correlated with the GDP per capita, the Human Development Index, and the countries’ urbanization, and is positively correlated with church attendance, suggesting that it is also related to modernization.

The low, non-significant correlations in the gender ratios for drinking intensity are rather disappointing, but visual inspection of the pertinent-related scattergrams (data not shown) suggest that this is largely caused by extreme outliers.

As Table 4 shows that both gender equality and modernization are associated with the gender ratios in drinking, we tried to separate the two effects by means of partial correlations, controlling for the GDP. The partial correlations between the GES and the gender ratio of drinkers was –0.34 ($P < 0.12$) and the correlation with the gender ratio of weekly drinking was even lower, –0.19 ($P < 0.42$). The two other correlation coefficients, with the gender ratios for heavy drinking and heavy episodic drinking, were even lower. Thus, partial correlations seem to show that the correlations remain in the same direction, although they are lower and necessarily less significant as well.

Table 5 presents the correlations between women’s social position and the gender ratios for certain drinking consequences. The last rows are related to the gender ratios of physical aggression. In this specific case, since it is partner’s violence that was reported, the gender ratio was calculated by dividing women’s reported aggression by men’s reports. The correlations in this table are all negative, indicating that as women’s position in society is improved, and as there is higher gender equality, the smaller the differences between men’s and women’s alcohol consequences. This is true regardless of the type of indicator used, whether it is based on national-level of death statistics, or on GENACIS surveys (partner’s aggressive behaviour).

Are these correlations an artefact, based only on the association between the GES and economic affluence? Apparently not—partial correlations between the GES and the differences in consequence rates, controlling for the GDP are still mostly negative, although lower. Thus, the correlation between the GES and the gender ratio for alcohol dependency drops from –0.55 to –0.34 (non-significant).

Women’s political involvement (as indicated by parliament representation) and labour force participation are correlated with the gender gap in mortality and violence much like the GES: both are negatively correlated with the gender-difference in cirrhosis and liver diseases, in vehicle crash mortality, in alcohol dependency rates, and in partner violence.

**SUMMARY AND CONCLUSIONS**

To summarize, the following have been found:

(i) In all the countries in our sample alcohol consumption indicators are higher for men than for women: current drinker rates, the proportion of drinkers who drink weekly...
and the proportion drinking heavily are all higher for men than for women.

(ii) The extent or prevalence of drinking, as well as mortality from cirrhosis of the liver and from motor vehicle crashes, is consistently associated with indicators of modernization. However, modernization is not clearly associated with the intensity of drinking: its frequency and the quantities consumed. Economic development is quite strongly associated with the prevalence of drinkers but not with the intensity of drinking.

(iii) The gender ratio between men’s and women’s drinking varies considerably among countries. It is negatively correlated with modernization.

(iv) The most important finding seems to be that the gender ratios between men’s and women’s rates of drinking and of its consequences are negatively correlated with women’s position within society: the higher women’s position, the smaller the difference between men and women drinking rates.

These findings seem to corroborate our main hypothesis: that the societal differences between men’s and women’s drinking are largely a function of the differentiation between men’s and women’s positions in society. As the roles of men and women are becoming increasingly similar in many social areas, the differences in drinking behaviour tend to diminish. This often means that women have to ‘pay’ for the social participation and equality they gain by a high burden of alcohol’s adverse consequences.

It is interesting to note, particularly in Table 4, that the most influential variables are characteristics of the social structure, such as urbanization and the divorce rate, rather than the two indicators of beliefs and values, church attendance and Hofstede’s level of cultural masculinity. This may suggest that institutional settings and arrangements may affect regularities in drinking behaviour more than attempts to control it by moral education.

Finally, some words of caution are due. The findings presented above are based on a rather limited group of countries. The predominance of countries within the European Union rendered this sample rather homogeneous in its cultural background, politics and economic situation. It is quite possible that the inclusion of more countries from other regions could lead to some other conclusions. Some of the methodological decisions, too, may have biased the findings. For instance, it is conceivable that focusing on older age groups (rather than ages 18–34 years) could change some results. Thus, in order to conduct a more robust analysis future research should include more countries from a variety of regions with wider age ranges.

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