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Decreases in adolescent weekly alcohol use in Europe and North America: evidence from 28 countries from 2002 to 2010

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Introduction

In recent decades, frequent alcohol use was common among adolescents in North American and Northern and Western European countries.¹,² However, between 1998 and 2006 alcohol use started to decline (see: Monitoring the Future reports (US), the European School Survey Project on Alcohol and other Drugs (Europe) and the Health Behaviour in School-Aged Children (HBSC) study (North America and Europe)).³–⁶ These trends may be attributable to an increased understanding of negative effects of alcohol on adolescent development and, consequently, the implementation of public health programs targeting adolescent alcohol use.⁷

However, during this same period substantial increases in adolescent alcohol use were reported for several Eastern European countries.³,⁴ Explanations for these increases include the (rapid) increase in wealth and availability of alcohol in Eastern Europe after its transition from communist to market economies in the late 1980s.⁸

As adolescent alcohol use has also gained more attention in public health domains in Eastern European countries,² increasing trends may have ceased after 2006, or even begun to decline, emulating the trends observed in other regions. The present study aimed to test this hypothesis.

We describe (i) trends in weekly alcohol use from 2002 to 2010 in 28 countries; and (ii) variations in these trends by gender, age and geographical region. The variations by gender and age are relevant as boys and older adolescents are generally more likely to drink alcohol on a weekly basis compared with girls and younger adolescents.⁹ Recent research has suggested that the gender gap in adolescent alcohol use has become more narrow between 1998 and 2006;⁴ this study also sheds light on the potential continuation of this reduction.

Methods

We used data from the three most recent cycles of HBSC study. Anonymous surveys were conducted in the classrooms of 11-, 13- and 15-year-olds for academic years ending in 2002, 2006 and 2010, according to a common research protocol.³ A clustered sampling design was used, where the initial sampling unit was either the class or the school. Schools were selected to ensure that samples were representative by regional geography and other demographic characteristics, with variations in sampling criteria permitted to fit country-level circumstances. In some countries (i.e. Germany, Greece, Hungary, the Netherlands, Ukraine and UK), data were weighted to ensure representativeness. Sample sizes can be found online (see Supplementary Table X).

Each of the 28 participating countries obtained approval to conduct the survey from their ethics review board or equivalent regulatory institution. Responses were treated as confidential and
Results

Table 1 presents the prevalence of weekly alcohol use for boys and girls per country, categorized by geographic region. In 2010, the average of weekly alcohol use ranged from 2.4% in Finland to 19.6% in the Czech Republic.

In gender and age adjusted analyses, a trend towards decreasing weekly alcohol use was observed in 20 out of 28 countries. In some countries, this decrease was linear (e.g. Canada). In other countries, the decrease was steepest between 2002 and 2006 (e.g. France) or between 2006 and 2010 (Russia). Exceptions to this decline were found in eight countries. Six of these were in Eastern European countries, alcohol use (slightly) increased between 2002 and 2006, but declined considerably between 2006 and 2010. Across countries and regions, weekly drinking declined to a similar degree among boys and girls of all age groups.

Exceptions to the generally observed decline in adolescent alcohol use were observed in eight countries. Six of these were in Eastern Europe. The lack of a decline in these countries may be explained by rapid increases in wealth in these countries and adolescents’ subsequent opportunity to more financially independent and to consume goods that were previously unavailable, including alcohol. However, other Eastern European countries have followed the more general tendency towards declines in alcohol use, with awareness, policies and social norms helping to curb alcohol consumption among adolescents. Hence, overall, alcohol use appeared to decrease in the Eastern region as of 2006.

Our finding that weekly alcohol use decreased to a similar extent among boys and girls and among adolescents from different age groups is inconsistent with earlier findings suggesting a closure of the gender gap in adolescent alcohol use in Europe. It appears that gender convergence is more visible for more extreme drinking behaviours (i.e. drunkenness) in contrast to more regular drinking behaviours, such as weekly alcohol use, or that gender convergence has diminished in recent years.

Strengths of this study include our use of large, nationally representative datasets, inclusion of many countries, and uniformity of the protocol across countries and time. Limitations include (i) the study’s reliance on self-reports, which may have caused some adolescents to provide dishonest or inaccurate answers (although anonymity was stressed); and (ii) our time frame, limited to the 8-year period between 2001/02 and 2009/10, so caution should be exercised in extending these conclusions to periods after this period. Finally, it is important to recognize that our outcome measure was (at least) weekly drinking of beer, wine and spirits. This measure did not include the consumption of other alcoholic drinks, such as alcopops and national alcoholic drinks. We did not include alcopops because we wanted to base our trend analysis on similar items across time, and alcopops were not included in the 2002 HBSC survey.
questionnaire. Furthermore, a decrease in weekly alcohol use does not necessarily imply a decrease in the quantity of alcohol consumed. Future research may examine whether trends in different drinking behaviours, such as drunkenness, are also reflective of such decreases.

Our study confirms the need for an understanding of adolescent alcohol use trends in different populations that can facilitate establishing effective policies and programs to prevent the problematic consequences of these behaviours. Although observed trends in adolescent weekly drinking were remarkably similar across

Table 1 Trends in adolescent weekly alcohol use by country and region

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</table>

Notes: Due to the rising popularity of alcopops, in 2006 and 2010, an item 'alcopops' was included in the list of alcoholic drinks. Sensitivity analyses were conducted to check whether the inclusion of alcopops would influence the trends. No substantial differences in the outcomes of the trend analyses were found (results available on request).

Within columns, at the regional level, different subscripts refer to statistically significant differences at P<0.01. For instance, the linear time trend in Anglo-saxon countriesab does not differ from the linear time trend in Westerna, Northernb or Southernab Europe, but it does differ from the linear time trend in Eastern Europec.

Figure 1 Trends in adolescent weekly alcohol use by region and by demographic group
countries and demographic subgroups, absolute prevalence rates in weekly drinking still differed substantially across countries. Future research may examine the role of national factors, such as wealth, alcohol control policies, preventive measures, the general availability of alcohol, adult drinking patterns and social norms, in further explaining these cross-national differences.

Supplementary data
Supplementary data are available at EURPUB online.

Acknowledgements
HBSC is an international study carried out in collaboration with WHO/EURO. The international coordinator was Prof. Candace Currie, University of St. Andrews, and the databank manager was Prof. Oddrun Samdal, University of Bergen. A complete list of participating countries and researchers is available on the HBSC website (http://www.hbsc.org). We thank Robert Smith (Norway) for his careful assembly of the international HBSC trends data file.

Funding
The data collection for each HBSC survey is funded at the national level.

Conflicts of interest: None declared.

Key points
- A substantial decline in adolescent alcohol use in the period from 2002 to 2010 was observed in North America and across Europe.
- The general decrease in alcohol use was not equally present in all Eastern European countries; however, after 2006 most of Eastern Europe seems to follow the declining trend established in the rest of Europe and North America.
- Adolescent boys still drink more than adolescent girls and the closing of the gender gap in alcohol use seems to have come to a halt.
- The general decline in alcohol use fits into a pattern of overall decrease in risk behaviours (smoking, drug use, sexual risk behaviour, fighting), characteristic of the early twenty-first century in western countries.
- Results of cross-national monitoring studies can lead to higher awareness of the frequency of early adolescent alcohol use and its negative effects across a wide geographical area. Therefore cross-national monitoring studies are a crucial first step in the development of alcohol prevention and reduction programs among adolescents.

References