



Alcohol-Related Problems in Eastern Europe

A Comparative Perspective

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Abbreviations

AAF	Alcohol Attributable Fraction
ARIMA	Autoregressive Integrated Moving Average
BAC	Blood Alcohol Concentration
DALY	Disability-adjusted life year
ECAS	European Comparative Alcohol Study
FAO	Food and Agriculture Organization of the United Nations
FAS	Swedish Council for Working Life and Social Research
GBD	Global Burden of Disease
GDR	German Democratic Republic
ICD	International Classification of Diseases
IHD	Ischemic Heart Disease
NIAAA	National Institute on Alcohol Abuse and Alcoholism
QF	Quantity-Frequency scale
SoRAD	Centre for Social Research on Alcohol and Drugs
USSR	Union of Soviet Socialist Republics
WDT	World Drink Trends
WHO	World Health Organization

Introduction

Alcoholic beverages are used for many reasons and serve various purposes both for the individual and society. For example, it may be used for the individual's enjoyment and pleasure in form of a thirst-quencher and intoxicant or function as a mean for socialization at an informal dinner or for celebration at festivities. However, along with these benefits alcohol also brings many problems. From a public health perspective, alcohol appears to be one of the most important risk factors for mortality and morbidity on the global scale. WHO's Global Burden of Disease (GBD) study estimated that, for the year 2000, alcohol caused 1.8 million deaths, or 3.2% of all deaths worldwide. When years of life lost and disability associated with diseases (DALYs) were considered, the part of alcohol in the global burden of disease increased to 4.1%, ranking 5th among the 26 risk factors included, i.e., on a similar level as tobacco (Rehm et al. 2004).

The GBD approach gives an indication of the impact of alcohol on public health in a given year as well as an assessment of alcohol's impact relative to that of other factors (Midanik & Room 2005), but the measure does not tell us to what extent alcohol-related harm can be expected to change when overall consumption changes. This is the central question of the present thesis, which focuses on population drinking and alcohol-related problems in various countries of Eastern Europe.

From a Western point of view, the former socialist countries of central and Eastern Europe (in the following referred to as Eastern Europe) are often treated as a unified collective (Simpura 1995). This is also the case with respect to alcohol. The stereotypical view of Eastern European drinking often relates to a detrimental combination of high levels of consumption and episodic heavy drinking. This picture easily leads one to expect that the consumption of alcohol would be particularly harmful in this part of the world. Indeed, Eastern Europe is often portrayed as a region seriously affected by alcohol-related harm. But at the same time, it is important to recognize that the countries in the region, despite their common socialist past, historically have experienced different social, cultural and economical developments. These differences are also reflected in how alcohol is consumed; in the northern part of the region, the Slavic nations of the former Soviet Union – Russia, Belarus and Ukraine – are traditional vodka-drinking countries with mainly intoxication-oriented drinking patterns, whereas the drinking cultures in countries such as Bulgaria and Hungary appear to be more influenced by a

Mediterranean style of drinking (Popova et al. 2007). Consequently, the region cannot be characterized by a common drinking culture and cannot be regarded as homogenous with regard to how alcohol can be expected to be related to harm.

Previous studies have looked at the relationship between alcohol and harm in various Eastern European countries. But differences in methodology and focus limit the comparability across these studies, implying that we have little detailed knowledge about: (i) how changes in per capita consumption affect population health in individual Eastern European countries, (ii) how the association differs among the Eastern European countries, and (iii) how the association, in a wider perspective, might differ between Eastern Europe and other regions such as Western Europe and North America. This thesis is written within the framework of the project *Alcohol and Mortality in Eastern Europe – a Public Health Perspective*¹, which represents the first comprehensive comparative study of this kind focusing on Eastern Europe. The main aim was to estimate to what extent changes in per capita consumption affect different forms of alcohol-related mortality, and to put the results in a comparative perspective, e.g. with Western Europe and North America.

The thesis is based on four papers that, from a comparative perspective, focus on the relationship between alcohol and various forms of alcohol-related problems in Eastern Europe. The first two papers analyse how changes in per capita consumption affect rates in suicide mortality and fatal non-intentional injuries in several Eastern European countries, respectively; the third paper analyses the population-level relationship between alcohol and homicide in Russia and the U.S.; and the fourth paper uses survey data to assess how the risk of experiencing adverse consequences in relation to self-reported drinking in the three Baltic countries – Estonia, Latvia and Lithuania – compares to the situation in Sweden and Italy.

I will start this introduction by outlining a brief background of the research tradition on which this thesis is based; in the subsequent sections, I will discuss some theoretical and methodological issues, followed by a short review of previous studies. Finally, the main findings will be summarized and discussed.

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Research on alcohol-related problems

The public health approach to alcohol-related problems

The basic premises of the present research can be traced back to what within the alcohol field has been called the “new public health approach” to alcohol-related problems. Starting in the 1970s, the approach emerged partly as a response to the “alcoholism school of thought”, which previously had dominated the thinking about alcohol-related harm (Room 1984). In contrast to the alcoholism school of thought, which tended to consider all alcohol-related problems as symptoms of a single common underlying factor: alcoholism, the new public health approach was based on a disaggregated conception of alcohol problems (Room 2002). Central to the approach was the so-called “alcohol-problems” perspective, which stressed that alcohol-related problems not only affect alcoholics or the heaviest drinkers, but the whole range of consumers, and that alcohol-related problems consist of a wide variety of consequences of which alcoholism, now renamed alcohol dependence syndrome (Edwards 1977), is one (Room 1984, 2004).

Another fundamental basis of the approach was that the alcohol problems were considered at the population level. Accordingly, the focus was on the distribution of alcohol-related problems in the population as a whole. The first comprehensive overview of the approach came in 1975 in the form of a WHO report: *Alcohol Control Policies in Public Health Perspective* (Bruun et al. 1975) and was produced by an international group of researchers led by the Finnish sociologist Kettil Bruun. The report put forward the basic assumption that there is a positive relationship between a society’s overall alcohol consumption and the prevalence of alcohol-related problems in the population; therefore alcohol-related problems may be prevented through policies directed at total consumption, particularly those that limit the availability and price of alcohol. Critics of this original outline of the approach stress that volume of consumption not is the sole indicator of how drinking relates to harm, and that the population-level relationship may be modified by factors such as drinking patterns, drinking context and the social norms guiding the use of alcohol in a society (Lemmens 2001, Stockwell et al. 1997). However over the years, several sequels to the Bruun report have appeared (see Edwards et al. 1994, Holder & Edwards 1995 and Babor et al. 2010), and the understanding of alcohol’s effect on public health and of possible tools for prevention has been nuanced. For example, other policies than

those directly targeting per capita consumption have been added (see Babor et al. 2010 for an overview). Another important development is that it is now commonly recognized that in addition to the general level of consumption, the pattern of drinking affects the level of a country's alcohol-related problems, and that the effect of a given volume of alcohol on population health therefore can vary from one society to another (Norström & Ramstedt 2005, Midanik & Room 2005, Babor et al. 2010).

The nature and diversity of alcohol-related problems

As suggested by the “alcohol-problems” perspective, alcohol-related problems constitute a diverse range of consequences, not only including problems that are a cumulative result of long-term heavy drinking or dependence symptoms, such as liver cirrhosis, but also problems that can be acute effects of a single drinking occasion, for example an accident resulting in injury. Moreover, they also include problems that are more indirectly related to alcohol, e.g. violence and suicide as well as problems related to the individual's functioning in major social roles including family life, work performance etc. Sometimes drinking may affect a person other than the drinker him-/herself, as in the case of a drunken driver who may cause harm to other people.

It should be recognized that the emergence of alcohol-related problems is typically a complex process. The link between alcohol and different kinds of problems often involves a causal chain that interweaves the drinking with factors that can be individual, situational, social and cultural in character. Whether a drinking occasion will result in a problem may depend on the duration, intensity and pattern of drinking, on the individual's predisposition, on the social context and on the cultural understandings and behaviours that are part of the drinking occasion (Edwards et al. 1994). These complexities make it difficult to predict the outcome, this is, whether an individual's drinking will result in a problem or not. Thus, we cannot say whether a certain level or pattern of drinking will lead to a problem for a certain individual, but we can say that the more alcohol an individual drinks, the greater the probability that s/he will experience some form of alcohol-related problem. Thus, the relation between alcohol and negative consequences is probabilistic rather than fixed. Or in other words, the relationship is often conditional; it is drinking in combination with other factors that produces the problem (Room 2002).

With this complex and diverse nature of alcohol-related problems in mind, some basic characteristics and differences among alcohol-related problems need to be clarified. One classification that appears useful in this context has been developed by Skog (1995), and is presented in Table 1.

Table 1. *Classification of alcohol-related problems (Skog 1995)*

	<i>Somatic harm</i>	<i>Indirect/behaviour-related harm</i>
<i>Single drinking occasion</i>	Alcohol poisoning Hangover Heart failure	Accidents Interpersonal-violence
<i>Long-term excessive drinking</i>	Liver cirrhosis, Pancreatitis Different types of cancer	Suicide Mental, social and economical problems

The classification starts out from a separation of problems that are related to long-term heavy drinking/chronic abuse, and problems that are related to a single drinking occasion. The second dimension distinguishes between somatic problems, i.e., harm resulting from alcohol's toxic effect on the individual organism, and problems that are of a more indirect nature, often related to behavioural aspects of drinking. Examples of somatic consequences resulting from single drinking occasion include, e.g., alcohol poisoning and heart failure, but also less dramatic consequences such as hangovers, whereas somatic harm associated with long-term abuse includes chronic conditions such as liver cirrhosis, pancreatitis and different forms of cancer. When it comes to the indirect/behaviour-related dimension, problems related to single drinking occasions include, for example, accidents and interpersonal violence; the former is often a result of alcohol's effect on the physical coordination, cognition and attention of the individual drinker, whereas the latter have been connected to alcohol's potential effect on intention and judgement. However, the risk for both accidents and violence is mediated by contextual and cultural aspects of drinking, e.g., the different regulation of private and semi-private drinking contexts, as well as the more general social norms guiding drunken comportment. In the area of long-term/indirect harm, we find consequences such as suicide and problems of a more social nature, including the negative impact of alcohol on performance in family, friendship, work and other social roles. The complexity of the problems causes the

classification to overlap for some consequences; for example, suicide is related to alcohol through mental problems and social stigma due to long-term abuse, but a single drinking occasion can also trigger suicidal impulses.

Empirical studies on alcohol-related problems

Empirical research on the relationship between alcohol and harm can be conducted on both the individual and the population level. This section will outline some basic characteristics as well as the main advantages and drawbacks of each approach. However, because the main focus of this thesis is on the population-level relationship of alcohol and harm, the following sections will elaborate on theoretical and methodological assumptions and considerations specific to this approach. First, we will turn to the mechanisms assumed to underlie the population-level relationship between alcohol and harm: the total consumption model and the collectivity of drinking cultures, and in addition how the concept of drinking cultures is used to study differences in alcohol's impact on population health. Second, the Method and Data section will provide a brief review of aggregate time-series analysis, (which is one of the more influential approaches for empirically assessing the aggregate alcohol-harm relationship), as well as a clarification of the different forms of data sources used in aggregate analyses, paying special attention to questions and problems that are specific to Eastern Europe.

Level of analysis

Individual-level research is generally concerned with the individual's risk of experiencing a certain alcohol-related problem at a given BAC level (blood alcohol concentration) or self-reported level or pattern of consumption. The majority of research consists of medical epidemiological studies that estimate the dose-response relationships for alcohol-related somatic diseases. Other research in this vein includes studies of alcohol's involvement in traffic casualties as well as emergency room studies on alcohol-related intentional and non-intentional injuries (Edwards 1994, Anderson 1995, Romelsjö 1995). Another line of individual-level research, rooted in the social sciences and more focused on the behavioural and social consequences of drinking, is represented by general population surveys. One common approach here is to use multivariate regressions to control for how other factors affect the bivariate alcohol-outcome relationship (Edwards 1994, Room 2002). Individual-level research is feasible for, e.g., estimating risk functions between alcohol intake and the risk for various outcomes. The main complications of

this approach include difficulties in estimating individuals' actual consumption (self-reported figures tend to greatly underestimate the true level of consumption), and under-representation of problem drinkers, implying that the results do not represent the experience of the whole population (Kühlhorn et al. 1999). However, the main limitation of using micro-level data is the problem of self-selection, i.e., that an observed alcohol-problem relationship is confounded by the influence of unobserved personality characteristics related to drinking as well as the outcome (Norström & Ramstedt 2005).

At least the problem of self-selection can be avoided if the alcohol-harm relationship is studied at the population level. In this approach, the research question is somewhat different; instead of looking at the individual's risk, the focal point is on to what extent changes in overall consumption have an effect on rates of various forms of alcohol-related harm in a society (Norström & Skog 2001). This is a question of great public health interest, and is very difficult to answer on the basis of individual-level data (Norström & Ramstedt 2005). Moreover, with regard to cross-country comparisons, population-level studies may have several advantages over studies using individual-level data (Bloomfield et al. 2003). For example, aggregate-level data are often easy and cheap to obtain, available for many countries, and often in the form of time series, thus providing a base for comparing the relationship of alcohol and harm across countries and over time. On the other hand, aggregate-level analyses are prone to biases, resulting from failure to include confounding variables. Moreover, population-level studies usually only consider one dimension of alcohol consumption; overall volume, and do not directly consider factors such as dominant drinking patterns and percentage of abstainers in a population.

Empirical studies of the population-level relationship between alcohol and harm were initially focused on somatic harm in single nations, but the past three decades' research has taken many steps forward. For example, there has been a considerable broadening of harm indicators. The traditional focus within the field – population drinking and liver cirrhosis – has expanded to include additional indicators of both somatic and social nature. Moreover, the studies have come to include cross-country comparisons, with a shift of focus from single nations to including all nations in world regions such as Western or Eastern Europe (see below).

Theoretical background

The rationale for assuming a relationship between alcohol and harm at the population level is theoretically founded in the total consumption model (also known as the single distribution theory) and the theory of collectivity of drinking cultures. The basic ideas underlying these theories were first formulated by French demographer Sully Ledermann. Drawing on numerous

studies including both survey and mortality data, Ledermann hypothesized that there is a strong relationship between overall consumption and heavy drinking in a population. More specifically, he proposed that the distribution of alcohol consumption in a population can be approximated by a log-normal distribution. Thus, the distribution is markedly skewed with most consumers at the lower end, and a long tail of heavy consumers. Moreover, Ledermann assumed a fixed relationship between the mean and variance in the log normal distribution. Accordingly, if we know the mean consumption of a population we can predict its variance and hence the proportion of heavy drinkers. This fixed relationship also suggests that changes in mean consumption are typically followed by changes at all levels of consumption, including heavy drinking (Ledermann 1956).

Over the years, the validity of Ledermann's theory has been widely debated within the alcohol research field. The theory has also been subject to a large number of empirical and theoretical studies that have resulted in several reformulations and modifications (see Skog 1983 and Lemmens 1995 for overviews). Basically, these studies confirm that (i) consumption distributions tend to be markedly skewed, but not necessarily log-normal, and (ii) there is an empirical regularity in the relationship between the overall consumption and proportion of heavy drinkers in a population, but that the dispersion often is different from what would have been predicted following Ledermann (Skog 1985).

However, as pointed out by Skog (1985), another limitation of the theory is that it does not explain the phenomenon it predicts. According to Skog, a theory of the distribution of alcohol consumption should be based on hypotheses about the factors influencing human drinking behaviour. In the case of Ledermann's theory, the relationship between overall consumption and prevalence of heavy drinkers is partly formed by assuming a fixed relationship between abstract entities: the mean and the variance. To account for this, Skog proposed the theory of collectivity of drinking cultures. The theory considers two aspects of drinking behaviour. The first hypothesis is that the factors influencing a person's drinking behaviour tend to combine multiplicatively and thus produce a skewed distribution. The second hypothesis concerns how individual drinking behaviour is regulated by mechanisms of social interaction: according to Skog, an individual's drinking habits are strongly influenced by the drinking habits of friends and personal social networks, both through direct personal interaction and in the form of more indirect social control. This process of direct and indirect influences aggregates up to a complex pattern of interdependencies between individual members of a group or larger society so that it displays a strong collectivity in its drinking behaviour. Accordingly, changes in drinking habits are typically a group phenomenon, and we should expect individual changes to be synchronized and to move together up and down the consumption scale. Along these lines, Skog analysed survey data for a large number of popula-

tions (mostly from industrialized Western countries) and found a strong relationship between the overall mean consumption of a population and the consumption within its different drinking categories, including the proportion of heavy drinkers. Moreover, the findings suggested that an increase in the population mean for consumption tended to reflect a collective shift by drinkers at all levels of consumption. Thus Skog concluded that: "a strong collective component exists in human drinking behaviour. As a main rule, the population tends to move in concert up and down the scale of consumption" (Skog 1985 p.83) and "thereby creating a close relationship between the general level of consumption in the population and the prevalence of heavy use" (ibid. p.97).

Opponents of Skog's theory have questioned its empirical evidence base and have put forward examples in which changes in overall drinking were not reflected in all segments of society (Gmel & Rehm 2001). Skog, however, points out that his predictions are in no way to be seen as law-like statements, and he acknowledges that the relative position of population subgroups does not always move at the same pace or in the same direction as societies change: "the prediction is rather that a certain social mechanism pulls in a certain direction, producing certain overall patterns" (Skog 2001 p.330).

Typologies of drinking cultures

Comparative studies on alcohol and harm are generally concerned with cross-cultural variations in the relationship. One important consideration in this context is the concept of drinking culture. This concept often refers to common norms and meanings of the use of alcohol in a group or society, but may also include definitions of actual drinking practices such as the dominant drinking patterns (which basically refer to the frequency of drinking and amount per occasion), the preferred beverage type and the usual drinking contexts, as well as hypotheses concerning the occurrence of problems related to drinking in a specific culture. Another closely related concept is the 'cultural position of drinking', which is somewhat wider and also considers the relation of drinking to other aspects of the culture in a society.

Typologies

The social sciences have a long tradition of classifying cultural variations in drinking customs. In an overview article, Room and Mäkelä (2000) distinguish between two classical traditions. Rooted in ethnographic descriptions of traditional villages and tribal societies, the Holocultural tradition sought to

explain cultural variation in drunkenness based on the functions that intoxication had for the individual, for example reducing anxiety. These functions were in turn regarded as psychological reactions to larger structural features of society, and drunkenness was generally assumed to be negatively correlated with the degree of social and political organization. The second tradition, known as the ‘Sociocultural approach’, focused on normative structures concerning drinking and how this was related to differences in drinking practices and rates of problems (Room et al. 2002). The basic idea behind the approach is probably best summarized by Ullman’s (1958) distinction between ‘integrated’ and ‘unintegrated’ drinking customs. Referring to the drinking among American orthodox Jews and Italians, on the one hand, and Irish Americans and protestant middle-class Americans of British origin, on the other, Ullman hypothesized that societies in which alcohol was an integrated part of everyday life and in which the customs and norms concerning drinking are well known and agreed upon will have lower rates of alcohol problems than societies with less socially integrated drinking customs and where norms are unclear and contested. The approach has been criticized for being too focused on features specific to American drinking cultures and because it fails to include overall volume of consumption in relation to rates of alcohol problems (Room & Mäkelä 2000).

The most commonly applied typology in comparative studies of alcohol and harm in industrialized Western countries has probably been the distinction of ‘wet’ and ‘dry’ drinking cultures. The distinction emphasizes overall level of consumption and dominant drinking patterns, but also the systems of social control of drinking and the characteristic mixes of alcohol problems related to each culture (Room & Mäkelä 2000). Wet drinking cultures have typically been represented by the Mediterranean countries of Western Europe. These cultures are characterized by a high per capita consumption, frequent, often daily drinking foremost during meals, a weak temperance tradition and high levels of chronic diseases related to long-term extensive drinking. Conversely, dry drinking cultures, often represented by the Nordic countries, are generally characterized by low per capita consumption, episodic heavy drinking, a strong temperance movement, higher rates of alcohol problems related to intoxication and more public disruption associated with alcohol (Room & Mäkelä 2000, Tigerstedt & Törrönen 2007). Another commonly used typology (and closely related to the wet/dry distinction) is based on the traditionally dominant beverage type of each culture. Thus, countries are classified into spirits, beer and wine cultures, corresponding to the countries of northern, central and southern Western Europe, respectively (Tigerstedt & Törrönen 2007).

However, the post-war period has seen indications of a homogenization of the Western European drinking cultures. This is reflected in a convergence of per capita consumption levels across the region (Leifman 2002), for example, the per capita consumption in the traditionally ‘dry’ Finland now

exceeds that of 'wet' Italy (WHO 2004). Moreover, the traditional beverage preferences have become less distinct across countries; beer and wine are now more dominant beverages than spirits in the Nordic countries, whereas the consumption of wine has gone down considerably in the Mediterranean countries (WHO 2004). Taken together, this development implies that the traditional typologies are becoming problematic and, as pointed out by Tigerstedt & Törrönen (2007), are in need of reformulation.

Typologies of drinking cultures in Eastern Europe

There have been few attempts to classify the variety of drinking cultures in Eastern Europe. One example is Popova (2007) who, based on work by Ionchev (1998), distinguishes between three different cultures using traditional beverage preferences, dominant drinking patterns and social reactions to alcohol as discriminatory indicators. The cultures correspond fairly well with the typologies traditionally used for Western Europe:

- The Mediterranean pattern: Including Bulgaria, Hungary, Romania, Slovenia and the former Yugoslavian countries. In this culture wine and fruit brandy are the dominant beverages. The drinking patterns are influenced by the Mediterranean countries of Western Europe, i.e., frequent, often daily drinking, foremost during meals. No acceptance of drunkenness in public.
- The central European pattern: Including the Czech Republic and Slovakia. Beer is the dominant beverage in these countries. The drinking patterns and social norms guiding drunken comportment are similar to those in the Mediterranean culture.
- The northern European pattern: Including the Baltic and Slavic countries of the former Soviet Union as well as Poland. These are traditional vodka-drinking countries where consumption is characterized by the traditional 'dry' Nordic pattern of drinking, i.e. irregular and intoxication-oriented drinking and the acceptance of drunkenness in public.

This classification provides a foundation for putting the drinking cultures of Eastern Europe in relation to those of the West. For example, the central European pattern is assumed to be very similar to that of Germany, whereas the northern European pattern is directly comparable to the drinking culture of the Nordic countries. However, because it mainly builds on indicators from the traditional wet/dry and beverage-type typologies, the classification

suffers from similar problems. In fact, there has been a movement away from traditional beverage preferences also in these countries, for example, in Poland and the Baltic countries, beer has either replaced or is closing in on spirits as the dominant beverage (WHO 2004). In addition, a direct comparison to Western European counterparts is also problematic, for example, although Russia may have a drinking pattern similar to the Nordic countries, the country cannot be regarded as 'dry' or 'Nordic' in terms of consumption levels, as the Russian per capita consumption is considerably higher.

With these considerations in mind, an alternative approach to these traditional typologies has been used to categorize the countries included in the present thesis: the hazardous pattern score developed by WHO for the GBD study for the year 2000 (Rehm et al. 2004). The pattern score approach represents a more constricted definition of how consumption may be related to harm, in that it has a particular focus on the degree of hazard associated with certain drinking patterns. More specifically, the score considers six dimensions of drinking patterns: amount per occasion, rate of daily drinking, festive drinking being common, drinking in public places being common and drinking with meals being uncommon. The score is assumed to measure the degree of hazard associated with each extra per capita litre of alcohol consumed.

Method and data

Aggregate time-series analyses

The analyses in this thesis are mainly based on country-specific ARIMA (Autoregressive Integrated Moving Average) time-series analyses of annual per capita consumption and annual mortality rates. This is one of the more influential methodological approaches for empirically assessing the aggregate alcohol-harm relationship, and it has been used in previous comparative studies of Western Europe and North America (see below). The method is described in more detail in Paper 1, 2 and 3, but some basic features will be mentioned here. Aggregate analyses based on cross-sectional data from several countries at a single time point are very easily confounded by cross-cultural differences affecting both the explanatory variable (alcohol consumption) and the outcome at issue, i.e. the harm rate. However, assuming that culture is more stable within countries across time than between countries at a given point in time, the present approach avoids this problem by analysing the temporal co-variation of alcohol and harm within single countries (Norström & Skog 2001, Norström & Ramstedt 2005). Another important feature of the approach is that we perform the analyses on the differenced series. Thus, rather than simply correlating the trends in alcohol consumption and harm rates, which may result in a spurious relationship due to common trends, we analyse the yearly changes in the data. This procedure also decreases the risk of omitted-variable bias because an omitted variable is more likely to be correlated with alcohol consumption due to common trends than due to synchronization in the yearly changes (Skog 1988).

Indicators of aggregate alcohol consumption

The most widely used indicator of overall consumption in cross-national studies of alcohol and harm is adult per capita consumption, typically ex-

pressed in litres of alcohol (100% ethanol) per capita aged 15 and older (Babor et al. 2010, Bloomfield et al. 2003). There are three principal sources for these estimates (Gmel & Rehm 2004): (i) national government data, which are usually based on sales figures, tax revenue or production data, (ii) data from international organizations, e.g., FAO (Food and Agriculture Organization of the United Nations) based on production and trade data, and (iii) alcohol industry data, e.g., World Drink Trends (WDT), based on total sales.

The greatest weakness of this form of data is that it does not consider sources of unrecorded consumption, e.g., home production, illegal industrial production and surrogate alcohol intended for industrial, technical or medical purposes (WHO 2004). Few countries have conducted studies directly estimating these forms of consumption. However, a review by Popova et al. (2007) summarized available figures on unrecorded consumption for various countries in Eastern Europe for 2002, using estimates obtained from the Global Status Report on Alcohol (WHO 2004) as well as from representative general population surveys. Basically, the findings suggest that unrecorded consumption comprises a larger proportion of total consumption in the countries of Eastern Europe compared to most countries in Western Europe. Given that the proportion of unrecorded consumption is fairly stable over time, an underestimation of the actual per capita consumption may have the effect that the ARIMA models overestimate alcohol's impact on mortality. However, if the proportion of unrecorded consumption changes over time, the effect on the estimates becomes more uncertain (see Paper 1, 2 and 3 for further discussion on this topic). There are some indications that the proportion of unrecorded alcohol within the countries of Eastern Europe has varied over time. Several countries have witnessed sudden large variations in recorded consumption during the post-war period. These variations include cases in which decreased recorded consumption has been compensated by increased unrecorded consumption, for example during the extensive alcohol policy reforms of the 1980s in Poland and the Soviet Union (Nemtsov 2000, Moskalewicz & Simpura 2000). Moreover, it appears that the proportion of unrecorded consumption increased in many countries during the period of transition to the market economy of the early 1990s, when state control over production and sales was reduced (Moskalewicz et al. 2000, Moskalewicz & Simpura 2000). In the case of Russia, however, estimates of unrecorded consumption are available and have been used to complement the alcohol indicator in the analyses. Although it certainly is problematic to assess the validity of these estimates, they remain the most widely cited and probably the best estimates available (Leon et al. 2009).

Indicators of aggregate alcohol-related harm

In line with most other studies of this tradition (Norström & Ramstedt 2005), the present thesis uses mortality statistics as an indicator of aggregate alcohol-related harm. This kind of data is not without its problems, but it has several advantages over other harm indicators such as morbidity and crime data, especially for cross-national comparisons. Since the 1950s, national mortality statistics have been recorded systematically according to the rules and guidelines set by WHO in the International Statistical Classification of Diseases and Related Health Problems (ICD). This system is designed to promote international comparability in the collection and classification of mortality statistics, and the collected data are available in the form of long time series for most countries through the WHO mortality database. However, according to WHO: ‘accuracy in diagnosing causes of death still varies from one country to another /.../main reasons are incorrect or systematic biases in diagnosis, incorrect or incomplete death certificates, misinterpretation of ICD rules for selection of the underlying cause, and variations in the use of coding categories for unknown and ill-defined causes’ (Mathers et al. 2004). For example, there have been extensive discussions of the international comparability of suicide mortality statistics; a potential source of bias in this context is that actual cases of suicide in some countries may be masked as other deaths due to cultural differences in the acceptance of suicide (Wasserman & Värnik 1998).

It should also be mentioned that the Soviet Union used its own classification system for causes of death and that, for political reasons during the period 1956 to 1987, violent deaths such as suicide and homicide were classified and tabulated separately on a top-secret special table together with other ‘hidden’ causes such as cholera and pestilence (Shkolnikov, Meslé & Vallin 1997). However, a study assessing the reliability of statistics on violent deaths in the former Soviet Union concludes that the mortality data were reliable for the Slavic countries (Russia, Belarus and Ukraine) and that there was no pressure to falsify the actual causes of death (Wasserman & Värnik 1998). Moreover, a group of researchers has recently gained access to the Soviet mortality data, and has been able to reclassify the Russian data (including the suicide and homicide data) according to the detailed list of ICD-9 codes (Mesle et al. 2003). The reclassified Russian data were in turn made available to the present research project and have been used in the analyses of this thesis.

Previous comparative studies

The European Comparative Alcohol Study

The hitherto most comprehensive comparative research project in this tradition is the European Comparative Alcohol Study (ECAS) (Norström 2002). The main approach of the ECAS study was to use ARIMA modelling of aggregate time-series data to estimate how various forms of alcohol-related mortality have responded to changes in population drinking in post-war Western Europe, more specifically EU member states during the period 1950-1995 (plus Norway but excluding Luxembourg).

The mortality outcomes included: liver cirrhosis, non-intentional injuries, homicide, suicide, IHD mortality and all-cause mortality. The ARIMA estimates expressed the average change in the mortality rate at issue given a 1-litre change in per capita consumption (henceforth denoted the alcohol effect). Country-specific estimates were obtained for each mortality outcome. In addition, the country-specific estimates were pooled for three country groups that were assumed to represent three different drinking cultures: southern Europe (France, Italy, Portugal and Spain), mid-Europe (Austria, Belgium, Denmark, Ireland, Netherlands, U.K. and West Germany) and northern Europe (Finland, Norway and Sweden).

The overall results revealed that an increase in population drinking is generally followed by an increase in the various forms of alcohol-related mortality, but that the changes in population drinking tend to have a stronger effect on mortality in northern Europe compared to mid- and southern Europe, particularly on violent deaths but also for all-cause mortality. This north-south gradient in the amount of harm from each litre of alcohol per-capita is assumed to indicate the importance of drinking patterns, i.e. that the intoxication-oriented drinking patterns of northern Europe are conducive to a larger alcohol effect per extra litre consumed, than are the more mundane and everyday-integrated drinking patterns of mid- and southern Europe.

Subsequent studies applying the ECAS approach have focused on Canada (e.g. Skog 2003, Norström 2004, Rossow 2004, Ramstedt 2005, Norström & Ramstedt 2005) and the US (Norström 2007, Ramstedt 2008, Landberg & Norström 2009). Findings from these studies suggest that the alcohol effect, for most mortality outcomes, is slightly lower or on a par with that found in northern Europe.

Previous population-level research on alcohol and mortality in Eastern Europe

When it comes to research on the public health impact of alcohol in Eastern Europe, a great deal has been done on Russia in the context of Gorbachev's anti-alcohol campaign of the mid-to late 1980s; Gorbachev's campaign included policy implementations such as higher prices, reductions in state production and reduced availability and was followed by a marked decrease in alcohol consumption as well as a rapid decrease in mortality (Shkolnikov & Nemstov 1997). Because 'there were no other significant changes in public health conditions that could have resulted in such an abrupt change in mortality in so short a period of time' (Shkolnikov & Nemstov 1997 p. 239), several researchers have suggested that alcohol was the most important factor underlying these variations in mortality (Leon et al. 1997, Shkolnikov & Nemstov 1997, Nemstov 1998). Another period in relation to which the role of alcohol has attracted major interest is the 'the transition mortality crisis' of the 1990s (Corina & Pannicà 2000, Reitan 2000). This refers to the dramatic upsurge in mortality that took place in many of the former socialist countries during the transition from communism to a market economy and democracy. Compared to the Gorbachev reform, the impact of alcohol is generally recognized as less clear during this period, because the increase in mortality coincided with major societal changes, including severe economic crises. However, some researchers still see alcohol as a key factor for the variations in mortality (see Leon et al. 1997, Shkolnikov et al. 2001), whereas others point out other factors as being more important, for example, acute psychological stress, assumed to be triggered by the economic crises and the social and political unrest following the collapse of the old system (Marmot & Bobak 2000; Corina & Paniccià 2000).

The above-reviewed studies are mainly based on broad descriptive analyses of temporal developments in different forms of mortality rates and most studies do not have an explicit focus on alcohol. With regard to studies aimed at quantifying the public health impact of alcohol in Eastern Europe, Rehm et al. (2006) applied the GBD approach, and estimated that the proportion of male deaths attributable to alcohol in 2002 was 18.6% in (the WHO region) Europe C, including the Slavic and Baltic nations of the former Soviet union and 9.7% in Europe B, including, for example, Bulgaria, Poland and Romania, compared to 3.4% in Europe A, which includes the countries of Western Europe. Moreover, Rehm et al. (2007) estimated that alcohol was responsible for a considerably larger proportion of premature adult mortality in The Czech Republic, Hungary, Lithuania, Poland and Russia than in France, Sweden and UK. Russia stood out with 29 alcohol-attributable premature deaths per 10,000 population for men, compared to 2.7/10,000 in Sweden.

However, no comprehensive comparative study applying the ECAS approach has focused on Eastern Europe. Several studies addressing the aggregate relationship between alcohol and various forms of alcohol-related mortality in individual Eastern European countries have used aggregate time-series analyses (see Paper 1 to 3 for reviews), but the fact that different measures and analytical techniques are used across these studies makes it difficult to compare the results with a reasonable degree of precision.

Summary of papers

Paper 1: Alcohol and suicide in Eastern Europe

The aim of this paper was to estimate how suicide rates in seven Eastern European countries are affected by changes in population drinking and to compare the results with previous findings for Western Europe and North America.

The study included data from Russia, Belarus, Poland, Hungary, Bulgaria, the former Czechoslovakia and the former GDR and the approximate study period was 1950-2000. Annual alcohol sales data (expressed in litres of 100% alcohol per capita aged 15 years and older) were used as a proxy for per capita consumption. In the case of Russia, the alcohol-proxy included estimations of unregistered consumption. Age and gender-specific mortality data were obtained from the WHO mortality database (for Russia, Belarus and the former GDR, additional sources were used) and converted into age standardized mortality rates, 15 years+. Total population and gender-specific models were estimated for each country using ARIMA time-series modelling. In addition, the country-specific estimates were pooled in two groups: spirits countries (Russia, Belarus and Poland) and non-spirits countries (Hungary, Bulgaria, former Czechoslovakia and the former GDR).

The results revealed a positive and significant relationship between changes in total consumption and overall suicide mortality rates in 6 out of 7 countries. Moreover, both male and female mortality rates were affected, although the impact tended to be stronger and more often significant for men. For the total population and for men, the alcohol effects tended to be stronger in the spirits countries, whereas for females the alcohol effects did not significantly differ between the two country groups. For the non-spirits countries, the strength of the relations appeared to be stronger than what had previously been estimated for the central and southern regions of Western Europe, but similar to Canada and the US. The alcohol effect in the Spirits countries was on par with the alcohol effect for northern Europe.

In conclusion, the results suggest that per capita consumption matters for suicide mortality in these Eastern European countries. The findings are also in line with the hypothesis that the strength of the relationship is contingent on the drinking culture, so that it is stronger in countries with intoxication oriented drinking patterns.

Paper 2: Population drinking and fatal injuries in Eastern Europe: A time-series analysis of six countries

This paper examines to what extent mortality rates of non-intentional injuries in six Eastern European countries are affected by changes in population drinking during the post-war period. In addition, the results were compared with previous findings for Western Europe and North America.

The studied countries comprised: Russia, Belarus, Poland, Hungary, Bulgaria and the former Czechoslovakia. Annual sale statistics were used as a proxy for consumption and expressed in litres of 100% alcohol per capita aged 15 years and older (for Russia the proxy included estimations of unregistered consumption). Annual age- and gender-specific mortality data were obtained from the WHO mortality database (for Russia and Belarus additional sources were used) and converted into age-standardized mortality rates, 15 to 69 years. ARIMA time-series modelling was used to estimate the relationship. Total population and gender-specific models were estimated.

In the majority of countries, changes in per capita consumption were positively and significantly related to changes in rates of fatal injuries for the total population. Moreover, the estimates were significantly larger for Russia and Belarus than any of the remaining countries. The gender-specific estimates displayed cross-national variations similar to the total population estimates, although the estimates for males tended to be larger and more often significant than those for females. In an international comparison, Russia stood out with an alcohol effect that was considerably larger than what had previously been estimated for all regions of Western Europe as well as North America. The remaining countries displayed alcohol effect estimates that were on a magnitude similar to what had previously been estimated for mid-Europe and North America.

In conclusion, the results suggest that changes in per capita consumption have a significant impact on mortality due to non-intentional injuries in these countries, but that the strength of the association tends to be stronger in countries where intoxication-oriented drinking is more common.

Paper 3: Alcohol and homicide in Russia and the United States – a comparative analysis

The aim of this study was to perform a comparative analysis of the aggregate relationship between alcohol and homicide in Russia and the United States.

Three aspects of the alcohol-homicide link were addressed: First, the magnitude of the alcohol effect, i.e., how much does the homicide rate increase in the respective countries, given a 1-litre increase in per capita consumption? Second, we estimated the alcohol attributable fraction (AAF) on the basis of the aggregate findings for homicide in the respective countries. Third, we assessed to what degree the trends and shifts in the homicide rates in the respective countries could be accounted for by the trends in alcohol consumption.

We analysed total and sex-specific homicide rates for the age-groups 15-64, 15-34 and 35-64. The study period was 1959-1998 for Russia, and 1950-2002 for the U.S.. For the U.S., alcohol consumption was gauged by sales of alcohol, for Russia estimated unrecorded consumption was included as well. The data were analysed through ARIMA time-series modelling.

For Russia as well as for the U.S., a 1-litre increase in consumption was associated with an increase in homicides of about 10%. However, due to differences in homicide rates, a 1-litre increase yielded a larger absolute number of additional homicides in Russia compared to the U.S.. The AAF estimates suggested that 77% and 57% of the homicides would be attributable to alcohol in Russia and the U.S., respectively. Most of the temporal variation in the Russian homicide rate until the late 1980s could be accounted for by the trend in drinking. After the late 1980s, the consumption indicator was a poor predictor, while an alcohol indicator backcasted from accident mortality was more successful. The U.S. trend in total alcohol consumption had a more limited ability to predict the trend in homicides.

Although the relative effect on homicides of a change in total consumption was of the same magnitude for both countries, the absolute effect was larger in Russia. The proportion of homicides attributable to alcohol was also larger in Russia, as was the predictive power of total consumption in explaining trends and shifts in the homicide rate. We thus conclude that alcohol plays a more important role for homicides in Russia than in the U.S.

Paper 4: Self-reported alcohol consumption and the risk of alcohol-related problems: a comparative risk-curve analysis of the three Baltic countries, Sweden and Italy

Previous research has suggested a positive risk relationship between volume of consumption and the adverse behavioural and social consequences of drinking. However, because the risk relationship may be modified by factors such as pattern of drinking, attributes of social drinking contexts and drunken compartment, the shape of the risk function appear to be contingent on the larger cultural context of drinking.

In this paper, I use graphical risk-curve analyses and model estimations to assess how the risk of experiencing alcohol-related problems is associated with self-reported volume of alcohol consumption in the three Baltic countries; Estonia, Latvia and Lithuania as well as Sweden and Italy. The rationale behind the choice of countries was to obtain a basis for comparing the risk curves for the Baltic countries with the risk curves for two countries representing distinct types among the Western European drinking cultures. The analyses utilized data from two general population surveys (including Sweden plus Italy and the Baltic countries, respectively) with approximately 1000 respondents from each country.

Results: The slopes of the risk-curves for the Baltic countries were generally parallel to those for Sweden, but significantly steeper than for Italy. This result suggests that (i) the risk for alcohol-related problems in the Baltic countries increases with volume of consumption in a way that is similar to northern Europe, and (ii) that increasing volume of consumption is associated with a considerably higher risk of experiencing alcohol-related problems in the Baltic countries (and Sweden) than in Italy. The result also suggests that increasing volume of consumption is associated with the risk of experiencing a larger number of different problems in the Baltic countries and Sweden than in Italy.

The results were in line with the hypothesis of a European north to south gradient in the strength of the risk relationship, but also add that the Baltic countries may be placed alongside the Nordic countries in this context. Because only volume of consumption is considered, the results cannot be used to specify which factors and mechanisms actually modify the shape of the risk function in each culture.

Conclusions

What the findings of the first three papers have in common is that they suggest a positive relationship between population drinking and rates of alcohol-related violent mortality in the Eastern European countries studied; that is, changes in per capita consumption seem to be significantly related to changes in mortality rates of suicide, non-intentional injuries and (estimated for Russia only) homicide.

The findings also suggest some recurrent variations in the strength of the aggregate relationship. First, the relationship tends to be stronger for men than for women in all countries; this finding was expected given that men in these countries drink more (thus are responsible for a larger proportion of the total consumption), and more often drink until intoxication. Second, the relationship tends to be stronger in countries with more detrimental drinking patterns, as indicated by the hazardous pattern score, i.e., Russia and Belarus. This finding supports the hypothesis that the strength of the population-level relationship between alcohol and violent deaths is contingent on the drinking culture, such that it is stronger in countries where the dominant drinking pattern is oriented towards intoxication.

Moreover, an international comparison of the findings suggests that the alcohol effect on accident and suicide mortality were larger in the studied countries compared to mid- and southern Europe (as estimated by the ECAS study), but similar compared to estimates from North America. However, only in Russia does the magnitude of the alcohol effect appear to match or be stronger than that for northern Europe.

In the fourth paper, the picture of cross-cultural variations in the alcohol and harm relationship was complemented by findings based on individual-level data, suggesting that the risk of experiencing adverse consequences in relation to self-reported volume of consumption in the Baltic countries was similar to Sweden but considerably stronger than for Italy.

Russia stands out as a special case that deserves additional attention. The country's drinking pattern, which is characterized by heavy episodic drinking of primarily vodka, appears to be particularly harmful and is reflected in the fact that the country obtained the highest possible hazardous pattern score according to WHO (Rehm et al. 2004). Thus, a basic hypothesis of this thesis was that changes in per capita consumption would have a larger impact on violent deaths in Russia than in most other countries, including, e.g., northern Europe and North America. However, the results only partly ful-

filled these expectations and the Russian alcohol effect was not consistently stronger than in these regions. On the one hand, and in line with the expectations, a stronger alcohol effect was revealed in Russia concerning non-intentional fatal injuries, which is the mortality outcome that is assumed to be most closely related to intoxication-oriented drinking patterns and less affected by other parts of drinking cultures (Room, 1998). On the other hand, the alcohol effects were lower than expected for suicide and homicide – mortality outcomes that have a more complex and indirect relationship to alcohol consumption and for which the association is assumed to be more dependent on societal norms concerning heavy drinking and social drinking contexts. Thus, the lower-than-expected alcohol effect on Russian suicides may be a reflection of the fact that heavy drinking probably is less problematized and thus less stigmatizing in Russia compared to, e.g., the Nordic countries. With regard to homicide, a comparably small part of Russian drinking takes place at public places such as pubs and bars, which are assumed to be related to an elevated risk of alcohol-related violence (Pridemore, 2004). The somewhat unexpected findings may thus to some extent be explained by some unique features of the Russian drinking culture: high rates of intoxication drinking in combination with low stigmatization of drunkenness and a relatively low share of on-premise drinking.

However, to fully appreciate the impact of the alcohol factor in Russia, the alcohol effect should be weighed together with exposure, i.e. the level of alcohol consumption. This is done by estimating the alcohol attributable fraction (AAF). As it turns out, the comparably high level of average per capita consumption in Russia results in AAFs for suicide and homicide that are considerably larger than the AAFs previously estimated for northern Europe and North America (see paper 1 and 3).

As previously mentioned, the countries under study have undergone major social transitions which in some cases (e.g., Russia) were paralleled by severe economic crises and large variations in adult mortality. It is of interest to discuss how these societal events may have affected the above-reported relationship between alcohol and mortality. For a factor to be relevant in this context, it must be correlated with changes in per capita consumption as well as mortality. Further, it must vary in strength across the countries so that effect on the relationship is larger in Russia than in the other countries. Two examples that may fulfil these requirements are the (somewhat related) concepts of stress and anomie. According to several scholars, mass psychological stress, caused by the shock of a sudden social and economic transition and inability to adapt to these new circumstances, played a crucial role in the transition mortality crisis (see Corina & Panicià 2000, Marmot & Bobak 2000, Shkolnikov et al. 1998). Similarly, Durkheim's concept of anomie (Durkheim, 1933, 1951) has been used by McKee and Leon (2005) and Pridemore et al. (2007) to show how the rapid social changes resulted in the upheaval of social and moral norms, which in turn increased self-destructive

behaviour and in the end – increased mortality. Both these hypotheses stress that those countries and regions that experienced the most rapid and uncontrolled changes (e.g., Russia) were also those where the mortality rose the most. What also is common to these two hypotheses is that they assume that stress and anomie could cause overall alcohol consumption to rise. Following this, one plausible argument would be that the above-reported relationship between alcohol and mortality is to some extent confounded by stress and/or anomie, as these factors have a positive effect on both alcohol consumption and mortality. However, the empirical research on how stress/anomie affects alcohol consumption in these countries is inconsistent. Individual-level studies focusing on correlates of stress report mixed results. For example, some researchers find a relationship between economical problems and heavy drinking (Jukkala et al. 2008), whereas others do not (Bobak et al. 1999). Another type of empirical evidence is presented by Pridemore et al. (2007). On the basis of interrupted ARIMA time-series analyses, the researchers concluded that the anomie following the dissolution of the Soviet Union resulted in increased rates of Russian homicides and suicides as well as alcohol-related deaths. However, the latter rates increased only by two additional cases per 100,000 inhabitants, which, given that the rate increased from around 20 in 1992 to close to 50 in 1995, appears to be a negligible number. Overall, the available empirical evidence does not fully support the hypothesis that the stress and anomie following the social transition would affect the aggregate alcohol consumption enough to confound the alcohol mortality relationship. This conclusion is also corroborated in a study by Norström (2009), which estimates the alcohol effect on homicide, fatal non-intentional injuries and total mortality in Russia using time-series data for the period 1959-1987, i.e., before the social changes assumed to give rise to stress and anomie had begun. The results revealed that none of the alcohol effects differed significantly from those whose estimates are based on the whole period 1959-1998 (Landberg 2010, Norström 2006, Landberg & Norström 2009). Thus, we can conclude that alcohol probably had an independent significant effect on mortality.

Overall, the findings of this thesis support the significance of a public health approach to alcohol-related problems in Eastern Europe, i.e., policy measures directed towards total alcohol consumption as well as strategies to reduce the occurrence of binge drinking seem to have great potential for reducing alcohol-related harm and mortality in these Eastern European countries. However, the prospects for traditional alcohol policy implementations such as price controls, taxations and availability should not be overvalued. For example, in the case of Russia, a large proportion of the total consumption is made up of illegally produced vodka and cheap non-beverage alcohols (Leon et al. 2009). Increased taxation of legally sold vodka may in fact have the effect of shifting consumption towards these cheaper forms of alcohol. Hence, a successful alcohol policy has to combine traditional measures

with complementary measures aimed at reducing the supply of illegal sources of alcohol (Khaltourina & Korotayev 2008).

Sammanfattning

Alkoholkulturen i Östeuropa förknippas vanligtvis med en olycklig kombination av höga konsumtionsnivåer och utbrett berusningsdrickande. Med detta som utgångspunkt är det lätt att dra slutsatsen att alkoholkonsumtionen sannolikt är särskilt skadlig i denna del av världen. Ett flertal tidigare studier har analyserat sambandet mellan alkoholkonsumtion och skador i enskilda Östeuropeiska länder men skillnader i ansats och metodik hämmar jämförbarheten mellan dessa studier. Sammantaget innebär detta att vi hittills saknat forskning som på ett tillfredställande sätt kan besvara: (i) vad förändringar i totalkonsumtionen av alkohol har för effekt på olika former av alkoholrelaterad dödlighet i olika Östeuropeiska länder, (ii) huruvida detta samband skiljer sig åt mellan Östeuropeiska länder, samt (iii) hur sambandet ser ut i jämförelse med vad man funnit i andra länder och dryckeskulturer t.ex. i Västeuropa och Nordamerika.

Denna avhandling har skrivits inom ramen för projektet *Alkohol i Östeuropa – ett folkhälsoperspektiv*. Det övergripande syftet har varit att skatta i vilken utsträckning förändringar i totalkonsumtionen påverkar olika former av alkoholrelaterad dödlighet samt att jämföra resultaten med tidigare forskning från Västeuropa och Nordamerika. Avhandlingen består av fyra artiklar. I artikel ett och två används tidsserieanalys av aggregerade data för att skatta i vilken utsträckning förändringar i totalkonsumtionen av alkohol har en effekt på dödligheten i självmord och dödsolyckor i ett antal Östeuropeiska länder. I artikel nummer tre används samma metod för att skatta och jämföra sambandet mellan totalkonsumtion och mord i Ryssland och USA. I den fjärde artikeln används data från frågeundersökningar för att analysera hur risken för att drabbas av alkoholrelaterade problem samspelar med hur mycket alkohol man dricker i olika dryckeskulturer – mer specifikt så jämförs de tre Baltiska länderna – Estland, Lettland och Litauen – med Sverige och Italien.

Resultaten från de tre första artiklarna kan sammanfattas på följande sätt: (i) det föreligger ett positivt signifikant samband mellan totalkonsumtionen av alkohol och dödlighet i självmord, dödsolyckor och mord i de länder som studerats; dvs. en ökning av totalkonsumtionen följs i regel av en ökning i dessa tre dödsorsaker (ii) sambandet är starkare för män än för kvinnor, och (iii) sambandet tenderar att vara starkare i de länder där berusningsdrickande är en central del av dryckeskulturen, mest tydligt är detta för Ryssland. En internationell jämförelse av resultaten visade att sambandet i merparten av

länderna var starkare än vad som tidigare skattats för de södra och centrala delarna av Västeuropa och att sambandet snarare var på en nivå liknande den i Nordamerika. Endast i Ryssland verkar sambandet vara på en liknande eller högre nivå än i Norden där man funnit de starkaste sambanden i tidigare forskning. Resultatet från den fjärde artikeln visade att risken för att uppleva alkoholrelaterade problem i relation till självrapporterad konsumtion i de Baltiska länderna liknade den i Sverige men var avsevärt högre än motsvarande risk i Italien. Sammanfattningsvis ger avhandlingens resultat stöd för att man bör ha ett folkhälsoperspektiv på alkoholproblemen i Östeuropa, d.v.s., prioritera alkoholpolitiska åtgärder som minskar totalkonsumtionen. Dessutom indikerar resultaten att åtgärder som begränsar berusningsdrickande har stora möjligheter att också resultera i en minskning av alkoholrelaterad dödlighet och skador i dessa länder.

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My entry into sociological alcohol research was quite unexpected. About five years ago, I went to Thor Norström's office with some questions about a course paper on time-series analysis. Looking for a job, I took the chance to ask if he knew of any research project that was in need of an assistant. I got the impression that he was not interested. A couple of days later, I went to Mats Ramstedt (the second teacher on the time-series course) to follow up on some questions, and he told me that he and Thor were interested in hiring me as a research assistant and possible PhD student for a project looking at alcohol and harm in Eastern Europe. Leaving the meeting, I was both exhilarated and terrified at the same time. What had I gotten myself into, was I really up for this?

Five years later, I am actually finishing my dissertation. Getting here has been quite a trip. It is not like the rest of your life takes a pause and lets you fully concentrate on the task (even though it has to at some points). Instead you have to manoeuvre through the challenges of life, carrying a little bit of extra weight on your mind. At times I have seriously doubted if I ever would come to this point, and at other times it has felt more manageable, but altogether, it has been a period of my life that I would not want to have missed.

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