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A rapid situation assessment of the market for surrogate and illegal alcohols in Tallinn, Estonia

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Summary

Objectives: To understand the phenomenon of consumption of surrogate and illegal alcohols in Tallinn, capital of Estonia.
Methods: This study, conducted in Tallinn in May 2006, used rapid situation assessment. Interviews with key informants in relevant settings such as emergency departments of hospitals, accommodation for the homeless, police etc. (n = 22), with alcohol abusers (n = 33), natural observations of surrogate sale and consumption venues (n = 46), and tracking of trade data were carried out.
Results: Key informants confirmed that consumption of illegal and surrogate alcohols are widely used by alcohol abusers, a finding confirmed by the alcohol abusers. Availability of surrogates varied by area of the city, mainly sold from street kiosks. Illegally produced spirits were also easily available. Sales of surrogates appear to have increased in recent years.
Conclusion: A range of alcohol-containing substances that appear to be easily available at low cost, and that have high concentration of ethanol or contaminants known to be toxic, were identified in Tallinn. Alcohol policies in Estonia should address the consumption and availability of these substances.

Keywords: Alcohol drinking – Surrogate alcohol – Illegal alcohol – Estonia.

Alcohol consumption has been proposed as an important contributor to the high levels of premature mortality observed in the countries of central and eastern Europe and in particular in the former Soviet Union (Leon et al. 1997; Chenet et al. 1998; McKee et al. 2000; Leinsalu 2002). There is now considerable evidence that the prevalent drinking pattern in this region, involving consumption of large amounts of ethanol at a single occasion (often referred to as binge drinking) is a major factor in the very high death rates from acute alcohol poisoning, alcoholic cardiomyopathy, and sudden cardiac death, while the high overall consumption level contributes to the high death rate from cirrhosis (Leon et al. 1997; McKee and Britton 1998; Leinsalu 2002; Murray et al. 2002; Laatikainen et al. 2003). The magnitude of the problem is apparent from a simple comparison: accidental poisoning by alcohol among men was 26.4 per 100,000 inhabitants in Estonia compared with an EU average of 1.2 in 2004. Moreover, the situation is worsening, with age standardized death rates from chronic liver disease and cirrhosis trebling between 1990 and 2004 in Estonia (World Health Organization 2006).

Recent work has highlighted the importance of consumption of surrogate alcohols (substances containing alcohol not intended for drinking, such as aftershaves, alcohol-containing medicines, cleaning liquids, and fire lighting fluids) and illegally produced alcohol (home produced samogon ("moonshine") and vodka produced illegally in factories) (McKee et al. 2005; Lang et al. 2006). However, the nature of this phenomenon remains poorly understood.

Estonia, the smallest country in the Baltic region (1.35 million inhabitants), with capital city Tallinn (400,000 residents) regained its independence in 1991 after 50 years Soviet occupation (Statistics Estonia 2006). This political change was accompanied by an unprecedented, at least in peacetime, increase in mortality which coincided with the removal of

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many controls on alcohol import and production. The years 1994–95 showed signs of stabilization and modest economic growth. However, while many benefited from these recent changes, there was also growing evidence of marginalisation of sections of the population. There was an increase in the number living in poverty, as well as higher levels of crime, often leading to a sense of insecurity and disillusionment (Kutsar 1997).

Alcohol consumption in Estonia, as in other post Soviet countries is high especially among men (Bobak et al. 1999; Pomerleau et al. 2005). The 2004 survey of "Health behaviour among the Estonian adult population" reported that 7.1 % of men aged 16–64 years consumed alcohol almost every day during the previous 12 months and 17.3 % consumed more than 170 g of absolute alcohol during the last seven days (National Institute for Health Development, 2005).

This situation requires an appropriate policy response, which to be effective must be based on information about the nature of alcohol consumption in Estonia. Unfortunately, most previous studies in Estonia have focused on conventional alcohol beverages (beer, wine and spirits) and has failed to capture consumption of other important sources of alcohol. For example, a 2005 survey by the Estonian Institute of Economic Research found that 10 % of those consuming alcohol only purchased illegally produced substances (Estonian Institute of Economic Research, 2005).

Some things are already known about the market for surrogates in Estonia. They provide a cheap and concentrated source of ethanol for drinking (McKee et al. 2005). A 240 ml container of aftershave costs about the same as 100 ml of vodka. Vodka is on average 43 % ethanol by volume, while the medicinal tinctures bought for drinking are 60 % and the eau de colognes are 90–97 % ethanol by volume (McKee et al. 2005). Because surrogate alcohols are not sold for consumption they avoid excise duty and, given their much higher concentration, are typically up to 6 times cheaper per unit of ethanol than vodka. It is, however, increasingly clear that although many of these substances, and in particularly the cheap eau de colognes in attractive containers imported primarily from Ukraine, are in reality distributed and sold in the knowledge that they are being drunk. Yet as they are classified as perfumes they can be sold legally in Estonia. This creates a strong incentive for heavy drinkers with limited financial resources to consume surrogates. Toxicological analysis of a selection of surrogate alcohols bought in Izhevsk, Russia, and in Estonia revealed high concentrations of ethanol but no impurities, such as long chain alcohols or methanol, whereas home-produced samogon, while of about the same ethanol concentration as vodka, contained significant levels of hepatotoxic long chain alcohols (McKee et al. 2005; Lang et al. 2006). There are, however, many unanswered questions about surrogates, in particular whether they really are an important source of alcohol for heavy drinkers, how easily available are they, and how and where are they sold? Furthermore, if an effective policy intervention is to be developed, it is necessary to understand something about the lives of those who consume surrogates.

This report describes the results of rapid situation assessment (RSA) of consumption of surrogate and illegal alcohols in Tallinn, Estonia. RSA is a practical public health tool that is well suited to undertaking cost-effective and pragmatic research in a range of social, cultural, and economic environments, particularly when inadequate data exist and an answer is needed quickly to inform policy. Research into hazardous drinking is known for its practical and methodological difficulties, particularly because it involves hard-to-reach groups in society. Population surveys tend to exclude those of most interest; those who are on the margins of society who may be most likely to consume surrogate and illegal alcohol. The RSA approach is characterized by speed and the use of multiple methods (analysis of key informant interviews, focus groups, observations, and mapping, among others) (Rhodes et al. 1999). It has been used in the fields as diverse as nutrition (WHO, 1995), drug use (Rhodes et al. 1999; McDonald 2005; Stimson et al. 2006) and HIV/AIDS (Weir et al. 2002; Stimson et al. 2006). There is some experience in its use in Estonia, where it was used to describe the spatial patterning of sex work in Tallinn (Aral et al. 2006).

The aim of this study was to provide detailed information about the market for surrogate and illegal alcohols and, in particular, to describe the spatial patterning of surrogate sale and consumption venues in Tallinn, Estonia.

Methods

The RSA was carried out in Tallinn over a three day period in May 2006 by a team of eight field workers with a background in social work, psychology, nursing, public health or forensic medicine. The RSA methodology employed in this study included four data collection techniques: in-depth interviews with key informants (n = 22) and alcohol abusers (n = 33), naturalistic observation and geo-mapping of surrogate sale and consumption venues (n = 46), and information on turnover by the main Estonian distributor of surrogates.

The purpose of the key informant interviews was to collect information about the provision of services, specifically social care, medical care and accommodation being provided for heavy drinkers. The sample was created by undertaking a preliminary mapping exercise to identify all agencies, from

Table 1 Key informants (n = 22) interviewed during rapid assessment in Tallinn, 2006

Key informant (n)	Institution
Physician	Department of patients without medical insurance, East Tallinn Central Hospital
Physician	Emergency Department, East Tallinn Central Hospital
Pathologist	Pathology Centre, East Tallinn Central Hospital
Psychiatrists (3)	Wismari Hospital (Substance abuse treatment)
Physician Nurse	Emergency Medical Service
Nurse Staff member	Emergency Department, North Estonian Regional Hospital
Director Staff member	Day Centre, Salvation Army
Director	Estonian Red Cross
Member of the board	Oleviste Church Social Service
Shelter staff	Homeless shelter I
Shelter staff	Homeless shelter II
Staff member	Social Rehabilitation Centre I
Social worker	Social Rehabilitation Centre II
Nurse Social worker	Central Prison Hospital
Specialist in social services	Social Welfare and Health Care Department, Tallinn City Government
Police officer	Estonian Police

any sector, that have contact with marginalised people (those perceived as lacking desirable traits or deviating from the group norms and tending to be excluded by wider society and ostracised as undesirables).

This was facilitated by the existence an electronic directory of all governmental and non-governmental agencies providing services to the public in Estonia. This initial list was allocated to meaningful categories (health care, housing, social welfare, police, prisons) and one or more organisation was selected from each category. Each organisation was then contacted by phone to identify a key informant who was willing to participate in the study, with all providing an interviewee. These interviews were all conducted in Estonian, although the questionnaires had also been prepared in Russian. These interviews were semi-structured, consisting of thirteen mainly open-ended questions covering areas such as the population with which they came into contact, their knowledge of and attitudes to consumption of surrogate alcohol and the experiences with surrogates of those with whom they came into contact. The interviews lasted from between 20 and 40 minutes. Table 1 summarises the key informants who were interviewed during the RSA.

Alcohol abusers were identified by the key informants in the first stage. These key informants facilitated the introductions and helped to explain the purpose of the study. These interviews sought information about their alcohol consumption (type, frequency and duration of drinking), and accessibility of surrogate and illegal alcohol. All those approached agreed to be interviewed. Interviews were conducted in a wide variety of settings, such as hospitals, soup kitchens, shelters, day centres and a church. Estonian or Russian was used depending upon the language preferred by the interviewee. These interviews were structured and captured socio-demographic, economic, family and housing data, experience with different types of alcohol, health problems, and the nature of the illegal alcohol market. These interviews took about 15 minutes. Table 2 summarises the characteristics of the alcohol abusers who were interviewed during the RSA.

Naturalistic observation began by drawing a grid over a map of the city. This was used to identify the predominant land use in each part of the city. Each of these settings was then explored systematically by car to identify areas where surrogate outlets were situated. It was soon apparent that some areas (those dominated by private houses, the old historic city) did not contain surrogate outlets, so these were not studied further. Other areas (city centre, apartment blocks, commercial areas) were then explored on foot. A more detailed exploration was undertaken around the central train station and the market nearby, as this is an area where public drinking is common and where surrogates are known to be especially

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Table 2 Alcohol abusers (n = 33) interviewed during rapid assessment in Tallinn, 2006

Gender (n)	Age (years)	Place of interview
M (5) F (3)	36, 43, 50, 50, 51 49, 50, 50	Homeless shelter I
M (5) F	35, 38, 41, 63, 68 55	Homeless shelter II
M F	65 60	Social Rehabilitation Centre I
M (2)	35, 46	Social Rehabilitation Centre II
M	44	Soup kitchen, the Salvation Army
M (4) F	40, 41, 49, 52 53	Oleviste Church Social Service
M (8)	23, 39, 43, 55, 59, 60, 60, 61	Department of patients without medical insurance,
F	44	East Tallinn Central Hospital

easily available. The purpose of the naturalistic observation was to identify areas of surrogate sale and consumption venues and prepare a map that could be used in a subsequent intervention.

At the end of each day, the rapid assessment team conducted systematic debriefings of their individual observations and interpretations. Any discrepant impression was followed by further information gathering to clarify and resolve the discrepancy.

Results

Key informant' reports

There was a consensus among interviewees that illegally produced alcohol was easy to obtain from certain individuals on the streets and in the markets, while surrogate alcohols were available from kiosks.

Interviewees working in health agencies confirmed that alcohol was a major cause of ill-health among those living on the margins of society; nearly all those attending a clinic for persons without medical insurance (because they are unemployed) have illnesses in which alcohol is a predisposing or causal factor. Furthermore, surrogates and illegally produced alcohol was identified as a major source of the alcohol consumed.

Interviewees working in agencies dealing with homeless people reported that shelters mainly catered for those homeless people who were older, had disabilities, or had recently been released from prison. There was, however, a shortage of facilities in relation to need. Other types of homeless people typically lived in abandoned buildings.

The two shelters visited open at 9 pm each evening and close at 9 am the following morning. These shelters differed in the standard of facilities and services offered, and by the appearance of the clients using them. One shelter had very run-down facilities. It was a Soviet-era sobering-up facility. People were sleeping on the floor in the dirtiest of its rooms. Only a few clients were allowed to remain during the day; these were individuals who were very ill or disabled. Although there was a rule that clients could not be admitted if drunk or in possession of alcohol, (with a penalty of being excluded for between 3 and 5 nights), in reality, many were drunk on the evening the visit was undertaken. The researchers were told that this shelter was to be torn down and replaced by a new building.

In contrast, the other shelter was quite modest. Users were not permitted to remain in it during the day. Also, it was reported that this shelter was planning to begin charging fees in the near future.

In the day centres visited, interviewees described clients as being satisfied with their daily routine: spending night at a shelter, then scavenging for empty bottles from the streets, parks, and bins, then going to the day centre to have lunch and watch television, returning to the shelter in the evening. When offered work, they usually declined it and were considered unwilling to break their daily routine.

Self-reports from current alcohol abusers

Most (78 %) of the alcohol abusers interviewed were men. The mean age of men and women was 48.7 ± 10.2 years with no statistically significant age difference between genders.

While difficult to generalise, a common narrative was that an individual lost their job, often because of heavy drinking, which propelled them on a downward spiral. Almost all interviewees were now unemployed although a few engaged in casual work. A few had been offered work on building sites but were unfit for heavy manual work. Many scavenged in bins for discarded food or for empty bottles; by returning ten

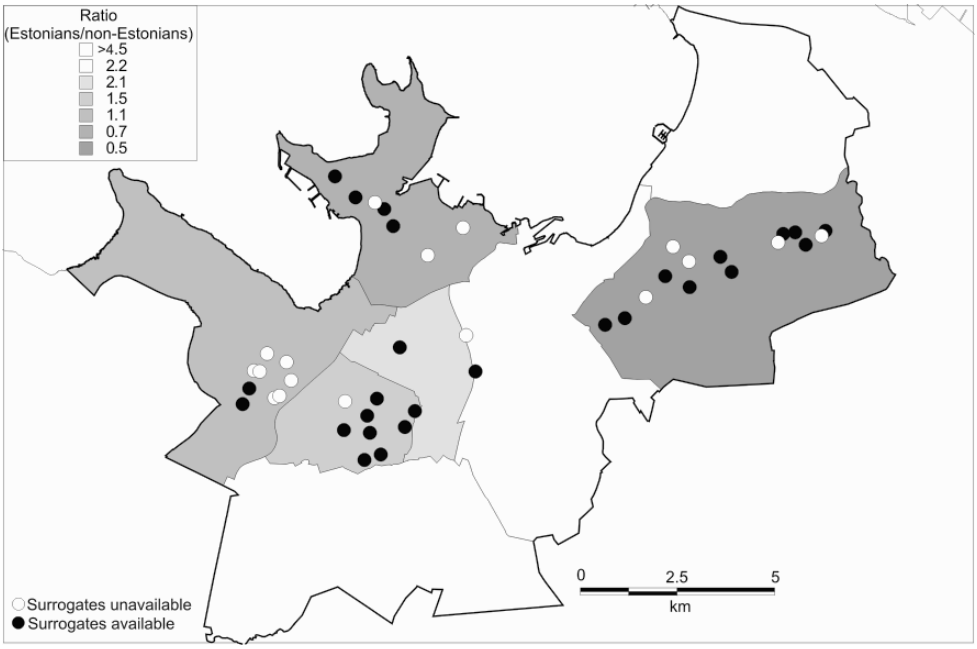

Figure 1 Map of observed kiosks (n = 46) by availability of surrogates and prevailing nationality by residential area in Tallinn (population data from year 2000)
Source: Authors' survey and Population Census 2000 (Statistics Estonia)

empty bottles to a recycling centre they could earn enough for a bottle of surrogate. They travel on public transport without paying as there is no mechanism to extract payment from them if caught. Most seemed surprisingly content with their situation.

Those interviewed typically lived either in shelters for homeless or abandoned buildings, confirming the statements of the key informants. Heavy alcohol use was widespread in this population, which for the present purposes we defined as drinking for an extended period of time during which the individual repeatedly drank to intoxication and was unable to undertake their usual activities or fulfil their obligations. Illegally produced alcohol and surrogates were the primary sources of alcohol. Interviewees cited the low price as the most important reason for drinking these substances. Again confirming the statements of the key informants, the heavy drinkers interviewed indicated that illegal spirits could be purchased from certain individuals on the street or in the market almost everywhere while surrogates were widely available in kiosks. The most common surrogates that are drunk are aftershaves and fire lighting fuels.

Naturalistic observation and geo-mapping of surrogate sale kiosks

Kiosks are widely distributed throughout many parts of Tallinn (areas with apartment blocks, city centre, commercial areas) and, in those areas few people would have to walk more than 200 m from home to reach one. They are often situated close to well-supplied shops selling a wide range of groceries. However, the kiosks seem to have found a highly specific market niche, selling a rather eclectic set of products, typically cigarettes, washing powder, condoms, pet food, and surrogates. Some also stocked "souvenirs" but it was not clear whether these were ever sold and they may simply have been present to provide a legitimation for the existence of the kiosks. They typically remain open late into the evening, until 11 pm, while most shops close at 9 pm. Those working in kiosks are entirely female while their customers are overwhelmingly male.

Among the kiosks observed (n = 46) surrogates were available in 29 (63 %). The probability that a kiosk would sell surrogates varied within the city. Surrogates were less easily available in kiosks in the centre of Tallinn, although here the kiosks selling them were highly concentrated in a market beside the main railway station. The station is a well known focus for homeless people. There also seemed to be a difference in residential areas of the city. Figure 1 is a map of Tallinn with the locations of kiosks by residential area and nationality marked according to whether they sell surrogates. Although it was not possible to undertake a formal analysis, virtually all kiosks in poorer areas and inhabited by non-Estonians (primarily Russians) sold surrogates whereas those in one wealthy area of Tallinn were owned by a company that had taken them up-market so they now sold newspapers and soft drinks.

Among those kiosks selling surrogates, observation indicated that surrogates were the main product sold. Typically, the shelves in the kiosks were sparsely stacked with a few of the other products, while there were large stacks of surrogates on the floor.

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Figure 2 Surrogate alcohols sold in Tallinn, 2006

Table 3 Commonly sold surrogates, 2006

Product	Language of label	Flavour	Ethanol concentration (from label)	Ethanol concentration (from assay)	Source
Troinoi	Estonian	Pine	60 %	64 %	Kiev, Ukraine
Leda (lemon)	English/ Estonian	Lemon	60 %	62 %	Kiev, Ukraine
Leda (raspberry)	English/ Estonian	Raspberry	60 %	62 %	Kiev, Ukraine
Lemon Lotion Aftershave	English/ Estonian	Lemon	60 %	67 %	Kiev, Ukraine
ПЕРСИК (peach)	Russian	Peach	Not stated	55 %	Kharkhov, Ukraine

Source: Lang et al. 2006

In most cases the labels contain pictures of fruit (Fig. 2) and, tellingly, when asking to purchase surrogates but not expressing a preference for a particular brand, one is often asked what flavour, rather than scent, one wants, even though these products are ostensibly sold as cosmetics. The most widely used products appear to be lemon or peach flavour. Naturalistic observation was carried out rather late in the evening and individuals were commonly observed buying 200 ml bottles in quantities of between six and ten.

Sales data

The market was dominated by only five brands (Tab. 3). Although the contents, producers and distributors were listed on the labels in Estonian, some product names were in English, such as "Lemon Lotion Aftershave".

Four of these products were distributed by a single Estonian distributor. The legal documents of this company state that its trading activity involves "cosmetics and perfumes". Figure 3 shows a marked increase in its annual income from sales since 1999, although there was a small decline in 2005, when the company made a loss for the first time. In 2004 it had made a profit of 3.8 % on total turnover.

These figures also make it possible, with caution, to estimate the size of the market in surrogates. In 2005, this company had sales of EEK (Estonian kroons) 10,656,664 (Euros 663,119). 200 ml bottles of surrogates sell in kiosks for EEK 8 (Euros

Table 4 Strengths and limitations of rapid situational assessment

Strengths	Limitations
Speed	Lessons often not generalisable
Low cost	Requires skilled field workers
Situational focus and practical adequacy	Not scientific perfection
Exploits existing data	May give incomplete picture
Draws on multiple methods and data sources	Often viewed (incorrectly) as "second rate"
Facilitates access to hard to reach groups	Limited by data already existing or easily collected
Allows assessment to develop in response to emerging findings	
'optimal ignorance' – ignores what is irrelevant	

Source: Rhodes et al. 2000

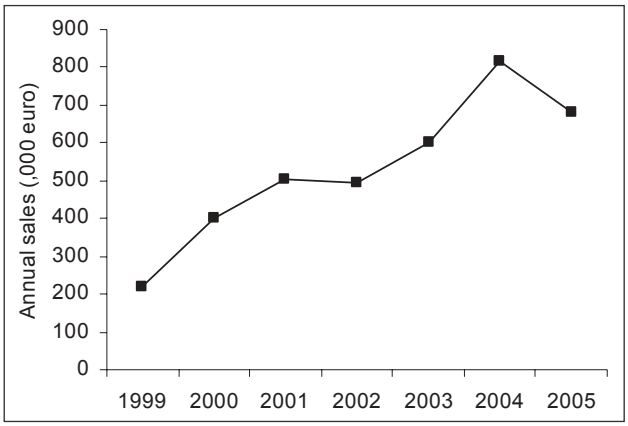

Figure 3 Annual sales of main distributor of surrogates in Estonia
Source: Compiled by authors from data extracted from Estonian Centre of Registers and Infosystems, Ministry of Justice

0.5). If it is assumed that the profit made on each bottle by the kiosk owner is EEK 1, making a wholesale price EEK 7, then the annual number of bottles sold would be approximately 1.5 million, which equates to 4170 every day. This must be seen in relation to the size of the Estonian population. To illustrate the scale of these sales it equates to one in every 80 Estonian males aged between 20 and 60 buying a bottle each day. Furthermore, it should be noted that this represents sales of products distributed by only one company and excludes the considerable volume of illegally produced vodka and other technical spirits consumed.

Discussion

Before discussing the results, the limitations of the method and the study must be considered. It is important to recognise that rapid situation assessment is complementary to and not a substitute for more traditional forms of research. It has strengths and limitations (Table 4) (Rhodes et al. 2000).

This assessment was, by design, rapid so that data collection was completed in a short time, the number of interviews was not exhaustive and the study was performed in a single city. It is likely that consumption of samogon would be much higher, and other surrogates correspondingly lower, in rural areas. Therefore generalization of this study must be undertaken with caution.

On the other hand, it is important to emphasise that this is a difficult phenomenon to research, involving an activity that is on the verge of legality and involves a hard to reach population that would be missed by conventional surveys. It was notable that information from all four sources of data was entirely consistent. Statements by key informants from different sectors tallied with each other and with accounts by alcohol abusers. These accounts were supported by the naturalistic observation. Obviously, in a single rapid appraisal such as this it is impossible to assess trends over time. However, the use of sales data does provide a valuable additional dimension, indicating first that the overall quantity of surrogates sold is large and that it appears to have increased at least until very recently. It is too early to know whether the recent downturn will continue and, of course, much will depend on whether any effective policy response comes about as a result of this study.

Despite these limitations, the findings have several important implications for policy, not least because of emerging evidence of a very strong association between the consumption of surrogate alcohols. This work, undertaken in Russia, found a clear, specific, dose-response relationship between surrogate consumption and a range of alcohol-related disorders, including alcohol poisoning, cardiomyopathy, cirrhosis, and ischaemic heart disease, which persisted after adjusting for consumption of beverage alcohol, contributing to a substantial proportion of overall mortality among working-age men (Leon et al. 2007).

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Regarding implications of the current study, firstly, consumption of surrogate and illegal alcohol is widespread in Estonia and should be a concern for public health authorities. There is much that can be done to address this issue. Many of the purposes for which surrogates are sold can be achieved with alternative products. For example, in many western countries firelighters are made from paraffin wax blocks and alcohol is not sold as a fire lighting fluid. If it is, it is in the form of methylated spirits, which is coloured purple and is known to be highly poisonous. *Secondly*, surrogates and illegal alcohol are very easily accessible through numerous sales outlets. There is extensive evidence that consumption of beverage alcohol is related to outlet density (Gruenewald et al. 1993). In many kiosks surveyed, eau de cologne bottles were the most prominent item that was sold. Moreover, surrogates like eau de colognes and aftershaves are sold in brightly labelled bottles of between 85 and 200 ml. They are virtually the same as similar products that are sold extensively in Russia (McKee et al. 2005). Unlike their western equivalents, the aftershaves sold in these kiosks do not have a discernibly pleasant scent and the warning "for external use only" is in very small writing. As in Russia, it is difficult to believe that these substances are sold for any purpose other than drinking. Thus, a restriction on surrogate sale is an obvious policy target. Perfumes and aftershaves can be taxed to ensure they are at least as expensive as spirits to be drunk. If the Estonian government rejects this approach then it can require those sold to have chemicals in them that will make anyone drinking them vomit. This would not affect their function as perfumes.

Conclusion

A rapid situation assessment was conducted to make a contribution to understanding the nature of hazardous alcohol drinking in Tallinn. This study provides some information that could help shape integrated, intersectoral policies to tackle them, although much more detailed research is needed to understand the reasons why people drink heavily and the context in which they do so. Indications for future research identified from this rapid assessment would include the conduct of an epidemiological study assessing the prevalence of drinking surrogate and illegal alcohols in Estonia.

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Zusammenfassung

Eine Schnellerfassung der Situation für den Markt von Surrogaten und illegalen Alkoholika in Tallinn, der Hauptstadt von Estland

Fragestellung: Das Phänomen des Konsums von Surrogaten und illegalen Alkoholika in Tallinn, der Hauptstadt von Estland zu verstehen.

Methoden: Für die Studie, durchgeführt in Tallinn im Mai 2006, wurde die Schnellerfassungsmethode „RSA" (*Rapid Situation Assessment*) angewandt. Es wurden dazu Interviews an relevanten Orten wie Notaufnahmen in Krankenhäusern, Obdachlosenheimen und bei der Polizei usw. (n = 22) mit Alkoholabhängigen (n = 33) geführt, der Verkauf von Surrogaten und mehrere Konsumtreffpunkte (n = 46) beaobachtet, und Daten über den Handel gesucht.

Resultate: Die Schlüsselinformanten bestätigten, dass der Konsum von illegalen und Surrogatalkoholika weit verbreitet ist. Der Zugang zu Surrogaten variiert je nach dem Teil der Stadt, hauptsächlich werden sie in Strassenkiosken verkauft. Illegal hergestellte Spirituosen waren ebenfalls leicht erhältlich. Der Verkauf von Surrogaten scheint in den letzten Jahren zugenommen zu haben.

Schlussfolgerung: In Tallinn wurden eine Reihe alkoholhaltiger Substanzen gefunden, die scheinbar leicht und günstig zu erhalten sind, und eine hohe Konzentration an Ethanol oder an als toxisch bekannten Verunreinigungen aufweisen. Das Ziel der Alkoholpolitik in Estland sollte es sein, den Zugang zu diesen Substanzen zu erschweren, um dadurch die Senkung des Konsums zu erreichen.

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