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(Eds.)

Substance Use in a Comparative Perspective

The Case of Bulgaria,
Czechia, Croatia,
Romania and Slovakia



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Foreword

When we first met in 1990, the times were full of hope for change in the political and social situation of Eastern and Central European countries that, for decades, had been governed by the Soviet model of a centrally directed economy and an autocratic political system. Compared to Western European countries, life expectancy was relatively low, while substance use and abuse were high. We knew that it would take more than principle change to remedy this and other health characteristics in the region. We were convinced that the role of lifestyle was the crucial factor in determining the population's health status.

Today, scholars across the globe are paying more attention to the nature and cause of deviant behaviors and related diseases of civilization in non-socialist countries. We saw an opportunity to impact the current body of literature. Under a joint research project of the University of California, Berkeley, and the Charles University in Prague entitled, *Finance and Mental Health Services Training in the Czech Republic/Central Europe*, from which the main points of this book were derived, we are pleased to present new information about the development of the causes and consequences of substance use and abuse in Bulgaria, Croatia, the Czech Republic, Romania and Slovakia. We also offer a clear understanding of the social, economic, behavioral, and demographic contexts of the contemporary phase of development of the entire Euro-Atlantic civilization. We hope that you find the enclosed results an enlightening and thought-provoking addition to the field.

Prof. Richard Scheffler, University of California, Berkeley, USA
Prof. Martin Potůček, Charles University in Prague, Czech Republic

1. Introduction

Substance use is a serious social problem in most countries around the world. The extent of worldwide psychoactive substance use is estimated at 2 billion alcohol users, 1.3 billion tobacco smokers, and 185 million illicit drug users (WHO 2002). The proportion of the total burden of diseases attributable to tobacco and alcohol in European society is estimated around 12 and 10%, respectively (EMCDDA 2009).

The prevalence of substance use is not, however, equally distributed around the globe. Cross-national empirical studies (e.g., EORG 2003) have provided persuasive evidence of massive variation among nations in terms of both mental health disorders and mental wellbeing. These findings support the established scientific claim that mental health is influenced not only by genetic and psychological factors but also, to a high degree, by social, cultural, and economic factors. The latter include socioeconomic status (income, education, and occupation), lifestyle, religion, family ties, etc. (Berkman and Kawachi 2000, Marmot 2005, Marmot and Wilkinson 2006, Midanik and Room 1992, Klingemann and Gmel 2001). Social support and social capital at both the individual and the societal levels are also very important determinants of mental health disorders (e.g., Scheffler and Brown 2006).

To sum up, substance use varies substantially across time and space and this variation is significantly determined by changes in economic, social, and cultural factors. In this respect, post-communist countries are a particular target of research interest for several reasons. First of all, empirical evidence suggests that substance use has been growing in those countries, especially as far as young people are concerned (e.g., Hibell et al. 2004). Second, while post-communist countries experienced similar regimes for almost fifty years, they chose very different transition strategies and implemented different public policies after 1989. Thus

comparing those countries can be thought of as analyzing a unique kind of natural experiment. Moreover, during the twenty years that have passed since 1989, former communist countries underwent substantial changes. The transformation period introduced important progress not only in the economy and foreign trade but also in the political sphere, giving rise to democratic regimes in the majority of post-communist countries. On the one hand, the countries witnessed improvements of health service and population health but, on the other hand, the lifestyle of many people within their increasingly modern and dynamic societies became more stressing and chaotic. These particular problems may be interrelated with increasing levels of social pathology, most often expressed as various forms of risk behavior (Dzurová, Smolová and Dragomirecká 2000). Thus, analysis of the development in these countries may also elucidate the effects of transformation upon substance use.

Based on discussion, we chose five countries for analysis – Bulgaria, Croatia, Czechia, Romania, and Slovakia. One reason for this choice was simply a pragmatic one – researchers from these countries participated in the project entitled *Finance and Mental Health Services Training in the Czech Republic/Central Europe*. The second, and more important reason, was that the selection represented three geographically and historically distinct types of post-communist countries. The Czech and Slovak Republics had formed one united state—Czechoslovakia—until 1993. Czechoslovakia used to be at the “top of the class” among communist countries in terms of economic and social development. Culturally, the two Central European countries had always been close to their western neighbors, Germany and Austria. It is interesting in itself to analyze changes in the two countries after they parted peacefully in 1993 and later joined the EU on the same date (May 1, 2004), thus coming closer again.

Another “pair” of countries in our analysis consists of Romania and Bulgaria. The two Black Sea countries are connected not only by their geographical location but also share parts of their histories. Both prepared for and succeeded in joining the EU at the same time (January 1, 2007). The fifth country in our analysis, Croatia, is in many respects distinct from the rest. Before 1989 it was part of the Socialist Federal Republic of Yugoslavia. Despite communist dictatorship, economic and personal freedoms were higher than in other communist countries. Yet, this comparative advantage was destroyed by a devastating civil war in 1991–1995 from which the country has been recovering to this date. Croatia is also the only non-EU member among the five countries (it has a candidate status, however).

The countries in our “sample” have, on one hand, something important in common (i.e., the communist past) that helps us “control” for many factors (such as political and economic regime and its changes), but on the other hand, are sufficiently heterogeneous for us to assume substantial differences among them. Indeed, as we will show, there is a lot of interesting variance among the countries that is necessary – but often quite difficult – to explain. Limiting our study to “only” five European post-communist countries (out of several dozens, counting in all independent states of former Yugoslavia and Soviet Union) enabled us to take those differences duly into account (see Chapter 3 on country profiles) and maintain sufficient focus.

At the beginning of the project work, our intention was to analyze not only all types of substance use, but also developments in mental health and disorders in general. For several reasons, however, we took an early decision to focus upon substance use only. The first reason is quite clear. Despite strong influence of biological and genetic factors upon the level of substance use (and especially upon the proneness to become substance dependent or addicted), there are strong external factors (such as substance availability) and that can be, at least to a certain level, modified by public policies. This stands in contrast, for example, to schizophrenia or depression, which seem to have deeper biological roots and thus to be less sensitive to policy intervention. For instance, it has been noted that nicotine dependence is “the most prevalent, most deadly, most costly, yet most treatable of all psychiatric disorders” (Hughes 1999).

The second reason to focus upon substance use only was the fact that, already in the early stages of the project, it became clear that the development of various aspects of mental health often follows quite different trajectories. For instance, it is not safe to assume that the development of suicide rates at the *macro* level imitates that of alcohol abuse. We will make it clear (see Chapter 2) that even in substance use, one can find very different patterns of development both between and within states. We decided to limit the problem of substance use to its three most important segments: tobacco smoking, alcohol use, and illicit drug use. Narrowing the scope of our investigation to five countries and to three segments of substance use helped us, we hope, to maintain sufficient focus and at the same time see the development of substance use more complexly and from the macro perspective.

Indeed, we hope that exactly in this macro-perspective lies the added value of our work. In this respect we must stress out that substance use

is a widely studied phenomenon. There is an almost countless number of articles on the topic. Dozens of research institutes around the globe concentrate upon different aspects of substance use – prevention, epidemiology, harm reduction, etc. Most studies focus upon individual or group level factors such as individual income, social support, or self-efficacy. However, individual level factors are always embedded in a broader context (Hawkins, Catalano and Miller 1992). Only relatively recently have researchers started to pay attention to the context, including the characteristics of one's direct social milieu: family, school, work, etc. (e.g., Monden, van Lenthe and Mackenbach 2006, Pickett and Pearl 2001, Duncan, Jones and Moon 1996). With the development of multilevel modeling, higher order contexts – such as communities – have been included into analysis.

In this book, we have aimed at involving an even higher order of context – national states. The reason is that this enables us to take into account different public policies, economic conditions, cultural practices, and institutions. Only when the national level is taken into account can we distinguish many factors that are highly important – but often omitted. Yet, of course, many methodological questions arise (Twigg, Moon and Jones 2000, Cummins et al. 2007).

The first and obvious methodological problem is lack of reliable and comparable data. While the WHO database represents an invaluable source of data, the system of data gathering does not keep with the highest methodological standards in all cases. Also, specific aspects of health are not (and cannot be) developed in-depth. Thus it is necessary to “triangulate” the data source with other sources, especially local ones. The latter are often scattered around and unavailable to a comparative researcher.

The second problem is that comparative analysis results are often very difficult to interpret. Many possible “tacit variables” are hidden to the outside researcher. An example, also discussed in this book, is represented by the various “drinking cultures” and tolerance towards alcohol consumption (e.g., Hall 2003). Furthermore, the data may be substantially biased. For instance, unrecorded alcohol consumption seems to be especially high for countries like Slovakia and Romania (Rehm and Gmel 2001).

Given the reasons above, we decided for a methodological approach combining quantitative comparative analysis of officially available statistics with an insider and more qualitative view. Given the fact that research findings were scattered around various sources (local research

reports, local language journal articles, articles in international journals, etc.), the necessary first step was to put those pieces of evidence together. We also asked national experts for comments on publicly available comparative data – in terms of their quality and reliability as well as their interpretation. To help them with interpretation and entrench the discussion, we formulated a theoretical framework.

In this book we thus follow two main objectives. First, we aim at putting together different pieces of evidence on developments of substance use and risk behavior in five post-communist countries over time. In other words, our first objective is to build a complex and reliable empirical evidence base for empirical comparison (and identify evidence gaps). Second, we try to analyze and interpret such developments using both quantitative and qualitative analysis and to relate them to the formulated theoretical framework. Since available empirical evidence is often far from conclusive, the findings presented are sometimes rather exploratory and should be tested by further and more detailed research.

The book is structured as follows. In the second chapter, we review various factors that have been found to be associated with substance use. We try to present them in a complex and systematic way and create a conceptual framework for understanding and explaining substance use in a comparative way. We also specify and define all basic concepts used in the book and their interrelations.

The third chapter describes the developments of substance use over time in five countries analyzed. This description is based upon publicly available WHO data, along with supplementary comments and interpretations by national experts. The fourth chapter is devoted to country profiles of all five countries involved in the project and in-depth overviews of developments in their respective substance use situations. All reviews are written according to the same structure, thus facilitating comparison.

The last chapter differs somewhat from the rest. During our work we constantly felt a necessity of combing macro data with micro data *at the same time* in one analysis. Unfortunately available data did not permit such an analysis, except for the Czech Republic. To show a possible future direction in examining contextual factors, we carried out a multilevel analysis of substance use in the Czech Republic combining data for individuals and regions.

We present the results of our cooperative work with greatest modesty and humility. We do not pretend to give definitive answers. Indeed, this book perhaps poses more questions than answers. In a certain respect

we feel, after more than two years of intensive work, to be just at the beginning of grasping the impact of broader societal and economic factors upon substance use. We can just hope that others will find our work a useful point of departure for their own contributions. It is not by accident that many coauthors of this book stand at the beginning of their research careers. We intentionally tried to include talented young scholars from different parts of Europe in the project in order to facilitate prospective continuation of our work.

The work on this book would not have been possible without a Fogarty International Center grant entitled *Finance and Delivery of Mental Health Services in Central and Eastern Europe* and directed by Richard Scheffler (University of California, Berkeley) with Martin Potůček (Charles University, Prague). We are thankful to both Richard and Martin for their trust in our project as well as many priceless comments. We also would like to acknowledge all the faculty members involved in the project that have contributed countless helpful comments and remarks. We would like to thank namely (in alphabetic order): Neal Adams, Joan Bloom, Tim-Allen Bruckner, Ray Catalano, Howard Goldman, Stephen Hinshaw, Teh-wei Hu, David Mechanic, Matthijs Muijen, and Jiří Raboch. We are also very grateful to the two reviewers of the book: Ladislav Csémy of the Prague Psychiatric Center and Darina Sedláková, Head of the WHO Country Office in the Slovak Republic. Furthermore, no scientific project is possible without those people who help “get things done”. We would like to thank Amy Nuttbrock and James Ross for careful management of our team’s organizational matters and Jan Morávek for careful proofreading, going beyond “mere” reading and often suggesting useful improvements. Special thanks go to Hynek Pikhart who helped us with multilevel data analysis. In case there is any omission in this list, it is purely accidental. Of course, responsibility for the contents of the book is entirely on our side.

Arnošt Veselý and Dagmar Džúrová (Editors)

2. Environmental Factors as Determinants of Substance Use

Arnošt Veselý, Martin Nekola, Jana Spilková, Michala Lustigová

2.1 Introduction

The aim of this chapter is to critically review the literature on determinants of substance use, in general, and environmental factors, in particular. We start by defining some basic terms such as substance use, risk behavior, alcohol, or drugs. Then we proceed to a general discussion of factors influencing substance use. Then we create and discuss the conceptual framework and theories that might be used in researching the effects of social factors upon substance use. Last but not least, we discuss in greater details the factors influencing three aspects of substance use: alcohol consumption, smoking, and other drug use.¹

The general aim of this chapter is thus to provide the reader with overall orientation on what is meant by environmental determinants, risk behavior, substance use etc. and to connect these terms in a common conceptual framework. Special attention will be given to a typology of factors influencing substance use and a discussion of the different levels they work at. In a certain simplification, we first consider *what* we measure (chapter 2.2), then study the general factors that can explain it and then link these factors together (chapter 2.3). Finally, we review what is known empirically about these factors for individual substances (chapters 2.4, 2.5, and 2.6).

1 In the context of our book, the term *drug* refers to a psychoactive substance excluding alcohol and tobacco (see definition below).

2.2 Substance Use - Basic Terms and Concepts

By **psychoactive substances** (or “substances”) we mean any substances that, when ingested, produce quick surges of neurotransmitters and a mood-altering effect. Substances can be classified according to their mood-altering effects into four main classes: stimulants, opioids, sedative-hypnotics and hallucinogens (Parran 2004). They include legal substances such as alcohol, tobacco, volatile substances, and prescribed medications, as well as illegal substances. Substances can get into the bloodstream by many different routes (by swallowing, smoking, injecting, snorting, etc.).

Substance use can have different forms, and we may distinguish various types of substance use. Typologies of substance use can be made on the basis of various dimensions, most importantly:

- *amounts* or *levels* of substance used,
- severity of *effects* of substance use,
- *life-cycle period* in which a substance is used, or
- *purpose* of substance use.

The four dimensions stated above are related (and thus some categories may overlap across typologies), but not synonymous. As for the level of substance use, we may distinguish the following categories on the continuum of substance use (Parran 2004):

- abstinence,
- low-risk use,
- substance abuse, and
- chemical dependence or addiction.

As for the severity of effects of substance use, several typologies are available:

- at-risk use (misuse),
- abuse (or harmful hazardous use), and
- dependence (addiction),
or
- beneficial use,
- non-problematic use (recreational),
- problematic use, and
- chronic dependence.

There are also many different purposes for which people take substances. Substance use has to be seen as a process in which some individuals change from non-users to occasional, regular, or even addicted users later on. Data on substance use indicate that the first

experiments with a particular substance (alcohol, tobacco, marijuana etc.) usually occur during adolescence (Williams, Holmbeck and Greenley 2002). This **experimental substance use** is the period during which users “are not committed to continued use and during which a substance has not yet become a regular part of their lives” (Petraitis, Flay and Miller 1995: 67). As such, it is not usually regarded as generally harmful or necessarily associated with dysfunction. However, this is to some extent contingent on age. Any use by preadolescents would cause concern in many, while the same level of use by a person in late adolescence or adulthood might have a different significance. “[I]t is inappropriate to regard use by younger adolescents as a transient phase of experimentation; it may be, but it also presents a substantial risk factor, particularly in conjunction with other risk factors, for later abuse and dependence” (Gilvarry and McArdle 2007: 637).

The reasons for drug use can vary from drug to drug, from person to person, or from occasion to occasion and may change over the course of lifetime. From this functional perspective, the most common reasons for illicit drug use amongst young people in Britain are to relax, become intoxicated, stay up at night while socializing, enhance an activity, and alleviate depression (Boys, Marsden and Strang 2001). These functions are closely related to recreational drug use, but psychoactive drugs are also used for medical purposes (pain/fatigue relief), physical enhancement (anabolic steroids), spiritual practices (religious rituals) and many others. However, it is not only one’s decision to take a certain drug or not. Individual choices are, to a certain level, constrained by numerous endogenous and exogenous risk and protective factors (see below). Most psychoactive substances induce some level of **substance dependence**.²

In other words, it is very likely that occasional use in early adolescence may escalate and evolve to regular one. Substance use is highly individual and there is no sharp dividing line between use and misuse. However, **substance abuse/misuse**³ is generally the use of any substance(s) for non-therapeutic purposes or specifically the use of medication for purposes

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- 2 Drug dependence is a compulsion to take a drug to produce a desired effect or prevent unpleasant effects when the drug is withheld. Substance/drug dependence can be diagnosed based on physiological dependence, evidence of tolerance (a need for markedly increased amounts of the substance to achieve intoxication or desired effect), or withdrawal, even without physiological dependence.
 - 3 Although „substance abuse“ is a clinical diagnosis in the DSM IV and ICD-10, some authors and organizations regard this term as stigmatizing and prefer term misuse.

other than those for which it is prescribed. As such, it usually includes overeating, however in this study it refers only to cigarette smoking, alcohol abuse, and/or drug abuse and includes all forms of use potentially associated with harm. At present, there are two well-established classification systems covering substance abuse: the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) of the American Psychiatric Association (APA) and the International Classification of Diseases (ICD-10) published by the World Health Organization (WHO). In their latest revisions, both classifications converged strongly, and therefore, diagnostics are comparable for most relevant points.

DSM IV describes substance abuse as a maladaptive pattern of substance abuse leading to clinically significant impairment or distress, as manifested by one or more of the following, occurring within a 12-month period:

- a) recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home;
- b) recurrent substance use in situations in which it is physically hazardous;
- c) recurrent substance-related legal problems;
- d) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance.

Closely related is the diagnostics of **substance use disorders** defined as psychological and physical dependence and abuse. Section F10-F19 of ICD-10 contains a wide variety of disorders of different levels of severity and clinical forms, all having in common the use of one or more psychoactive substances, which may or may not have been medically prescribed. The substances specified are alcohol, opioids, cannabinoids, sedatives or hypnotics, cocaine, other stimulants including caffeine, hallucinogens, tobacco, and volatile solvents. Clinical states that may occur, though not necessarily with all psychoactive substances, include acute intoxication, harmful use, dependence syndrome, withdrawal syndrome/state, withdrawal state with delirium, psychotic disorder, late-onset psychotic disorder, and amnesic syndrome.

Section F10-F19 contains a wide variety of disorders that differ in severity and clinical form but that are all attributable to the use of one or more psychoactive substances, which may or may not have been medically prescribed. The third character of the code identifies the substance involved (see Table 2.1), and the fourth character specifies the clinical state (e.g. acute intoxication, harmful use, dependence syndrome).

Table 2.1 Mental and behavioral disorders due to psychoactive substance use (F10-F19) – substance involved

F10	Mental and behavioral disorders due to use of alcohol
F11	Mental and behavioral disorders due to use of opioids
F12	Mental and behavioral disorders due to use of cannabinoids
F13	Mental and behavioral disorders due to use of sedatives or hypnotics
F14	Mental and behavioral disorders due to use of cocaine
F15	Mental and behavioral disorders due to use of other stimulants, including caffeine
F16	Mental and behavioral disorders due to use of hallucinogens
F17	Mental and behavioral disorders due to use of tobacco
F18	Mental and behavioral disorders due to use of volatile solvents
F19	Mental and behavioral disorders due to multiple drug use and use of other psychoactive substances

Source: ICD-10

2.2.1 Alcohol consumption

Alcohol is a central nervous system depressant. Its physiological effects are a direct function of the volume percentage of alcohol concentrated in the body's blood, which depends on one's body weight. This level of concentration is called the BAC (blood alcohol content) or more often BAL (blood alcohol level). In small doses it slows heart rate and respiration, decreases muscular coordination, dulls the senses, and lowers inhibitions. Large amounts can lead to depression of the various body systems, coma, or even death. Prolonged heavy alcohol use results in tolerance and withdrawal. Alcohol tolerance stands for the need for increased amounts of alcohol to achieve the same level of intoxication. Withdrawal, on the other hand, stands for a range of physical and psychological reactions after significantly reducing or stopping heavy drinking. The most widely discussed diseases attributed to alcohol abuse include: cirrhosis of the liver, hepatitis, heart disease, high blood pressure, brain dysfunction, neurological disorders, sexual and reproductive dysfunction, low blood sugar, and cancer (Royce 1989).

Alcoholic beverages contain ethanol and are known in three major forms regularly consumed. Wine is made through the fermentation of

fruits and usually contains up to 14 percent of ethanol by volume. Beer is brewed from grains and hops and contains 3 to 6 percent of ethanol. Liquors (gin, vodka, whisky, and other distilled spirits) usually contain 40% (80 proof) or 50% (100 proof) of ethanol. Thus a bottle of beer (12 liquid ounces), a glass of wine (4 liquid ounces), and a cocktail with a shot of liquor in it can have about the same alcohol content (0.5-0.75 fl. oz. of ethanol). The definition of drink varies little, and in the United States a standard drink contains about twelve grams of pure alcohol. Standard drink equivalents are thus: one shot (1.5 liquid ounce) of spirits (vodka, gin, whiskey), one 2.5 fl. oz. glass of cordial, liqueur or aperitif, one 5 fl. oz. glass of table wine, and one 12 fl. oz. bottle or can of beer.

According to the World Health Organization, **alcohol misuse** is the use of alcohol that places people at risk of problems, including “at-risk use,” “clinical alcohol abuse,” and “dependence”. At-risk use is the consumption of alcohol in a way that is not consistent with legal or medical guidelines and may present the risk of health or social problems for the user or others. Such situations include underage drinking, drinking if one has a medical problem that is worsened by drinking, etc. Clinical alcohol abuse results in adverse consequences such as the failure to fulfill important obligations or the use of alcohol in physically dangerous situations. Among the three types, alcohol dependence is the most severe type of alcohol misuse and represents a chronic disorder (WHO 1994).

Alcohol abuse covers maladaptive alcohol intake causing problems. DSM-IV states that alcohol abuse occurs when the individual experiences impairment or distress related to any one of the following symptoms within a 12-month period: excessive drinking that leads to repeated failures to fulfill responsibilities at work, school, or home; physically hazardous drinking; repeated legal problems; and continuing to drink despite alcohol-related social or interpersonal problems.

DSM-IV distinguishes between alcohol abuse and alcohol dependence on the basis of the compulsive element in the dependence. **Alcohol dependence** is described as maladaptively high alcohol intake that produces impairment or distress. Persons diagnosed as alcohol dependent experience at least three of the following symptoms, again within a 12-month period: tolerance; withdrawal symptoms when without alcohol; impairment in the ability to control one’s intake; neglect of important activities such as work; large amounts of time spent on alcohol-related activities; and continuing to drink despite experiencing recurring alcohol-related physical and psychological problems.