



EMCDDA PAPERS

Drug-related homicide in Europe: a first review of the data and literature

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Abstract: Drugs can act as facilitators for all types of violence, including drug-related homicide (DRH). Addressing this phenomenon is of importance not only given the severity of a homicide event and its high costs to society, but also because DRH has the potential to act as a valuable indicator of wider drug-related violent crime. Comparing DRH levels between countries can be a valuable tool for identifying trends and new threats. As part of its programme for developing and improving drug supply indicators, the EMCDDA has been expanding its monitoring to include measures of wider drug-related crime, including DRH. However, there appears to be a significant gap in the available European data on DRH. This Paper aims to identify relevant European data sources on DRH, to assess the role of drugs in national homicide data, and to assess these sources and data in terms of monitoring potential. A critical review was conducted of existing national and international homicide data sources.

Data on DRH is systematically prepared in the Czech Republic, Denmark, Finland, Germany, Italy, the Netherlands, Norway, Slovakia, Sweden and the United Kingdom (England, Wales, and Scotland). Available data suggests both between- and within-country variability in relation to the role of drugs in homicide events. Based on these findings, four key obstacles can be identified in terms of the current ability to monitor DRH: missing data, fragmented data, comparability issues and data quality reservations. To overcome these obstacles there is a need to define and operationalise concepts, based on common definitions and integrate them into the EMCDDA monitoring system.

Keywords drug-related homicide
data sources monitoring system
Europe

Recommended citation: European Monitoring Centre for Drugs and Drug Addiction (2018), *Drug-related homicide in Europe: a first review of the data and literature*, EMCDDA Papers, Publications Office of the European Union, Luxembourg.

Introduction

In 2017, the EMCDDA elaborated and expanded its framework for monitoring the supply side of the drugs phenomenon to reflect the developments in the drug markets as well as their wider harms and impacts (EMCDDA, 2017). The impact of drugs and drug markets goes beyond affecting those who are directly exposed to drugs in terms of health and social problems. In a wider sense, the issue is of serious concern in relation to the security situation in Europe and may deeply affect neighbourhoods and local communities, as drug use and drug markets can act as cross-cutting facilitators for all types of violence (EMCDDA and Europol, 2016; UNODC, 2014, p. 71). This drug-related violence can inflict an extensive burden on societies (Thomson, 2017, p. 1). Not surprisingly, this constitutes an important topic for policymakers and practitioners in many countries (Ajzenman et al., 2015).

One of the crimes within this wider category of drug-related violence is homicide, which is generally considered one of the most serious of all crimes (Smit et al., 2012, p. 5). Homicides lead to high social costs due to loss of life, human suffering, feelings of insecurity, decreased community development, and erosion of human and social capital (Granath et al., 2011, p. 10). Consequently, homicides are generally assigned substantial resources for criminal investigation and prosecution (ibid.). Addressing the phenomenon of drug-related homicide (DRH) is of importance not only given the severity of a homicide event and its high costs to society, but also because drug-related homicide can provide insights into wider drug-related violence. Homicide is internationally well recorded (Eisner, 2008). As the number of unrecorded homicides is relatively low compared with other violent crimes, homicide is often used as an indicator for violent crime in general. Similarly, DRH has the potential to act as a valuable indicator for wider drug-related violent crime – thus improving our understanding of the broader ramifications of drug markets.

Comparing DRH levels between countries can be a useful tool for identifying trends and new threats or in the assessment of the impact of policies. As part of its activities for developing and improving drug supply indicators, the EMCDDA has been expanding its monitoring to include measures of wider drug-related crime, including DRH (EMCDDA, 2017; Singleton et al., 2018). However, in the category of drug-related crime, data on DRH represent an important data and knowledge gap. Research and monitoring activity internationally has rarely looked beyond the link between homicide and the involvement of organised crime in the supply and distribution of illicit drugs (e.g. Atuesta et al., 2016). While homicide in general is internationally well recorded, less data is readily available for DRH. Development of DRH data collection is therefore necessary to improve our understanding of the nature and

consequences of wider drug-related crime. More specifically, there is a need to identify suitable national and international data sources.

Objectives

Given the above outlined importance of monitoring DRH on the European level, the work reported here aims to be a first step towards a European-level DRH-monitoring system. In that vein, this report's research objectives are to:

1. map existing data sources on homicide in European countries;
2. estimate the extent of drug involvement in national homicides by European country;
3. assess and discuss the obstacles where a drug-homicide relationship cannot be readily established;
4. assess the practical implications for DRH monitoring on the European level.

Structure of this Paper

The structure of this EMCDDA Paper is as follows. First, we will briefly discuss several key conceptual approaches to the relationship between alcohol and drugs on the one hand, and homicide events on the other. We then continue by outlining the methodology of the study and elaborate on the definitions used, the scope of the research, the applied methodology and selected data for this study. The Paper then presents the results of the analysis on three levels, in which (1) each country is first discussed separately (national data sources), followed by (2) an EU-wide analysis (international data sources) and finally (3) an international comparison between regions/ clusters of countries. The analyses comprise an identification of available data sources, an outline of characteristics of these data sources, and a brief overview of what these sources tell us about DRH. The final section draws conclusions and provides a bridge to the follow-up of this report.

Background: the drug-violence relationship

There is an increasing body of literature on the relationship between psychoactive substances and violence, proposing various mechanisms that serve to conceptualise this nexus. A large part of this scholarly work is devoted to the use of alcohol. A smaller, but growing, number of studies focuses on the drug-violence relationship. Both niches have not yet fully grasped the full extent and complexity of the

relationship between psychoactive substances and the use of violence (Brownstein et al., 2012). The body of literature on psychoactive substances in general illustrates that there is no clear understanding of what causal mechanisms are at play, the direction of causation, or whether or not there is a causal relationship at all. Especially in the field of drug-related crime, robust empirical findings supporting a causal relationship between drugs and violent behaviour are scarce (Resignato, 2010).

Still, the existence of a relationship between violence and drugs and markets has been well established in the literature (see for instance Brownstein et al., 2000, for an overview). In 1985, Goldstein developed a conceptual framework to describe and explain this relationship between drugs and violence. To date, this framework remains an influential contribution to the field of study on drug-related crime. This framework consists of three mechanisms for the drug-violence nexus, which are not mutually exclusive: psychopharmacological violence, economic-compulsive violence and systemic violence.

Psychopharmacological violence

The first element of Goldstein's tripartite model is psychopharmacological violence. This model views the relationship between drugs and violence as a direct relationship in which the violent crime involves drug use by those involved. This type of violence thus stems from the properties of the drugs themselves. The psychopharmacological model suggests that 'some individuals, as a result of short- or long-term ingestion of specific substances, may become excitable, irrational, and may exhibit violent behaviour' (Goldstein, 1985, p. 494). Some substances, such as cocaine, amphetamines and benzodiazepines, have indeed been found to increase aggressive and violent behaviour (WHO, 2009, p. 5). Part of the equation is that 'certain drugs ... act on specific areas of the nervous system, including the frontal lobe and the limbic system, where the centres of aggressiveness and impulsiveness are located' (Brochu, 2001). In practice, the psychopharmacological effects of drugs on crime are also likely to be influenced by contextual factors, which can create a state in which intoxication can lead to violence (Parker and Auerhahn, 1998, p. 306; Bennet and Holloway, 2005). In addition to an intoxicated offender, psychopharmacological violence may also involve drug use by the victim, as the use of drugs may also alter a person's behaviour in such a way that it contributes to that person's violent victimisation (Goldstein, 1985) ⁽¹⁾.

Economic-compulsive violence

Economic-compulsive violence is violence associated with the high costs of illicit drug use. The model suggests an indirect relationship between drugs and violence, and asserts that some drug users engage in economically oriented violent crime in order to support costly drug use (Goldstein, 1985, p. 496). The primary motivation to commit a violent crime is thus to steal drugs or means to obtain drugs (e.g. money or goods to 'fence'). This type of economic-compulsive violence especially seems to occur in cases of addiction to more expensive drugs typified by compulsive patterns of use, such as cocaine and heroin (Bennet et al., 2008; Goldstein, 1985). Still, a considerable body of literature indicates that most heroin and opiate users tend to avoid resorting to violence when non-violent alternatives exist to acquire money or drugs. Others, however, do engage in violent acquisitive crimes such as robbery, assault or homicide.

Systemic violence

The third element in Goldstein's framework is systemic violence. The systemic model conceptually differs from the previous two models in the sense that it does not directly attribute the violence to the perpetrator's dependence on drugs for his or her own use. Rather, 'systemic violence refers to the traditionally aggressive patterns of interaction within the system of drug distribution and use' (Goldstein, 1985, p. 497). In other words, violence is a product of the structure of the illicit goods market and hence intrinsic to the very involvement with illicit substances (Inciardi, 1999, p. 65). Examples of systemic violence include turf wars, homicide in the context of rip-deals and retaliation. These last examples are violent responses to normative violations within the drug market, such as failure to pay debts or becoming an informant to the police. This type of violence is, however, not equally apparent in all types of illicit drug markets. For instance, competitive or transactional disputes do generally not spark much violence in the case of marijuana (Reuter, 2009). In contrast, the retailing of crack in the USA in the 1980s and the trafficking of cocaine and heroin in Mexico have triggered far higher levels of violence (ibid.). Furthermore, the relationship between violence and drug markets is not linear. High-volume drug trafficking and undisturbed markets may coincide with lower levels of violence. This situation may change when the balance of power shifts or when competition increases (Lappi-Seppälä and Lehti, 2014).

⁽¹⁾ It is worth mentioning that the literature suggests that the substance that has the strongest association with psychopharmacological violence is not in fact illicit drugs, but alcohol (Goldstein, 1985; Brochu, 2001; Martin et al., 2004; McClelland and Teplin, 2001).

Methodology

This part of the Paper will expand on the study's adopted methodology. First, the term 'drug-related homicide' will be defined. The second section will clarify the study's scope, which is followed by an outline of the adopted research method. Finally, this part will address some limitations and disclaimers that should be kept in mind when interpreting the study's results.

Definitions

On the national level, countries often define homicide by a selection of articles from the national criminal code (Smit et al., 2012). This means not only that national definitions can thus be very country specific, but also that these definitions tend to be phrased in legal terms (e.g. murder and manslaughter) rather than as the overarching social phenomenon of homicide. As this study focuses on the latter, it requires a definition of homicide more suitable for an international context. On this international level, similarly to the national level, different agencies use different definitions of the term 'homicide'. However, these definitions are all related and contain the same elements: an offender, a killed person and the offender's intention to kill that person (Smit et al., 2012, p. 8). The unlawfulness of this killing is implicit in most international definitions, while some definitions mention this explicitly. Drawing from these international definitions, the term 'homicide', as adopted in this study, refers to unlawful death purposely inflicted on a person by another person (UNODC, 2014).

Finally, having reflected on national and international definitions of the phenomenon, we consider a homicide a 'drug-related homicide' when the homicide emerges in the context of psychopharmacological violence, economic-compulsive violence or systemic violence as outlined in the previous part. Thus, a homicide is drug-related when (1) the homicide is the result of drug use by the perpetrator, the victim or both, (2) the homicide is motivated by a need to obtain drugs or money to buy drugs or (3) the homicide is related to the ecology of the drug market. In this context, drugs are defined as narcotics (heroin, morphine, etc.), stimulants (cocaine, amphetamine, etc.), hallucinogens (LSD, tryptamines, etc.) and legally prescribed drugs used in excess (i.e. more than prescribed). The definition of DRH, as adopted in this study, thus excludes violence related to intoxication by alcohol.

Scope of the research

This study has been conducted by the EMCDDA. Therefore, the geographical scope of this project is limited to the EMCDDA reporting countries. These include the 28 EU Member States, as well as Norway and Turkey. Within this geographical scope, the unit of analysis is threefold. The first type of analysis will focus on sources on the national level, in which each of the 30 countries is analysed separately. Second, a review has been conducted on international data sources. This includes an assessment of both sources on regions (clusters of countries) and sources on Europe as a whole. The data that has been collected and analysed on these three levels covers the period between 2000 and 2015.

Method and data

Method, sources and operationalisation

The principal aim of this study is to identify suitable data sources on DRH, and to assess the strengths and weaknesses of these sources in terms of European-level monitoring potential. Against this backdrop, a critical review of relevant existing homicide sources has been conducted, on both the national and international levels. Relevant sources in this regard are open and (semi-)closed homicide datasets that report on key homicide features and circumstances.

These sources are analysed on the basis of data on homicide in general and data on DRH (as defined above) specifically. The latter does present certain challenges. Goldstein's psychopharmacological model suggests causality between intoxication and homicide. Yet this causality is extremely difficult to determine on a case-by-case basis and this type of information cannot be extracted from any of the reviewed open and semi-closed data sources on homicide. Therefore, to measure psychopharmacological violence, this study will look at data on the number of perpetrators and victims who were drug users and the number of perpetrators and victims who were under the influence of drugs during the homicide. Although this data does not directly indicate causality, it does provide insight into the involvement of drug use in homicide, and serves as an indicator for psychopharmacological violence. With regard to economic-compulsive violence, data sources are reviewed for figures on cases of homicide committed to obtain drugs or money to buy drugs. Finally, in the case of systemic violence, data is collected that either defines the violence as systemic or provides insight into the perpetrator-victim relationship. If both parties involved are drug users or drug dealers, these are strong indicators that the homicide was related to the drug market^(?).

(?) Although this is not the case per se.

Data collection strategy

Data collection took place between January 2017 and June 2017. All data was gathered from open and (semi-)closed sources. Examples of open sources are cause-of-death registers, crime and justice databases and reports, and statistical reports that focus on homicide or violent crimes in particular (e.g. the annual reports on murder published by the Norwegian police). Examples of (semi-)closed sources are the homicide-monitoring systems of the Netherlands (the Dutch Homicide Monitor) and Finland (the Finnish Homicide Monitoring System, FHMS).

Three data collection approaches were adopted to identify these and other relevant homicide data sources and literature. The first approach concerns 'snowballing'. Although often used in the context of sampling, the principle of snowballing can also be applied to data collection. Snowballing is a technique for collecting data through the identification of an initial source, which is used to lead to other sources. For this study, several key publications served as an initial source to identify other sources, most notably the *Handbook of European Homicide Research* by Liem and Pridemore (2012).

Second, a systematic process of data collection was adopted to identify relevant online homicide data sources and literature. This involved a two-step approach. The first step served to identify homicide data sources, whereas step two aimed to assess these sources' relevancy to this study (i.e. if the source reported on key homicide features and circumstances, specifically the relationship with drugs). Regarding step one, search engines and other repositories such as Google, Google Scholar, the Leiden University Library and the Wiley Online Library were used to identify data sources and literature on homicide. Keywords used include 'crime statistics', 'police statistics', 'cause-of-death statistics', 'mortality statistics', 'homicide rate', 'homicide count', 'homicide statistics', 'drug-related crime', 'drug violence', 'drug-related homicide', 'drugs AND homicide' and 'homicide database'. These keywords have been used in conjunction with the names of each of the 30 countries, with the names of regions within the EU and with Europe-wide terminology ('EU', 'Europe'). Findings resulting from this approach, such as databases and statistical bulletins, were scanned for relevancy by searching within these sources for keywords such as 'homicide', 'manslaughter', 'murder', 'drug', 'substance', 'illicit', 'influence' and 'intoxication'. Initial searches for data sources were conducted by using (the above) English keywords. When this resulted in few or no findings for a specific country, follow-up searches were conducted in the native language(s) of that specific country. Searches on literature were conducted in English only (with the exception of data collection through snowballing, as mentioned above). These searches for literature resulted in over 100 empirical studies on homicide. Among those studies,

only a handful focused on the drug-violence relationship within a European country, a cluster of European countries, or the EU or Europe as a whole.

After collecting homicide and DRH data based on the previous two approaches, professionals in the field of homicide and national entities responsible for preparing statistical data were contacted to check if all relevant data sources had been identified, and, should this not be the case, to identify additional sources to address gaps. A list of contact organisations is provided in Appendix A.

Limitations and disclaimers

Definitions and data compilation

European countries differ in what they consider to be a homicide event, and thus adopt different definitions. Consequently, some countries might consider acts such as euthanasia or assisted suicide as homicide events. Furthermore, institutions may differ in how they compile homicide data. Homicide statistics can, for instance, focus on the events, the victims and/or the perpetrators (Smit et al., 2012, p. 5). Even when this focus is similar between countries, data can still vary in terms of input statistics (e.g. a homicide is registered as soon as authorities take notice) or output statistics (e.g. a homicide is registered after police investigation) (ibid., p. 20). The homicide count can be expected to be higher in the former case. For these various reasons, countries often do not produce comparable homicide data. This is important to note, as the analyses presented in the next chapter can therefore not at all times be compared one on one.

Dark numbers

As indicated in the introduction, homicide constitutes a crime with relatively few unrecorded cases. Determining the occurrence of a homicide event is relatively easy compared with other interpersonal violence. Still, cases can be missed when the victim's body is not found or when autopsy of a body that has been found does not lead to any reason to suspect that the person was the victim of a homicide (Granath et al., 2011, p. 36). These 'dark figures' affect the amount and accuracy of homicide data. Furthermore, when measuring homicide it can be difficult to disentangle the possible role of drugs, potentially leaving this relationship unregistered (false negative). False negatives or false positives can also occur, as not all countries have a clear definition of being under the influence of drugs. Furthermore, DRH statistics are not always subject to the same level of quality assurance as

TABLE 1

Overview of national data sources

Country	Open sources		Closed/semi-closed sources
	Homicide statistics ⁽¹⁾	Drug-related homicide data	Homicide monitor system
	Homicide specific data ⁽²⁾		Drug-related homicide data
Austria			
Belgium			
Bulgaria			
Croatia			
Cyprus			
Czech Republic		Yes, P	
Denmark			Yes, P
Estonia			
Finland	Yes	Yes, P	Yes, P
France			
Germany		Yes, P	
Greece			
Hungary			
Ireland			
Italy			Yes, P
Latvia			
Lithuania			
Luxembourg			
Malta			
Netherlands	Yes		Yes, P, S
Norway	Yes	Yes, P	
Poland			
Portugal			
Romania			
Slovakia		Yes, P	
Slovenia			
Spain			
Sweden			Yes, P
Turkey			
UK	England & Wales	Yes	Yes, P, E-C, S
	Scotland	Yes	Yes, P, E-C, S
	N. Ireland		

P, psychopharmacological violence

E-C, economic-compulsive violence

S, systemic violence

⁽¹⁾ Homicide statistics from cause of death and criminal justice statistics were available for EU-28 plus Norway and Turkey.

⁽²⁾ Referring to data sources focused specifically on homicide or on violent crimes including homicide. These sources can contain descriptive and/or statistical data on multiple variables (e.g. perpetrator characteristics, victim characteristics, modus operandi). These homicide sources are usually crime or justice statistics (albeit more detailed), but this is not necessarily the case.

other variables (ONS, 2016, p. 15; Czech contact, personal communication, 6 June 2017). These issues should be kept in mind when interpreting the analyses presented below of the homicide rates and the extent of drug involvement in homicides in a country.

Language

As stated above, the search strategy for data sources included a multilingual approach. In contrast, the review of research literature has predominantly focused on English-language studies, with the exception of several studies not in English resulting from snowballing. Therefore, the findings — especially in terms of research literature — might not be exhaustive.

National data sources

Overview

This part of the Paper will provide an overview of national data sources on homicide. In all countries there are data on (1) homicide in the criminal justice statistics and (2) cause of death in public health statistics⁽³⁾. Some countries also publish crime reports specifically on homicide or violent crime. Table 1 reflects the types of sources for homicide statistics per country. The table also maps to what extent these sources contain data on DRH, specifically.

Country analyses

Austria

The main data sources on homicide in Austria are cause-of-death statistics and crime statistics. Cause-of-death statistics are prepared by Statistics Austria. These statistics are coded in accordance with the International Classification of Diseases (ICD-10, see Appendix B for an overview). The statistical office annually publishes a report on health statistics (*Jahrbuch der Gesundheitsstatistik*, see Statistics Austria, n.d.), which contains data on an ICD shortlist. This list includes deaths caused by homicide/assault (*Mord, tätlicher Angriff*). Crime statistics are recorded by the police and are annually published by the Ministry of the Interior (the *Kriminalitätsbericht* and *Sicherheitsbericht*, see Bundesministerium für Inneres, n.d.). These publications contain data on murder (*Mord*), manslaughter (*Totschlag*), killing on request (*Tötung auf Verlangen*), infanticide at birth (*Tötung eines Kindes bei der Geburt*) and negligent homicide (*fahrlässige Tötung*). The department within the Ministry of the Interior responsible for preparing and publishing these statistics has no statistical data on drug-related homicide available (Austrian Ministry of Interior contact, personal communication, 9 March 2017). In addition, the cause-of-death statistics do not address the extent to which drugs played a role in homicide⁽⁴⁾.

In terms of research literature, homicide in Austria has gained little scholarly attention. Studies have been conducted on child homicide (Putkonen et al., 2009a; 2011) and the link between

firearm availability, on the one hand, and suicide and homicide, on the other (Nestor et al., 2007). These studies, however, provide no additional insights into drug-related homicide in Austria.

Belgium

The Belgian Federal Public Service Economy annually publishes cause-of-death statistics, which provide information on the number of deaths caused by assault (*geweldpleging*) (Federal Public Service Economy, n.d.). Crime and justice statistics on homicide are prepared and published by the Federal Police (Federal Police, n.d.) and the Federal Public Service Justice (Federal Public Service Justice, n.d.). Police statistics contain the number of homicides as recorded by the federal and local police. Justice statistics annually provide data on new criminal cases, criminal cases in progress and closed criminal cases. Both contain data on murder (*moord, meurtre*) and manslaughter (*doodslag, assassinat*). However, none of these publicly accessible sources on homicide in Belgium documents DRH.

The body of literature on homicide in Belgium is rather small and mainly focuses on a pre-2000 timeframe (see for instance Rousseaux et al., 2009; Thijssen and De Ruiter, 2010). So far, the topic of DRH in Belgium has not received scholarly attention.

Bulgaria

The Bulgarian National Statistical Institute (Национален статистически институт) publishes cause-of-death statistics, including figures on death by homicide/assault, in the annual Health Services report (see for instance National Statistical Institute Bulgaria, 2016). The main and most reliable source on (conventional) crime in Bulgaria is the police database (Margaritova-Vuchkova, 2014, p. 120). This police data is presented in Bulgaria's *Statistical yearbook*, *Statistical reference book* and *Crimes and persons convicted* report, also published annually by the National Statistical Institute (see National Statistical Institute Bulgaria, n.d.). The data on homicide in these reports is both overlapping and complementary. None of these sources, however, addresses the relationship between homicide and drugs. Such statistics appear to be non-existent for Bulgaria (National Statistical Institute contact, personal communication, 14 February 2017). There also appears to be no research literature that addresses the issue of DRH.

⁽³⁾ Note that it is not always possible to extract homicide data from publicly available, published statistics. For several countries, obtaining these homicide statistics requires a query for information.

⁽⁴⁾ Note that cause-of-death statistics in accordance with the ICD register cases in which a person's death is attributable to this person's use of drugs. Given this, the ICD list contains categories on deaths caused by drug use (e.g. overdose) and homicide by means of drugs (as *modus operandi*). The latter does provide insight into the association between drugs and homicide, but this type of data does not fall within Goldstein's tripartite framework as adopted in this study. Therefore, this type of homicide data will not be further addressed.

Croatia

In Croatia, cause-of-death statistics are published by the Croatian Institute of Public Health (IPH). The annual numbers of deaths caused by homicide/assault are presented in the Croatian Health Statistics Yearbook (see for instance IPH, 2016). Crime and justice statistics are prepared (although not always published) by a number of different institutions, including the Croatian Bureau of Statistics (*Državni Zavod za Statistiku*), the State Prosecutor's Office, courts, the Ministry of Justice and the Ministry of the Interior (see for instance Getoš Kalac and Karlović, 2014, p. 160). The latter annually publishes a *Survey of basic safety indicators*, as well as a periodical *Overview of basic indicators for public safety* (see RH MUP, n.d.). The latter reports present crime statistics over 10 consecutive years, and include separate data on murder, attempted murder, aggravated murder, attempted aggravated murder, manslaughter, infanticide, killing on request and negligent homicide. DRH statistics are not registered by the police and hence not part of these publications (police official, personal communication, 15 February 2017). The only type of offence committed under the influence of drugs that is systematically monitored by the Croatian government is traffic accidents (Croatian Office for Combatting Drugs Abuse, 2011, p. 91).

In terms of research literature, academic contributions on homicide in Croatia are limited. Within this niche, homicide-suicide is especially addressed. For instance, Marcikić et al. (2002) systematically collected data on all combined homicide-suicide events that occurred over a 15-year period (1987-2001) in Osijek County, and Morana et al. (2012) studied the occurrence and characteristics of homicide-suicide events in south-west Croatia from 1986 to 2009. This body of literature on homicide in Croatia does not, however, address the phenomenon of DRH.

Cyprus

Statistics on homicide in Cyprus are published by the Ministry of Health, the Statistical Service (Στατιστική Υπηρεσία, part of the Ministry of Finance) and the police. The first is responsible for cause-of-death statistics. These are based on death certificates, which are coded in accordance with the ICD. Cause-of-death data is prepared by the Health Monitoring Unit and contains statistics on deaths caused by homicide/assault (see for instance Ministry of Health Cyprus, n.d., 2014).

The Statistical Service annually publishes a bilingual report on 'criminal statistics'. This report contains statistics on reported offences, detected and undetected offences, offences under investigation, convictions, the number of victims, age and

gender of the victims, the number of offenders and the type of weapon used. All these statistics are specified by type of offence, including a combined category of premeditated murder, homicide, killing on provocation and infanticide. Until 2012, the police statistics for the annual criminal statistics report were collected via paper questionnaires, which were filled in by the police headquarters. Since 2012, data for the reports is drawn from an electronic file, which is provided by the Cyprus Police. This file contains no data on drug-related homicide (Statistical Service of Cyprus contact, personal communication, 28 February 2017). Since 2012, crime statistics have also been published by the Cyprus Police's newly created Analysis and Statistics Office (see Cyprus Police, n.d.). One of the office's areas of focus is serious crime, on which it published statistics from the year 2010 onwards. These statistics include annual figures on murder and attempted murder, but no data on the extent to which drugs played a role in these crimes.

Research literature does not provide additional insights. Literature on homicide — and crime in general — in Cyprus is scarce, and no known studies address the issue of DRH.

Czech Republic

The Czech Statistical Office (Český statistický úřad or CZSO) annually publishes a statistical yearbook in Czech and English including cause-of-death and crime and justice statistics (see for instance Czech Statistical Office, n.d.a). Cause-of-death statistics are categorised following the ICD chapters, although the data presented in the yearbook omits the ICD chapter on external causes of death. Data on this chapter can be found via the CZSO public database, although this data is — with the exception of a figure for intentional self-harm — limited to the total figure for external causes of mortality (Czech Statistical Office, n.d.b).

Crime and justice statistics, also published in the statistical yearbook, are provided by the Czech Police Presidium and the Ministry of Justice respectively. The yearbook includes data on the number of reported crimes, cleared-up crimes and convicted persons. These statistics are presented by type of offence, including murder. Again, additional data can be found via the CZSO public database. This includes data on murders committed under the influence of alcohol (*pod vlivem alkoholu*). The CZSO has no such figures available on murders committed under the influence of drugs (CZSO employee, personal communication, 12 February 2017). However, data on DRH is collected by the National Monitoring Centre for Drugs and Addiction. Although this data (see Table 2) is not published, it can be obtained upon request. Additional data on the specific substances can be obtained by sending a query

TABLE 2
Drug-related homicide in the Czech Republic

Year	Murder cases total	Cleared		
		Cleared total	Of which: under influence	Of which: under influence of drugs
2005	186	161	45	4
2006	231	196	63	2
2007	196	174	46	2
2008	202	174	70	5
2009	181	157	49	8
2010	173	156	60	4
2011	173	148	53	8
2012	188	175	59	4
2013	182	165	57	3
2014	160	135	51	3
2015	155	135	51	3

Source: Czech National Monitoring Centre for Drugs and Drug Addiction contact, personal communication, 6 June 2017.

to the police. It should be noted that the definition of 'under influence' used is not entirely clear (Czech National Monitoring Centre for Drugs and Drug Addiction contact, personal communication, 6 June 2017).

In terms of research literature, homicide in the Czech Republic specifically has not sparked academic interest. Given this, the research literature does not provide insights into DRH in the Czech Republic. Instead, homicide in the Czech Republic has been studied in a number of international comparative studies (see next part of the Paper).

Denmark

Statistics Denmark (*Danmarks Statistik*) publishes statistics on causes of death, crime and justice. These statistics can be found via the online interactive database (StatBank Denmark), in the annual statistical yearbook and in several other periodic publications by the statistical office (see for instance Statistics Denmark, 2016; n.d.a; n.d.b). Cause-of-death statistics stem from the Central Population Register and the *Statens Serum Institut*. Some figures are published on non-natural causes of death, including poisoning and acts of violence. Data on crime and justice is mainly drawn from the Central Register of Reported Criminal Offences and the Central Criminal Register. Published statistics contain data on reported crime, charges, persons found guilty, conviction and the number of victims. These various statistics are specified by type of offence, including homicide and attempted homicide. Statistics Denmark does not, however, collect or process statistics on DRH (Statistics Denmark contact, personal communication, 20 February 2017).

In addition to these open sources, data on homicide is also collected for the development of two closed/semi-closed databases. First, homicide data is collected in the context of the forensic medical homicide database, which is maintained by the

University of Copenhagen's Department of Forensic Medicine. The database includes all cases in which the manner of death is listed as homicide on the death certificate. Unlike most other cause-of-death data sources, the forensic database contains information on homicide circumstances, such as the victim-perpetrator relationship and the perpetrator's motive (Coleville-Ebeling et al., 2014). Second, data on homicide is collected by the Ministry of Justice for the development of a homicide database based on convictions. The database is currently in the first stage of development, during which data is being collected on all convictions for homicides reported between 2012 and 2016. With regard to drugs, the following variables are registered in the database: whether or not the perpetrator had taken drugs before the crime, whether or not the perpetrator is a drug user and whether or not the perpetrator has previously been sentenced for drug crimes. Other variables include whether or not the perpetrator was gang related and a typology of the homicide (e.g. criminal milieu, robbery killing, etc.) (Ministry of Justice contact, personal communication, 15 March 2017). These variables are the closest type of information to economic-compulsive and systemic drug-related violence provided by the database, but do not contain sufficient specified data to actually label them as such.

In Denmark, the body of literature on homicide addresses various subtopics, including child homicide (see for instance Christiansen et al., 2007; Laursen et al., 2011), intimate partner homicide (see for instance Leth, 2009), and homicide trends and characteristics (see for instance Leth, 2010). Some of these studies touch upon the issue of DRH. Leth (2010) provides an analysis of over 160 cases of homicide death in Southern Denmark between 1983 and 2007. Drawing data from the police and autopsy reports, the study shows that 4 % of the homicide victims were under the influence of drugs at the time of the crime. In 14 % of the homicide victims, one or more drugs were found in the blood sample. From a different viewpoint, Pedersen et al. (2008) studied deaths among drug users in east Denmark, and found that 4 % died in a homicide event.

Estonia

Statistics Estonia (*Eesti Statistika*) annually publishes a statistical yearbook of Estonia in Estonian and English (see for instance Statistics Estonia, 2015). This report contains statistics on causes of death, crime and justice. The cause-of-death statistics are coded in accordance with the ICD, although no specific data on deaths caused by homicide/assault is provided. Nonetheless, such data is indeed collected (see for instance Salla et al., 2012). Crime and justice statistics include the number of recorded cases of murder and manslaughter, as well as the number of persons incarcerated in penal institutions for murder or attempted murder. No special homicide-monitoring system has been developed in Estonia, so these statistics mainly stem from the general crime registration system of the Ministry of Justice (Salla et al., 2012, p. 424). Other sources are the Department of Courts and the Prisons Department, which are both departments of the Ministry of Justice. Statistics Estonia does not publish or keep data on DRH (Statistics Estonia contact, personal communication, 15 February 2017). In addition to providing data on crime for Statistics Estonia, the Ministry of Justice also publishes crime reports (only in Estonian; see Estonian Ministry of Justice, n.d.). The first report on crime in Estonia was published in 2007 (relating to 2006) and they have since been published annually. These reports contain annual crime and justice statistics on homicide (*mõrv, tapmine*), but no figures on DRH.

These data sources show that Estonia has a relatively high number of homicides. From 2006 to 2008, the average rate of violent deaths was the second highest in the EU (Salla et al., 2012). As the homicide rate in Estonia is well above the European average, the issue is of particular interest in Estonia. Still, with regard to domestic scientific literature, only few in-depth analyses of violent crime in Estonia have so far been published (Saar, 2010). The most comprehensive analyses on this topic were conducted by Lehti (1997; 2001). However, as those analyses focus on the 1990s, they fall outside the scope of this study. More recently, Saar (2010) analysed short- and long-term intentional trends in homicide on a more general level, whereas Salla et al. (2012) provided a more in-depth trend analysis. These studies are mainly based on data from the above-mentioned open homicide sources. As these data sources do not contain data on DRH, neither do the academic contributions. Furthermore, Ceccato (2009) analysed a number of expressive and acquisitive offences in Tallinn between 2004 and 2005. This data was obtained from the Central Criminal Police in Tallinn. The study addresses drug-related offences (i.e. possession, cultivation, production, sale, etc.) and homicide, but not violent crimes related to drugs and drug markets.

Finland

Statistics Finland (*Tilastokeskus*) publishes cause-of-death statistics and crime statistics via an interactive web database (Statistics Finland, n.d.). Data on causes of death include a category of homicide/assault, but no specific information on DRH. Crime statistics contain annual figures on homicide (murder and manslaughter). This includes data on the number of suspects under the influence of alcohol and/or other intoxicants.

In addition to these open sources, homicide data is collected in the context of the Finnish Homicide Monitoring System (FHMS). The FHMS, launched in June 2002, is jointly managed by the Finnish Police College, the Police Department of the Ministry of the Interior and the University of Helsinki (the Institute of Criminology and Legal Policy, formerly the National Research Institute of Legal Policy). The FHMS contains information on characteristics of the crime, the victim and the offender. It also contains post-crime information, such as data related to the investigation of the homicide. In total, the number of variables for each case is about 90 (Granath et al., 2011, pp. 109-110). With regard to DRH, the FHMS contains data on offenders and victims being under the influence of drugs at the time of the homicide, and on offenders and victims being drug users. This data is available for both males and females. Similar data is provided on alcohol-related homicides. This data is based on information produced during preliminary police investigations. Information is collected directly by the leading investigator of each homicide, who fills in a compulsory electronic form ⁽⁵⁾. To verify that all homicide cases are included and that all information is acquired, the national crime reporting system of the police is used as a control measure.

Kivivuori et al. (2007) conducted a study on the incidence and patterns of homicide in Finland based on data from the FHMS. The authors note that drugs and other non-alcoholic intoxicants play only a minor part in Finnish homicides compared with alcohol:

In 2002-2006, 4 per cent of male homicide offenders and none of female offenders were under the influence of hard drugs, while 18 per cent of male offenders and 21 per cent of female offenders were under the combined influence of alcohol and psychosomatic drugs. Corresponding percentages for adult male victims were 4 per cent and 10 per cent, and for adult female victims 3 per cent and 10 per cent respectively (Kivivuori et al., 2007, p. 9).

⁽⁵⁾ Police reports contain both quantitative data and an open-ended narrative appendix. The latter is an official description of the homicide circumstances, written by the leading investigator.

Furthermore, the proportions of offenders and victims identified as drug users are 27 % and 14 % respectively (ibid., p. 12). These figures might seem considerable, but are far lower than the percentages of parties in homicide identified as being under the influence of alcohol or being an alcoholic⁽⁶⁾. The authors therefore state that Finnish homicides are closely related to alcohol consumption, alcohol intoxication and drinking situations. Data from the FHMS has also been published as part of a study on homicide in Finland, the Netherlands and Sweden (see next part of this Paper). This study's findings on Finland (2003-2006) show that the percentages of male and female offenders who were under the influence of drugs at the time of the homicide are 22 % and 19 % respectively. For victims, the percentages are 16 % and 13 % respectively. Furthermore, the study shows that 30 % of the male offenders and 12 % of the female offenders were drug users at the time of the homicide. Regarding male and female victims being drug users, the findings are 19 % and 8 % respectively (Granath et al., 2011, p. 67).

A number of other studies on homicide in Finland particularly zeroed in on the topics of filicide and differences between male and female homicide or filicide offenders (Häkkinen-Nyholm et al., 2009; Putkonen et al., 2009a; 2009b; 2011). For their study on gender differences in homicide, Häkkinen-Nyholm et al. (2009) used data from NAMA archives⁽⁷⁾ and criminal reports⁽⁸⁾ from the Finnish Police computerised Criminal Index File to analyse and compare male and female homicide offenders. Based on these sources, approximately 9 % ($n = 7$) of the male offenders and 3 % ($n = 2$) of the female offenders between 1995 and 2004 were under the influence of drugs during the homicide. Given these figures, the authors conclude that 'there was no difference in the proportion of offenders being under the influence of alcohol or drugs at the time of the killing' (Häkkinen-Nyholm et al., 2009, p. 77). NAMA archives were also analysed by Häkkinen. Her study focuses on homicide by strangulation and shows that, between 1996 and 2002, 14 % of the offenders were diagnosed as drug dependent, while 10 % of the offenders were under the influence of drugs during the homicide (Häkkinen, 2007, p. 79).

France

In France, the *Institut National de la Santé et de la Recherche Médicale* makes an annual count of causes of death, with 'intentional homicide' as a distinct category (Mucchielli, 2012, p. 302). Statistics on homicide can also be retrieved from crime statistics. The body responsible for these statistics

in France has been subject to change. From 1998 to 2009, crime statistics were annually published by the Ministry of the Interior. From 2009 to 2015, this responsibility was taken over by the *Observatoire National de la Délinquance et des Réponses Pénales*. Since October 2015, crime statistics are published by InterStats (InterStats, 2017). Data is provided by the Statistical Department for Internal Security (SSMSI) of the Ministry of the Interior. This data contains an annual homicide count based on French Police and Gendarmerie records (see below), but does not include data on DRH (anonymous SSMSI employee, personal communication, 3 March 2017). Finally, data on homicide can be retrieved from court statistics — the oldest source of statistical data on the criminal population (Mucchielli, 2012, p. 304). France is an example of the possible discrepancy between crime and justice statistics and health statistics on homicide, as the former generally report twice as many homicides as the health authorities (Lappi-Seppälä and Lehti, 2014). None of these data sources, however, addresses the issue of DRH.

Official crime statistics draw data from the état 4001 (form 4001). This is a closed source that contains the number of each type of crime (thus including homicide) and cleared cases as reported by the French Police and Gendarmerie. The data source is centralised and compiled on the national level (Roche, 2008). The system does not, however, provide as much detailed information as other closed sources, such as the Operations Cell for Matching and Analysing Associated Offences (CORAIL) database. This database is maintained by the Paris Regional Criminal Investigation Department (DRPJ). In comparison with form 4001, it contains much richer data, in terms of both victims and the implicated persons. This source has been used by Scherr and Langlade (2014) to analyse the characteristics of homicides committed in Paris and the inner suburbs between 2007 and 2013. With regard to DRH, the authors identify several shortcomings of the CORAIL source:

[T]here is no information about their profession or level of intoxication (drug or alcohol) at the time the homicide was committed. Finally, one of the most important variables for analysing homicides — the relationship between the victim and suspect — is also missing in many instances (the level of completeness is 30 %) (ibid., p. 28).

The study's results do, however, shed some light on the latter. Of the 485 homicide cases in the sample, 17 cases (4 %) resulted from conflicts between drug traffickers (ibid., p. 32), and can be considered cases of systemic violence. Other cases might also be cases of systemic violence (e.g. 'score settling between criminals'), yet this cannot be extracted from the data presented.

⁽⁶⁾ Which are 53 % and 57 % respectively (Kivivuori et al., 2007, p. 12).

⁽⁷⁾ Approximately 70-85 % of all homicide offenders are subjected to a forensic psychiatric evaluation as part of the trial procedure. These evaluations are conducted by the Finnish National Authority for Medicolegal Affairs (NAMA) (Häkkinen-Nyholm et al., 2009).

⁽⁸⁾ Referring to the same type of police data as collected for the FHMS.

Other studies on homicide in France mainly focus on the 1980s and 1990s (see for instance Houel et al., 2003; 2008; Mucchielli, 2004a; 2004b). More recent studies compare the various sources (discussed above) on homicide between 1970 and 2008 (Mucchielli, 2008) and analyse the epidemiology of homicide in France between 1971 and 2010 (Mucchielli, 2012). Overall, research on homicide in France is scarce (Mucchielli, 2012) and the existing literature does not — with the exception of the study by Scherr and Langlade (2014) discussed above — address the issue of DRH ⁽⁹⁾.

Germany

German cause-of-death statistics are published by the *Statistisches Bundesamt* (Destatis; see Destatis, n.d.). These statistics are categorised following the ICD. However, Destatis does not publish statistics on all categories of the ICD ⁽¹⁰⁾. In its publications, the ICD chapter on external causes of morbidity and mortality (which contains homicide deaths) is omitted. Data on homicide can be derived directly from crime statistics. These are annually published by the Federal Criminal Police Office (*Bundeskriminalamt*; see Federal Criminal Police Office, n.d.) in both German and English, and contain figures on

murder and manslaughter. Statistics on the number of cases committed by hard drug users (*Konsument harter Drogen*) and suspects under the influence of alcohol (*Tatverdächtige unter Alkoholeinfluss*) are available and disaggregated by offence, but only in the German crime statistics reports (*Bundeskriminalamt* contact, personal communication, 22 February 2017). These figures show that the percentages of murder and manslaughter suspects remained fairly constant between 2000 and 2015 (see Table 3).

The body of research literature on homicide in Germany is dominated by criminalistics and psychological studies (Birkel and Dern, 2012). Studies have focused on different subtypes of homicide — such as filicide (see for instance Höynck and Görgen, 2006; Höynck, 2010), serial killing (see for instance Harbort and Mokros, 2001), intimate partner homicide by women in abusive relationships (see for instance Braun, 2016), and the killing of prisoners (see for instance Lamott, 2009) — and tend to be based on specific sample populations or regions. In addition, there are a few studies that analyse the general development and epidemiology of homicide in Germany. The most recent study of this kind was conducted by Birkel and Dern (2012), who addressed homicide trends, incident characteristics, perpetrator characteristics, victim

TABLE 3
Drug-related homicide in Germany

Year	Murder ⁽¹⁾ suspect is hard drugs user		Manslaughter ⁽²⁾ suspect is hard drugs user	
	Persons	%	Persons	%
2000	52	6	119	7
2001	64	8	136	8
2002	73	9	148	9
2003	58	7	154	9
2004	73	10	146	9
2005	75	10	150	10
2006	57	7	134	9
2007	77	11	131	8
2008	64	10	132	9
2009	53	6	131	7
2010	48	6	124	7
2011	80	9	114	6
2012	38	6	126	9
2013	49	8	149	11
2014	59	9	146	10
2015	59	10	137	10

Source: Federal Criminal Police Office, 2001-2016.

⁽¹⁾ *Mord*, § 211 StGB.

⁽²⁾ *Totschlag and Tötung auf Verlangen*, § 212, 213 and 216 StGB.

⁽⁹⁾ Note that Mucchielli (2012, p. 309) does state that the use of drugs was marginal among the homicide offenders and victims studied. This data, however, refers to earlier studies by Mucchielli (2004a; 2004b), based on pre-2000 data (a judicial sample of 105 homicides perpetrated in the Paris area in the 1980s and 1990s). Furthermore, Mucchielli (2012, p. 309) states that, of this sample, around 55 % of the homicide perpetrators and 40 % of the homicide victims were drunk during the homicide.

⁽¹⁰⁾ Destatis publishes statistics on categories I to XIX. Category XX contains external causes of morbidity and mortality.

characteristics, possible explanations and policies. Still other studies analyse homicide from a legal perspective (see for instance Kinzig, 2015) or homicide as compared with other causes of unnatural death (see for instance Lukaschek et al., 2012). Although there is a considerable body of literature on homicide in Germany, the phenomenon of DRH has not received scholarly attention.

Greece

The Hellenic Statistical Authority (Ελληνική Στατιστική Αρχή) publishes both cause-of-death statistics and crime and justice statistics. Statistics on the causes of death are coded in accordance with the ICD, and published annual figures include a category on homicide/assault (Hellenic Statistical Authority, n.d.a). Crime and justice statistics are prepared by the authority's Justice and Public Order Statistics Section, and include data on offences committed, persons sentenced, prison populations and prisoners awaiting trial (Hellenic Statistical Authority, n.d.b; n.d.c; n.d.d; n.d.e). These statistics do not provide data on specific types of crime. More specific crime statistics can be found in the statistical police reports (Greek Ministry of the Interior, n.d.). Since 2014, the Hellenic Police has annually published a statistical yearbook (only in Greek; earlier yearbooks can be obtained by request). These reports contain data on specific offences — including manslaughter (Ανθρωποκτονία από αμέλεια) and intentional homicide (Ανθρωποκτονία με πρόθεση) — by location (region), month, perpetrator's origin (Greek or foreign) and perpetrator's age. None of these Greek data sources contains data on DRH.

Research literature on homicide in Greece has to a large extent focused on homicide and law in Ancient Greece, the origin and evolution of the institution of vendetta, and traditional and moral values that might encourage interpersonal violence. Several studies on patterns of homicide in Greece were conducted in the 1960s and 1990s (Christodoulou, 1966; Safiliou-Rothenschild, 1969; Chimbos, 1993). Little has been published on homicide patterns in Greece since then (Fragkouli et al., 2016), with studies on homicide patterns in the region of Epirus as a notable exception (Vougiouklakis and Tsiligianni, 2006; Fragkouli et al., 2016). Vougiouklakis and Tsiligianni (2006, p. 318) analysed autopsy reports and prosecution authorities' files on homicide cases between 1998 and 2005, and found no evidence of use or psychotropic drugs among homicide offenders. Fragkouli et al. (2016) expanded this study's measurements to 2013. The authors' toxicological analysis does not mention any homicide victim being tested positive for drugs ⁽¹¹⁾.

Hungary

The Hungarian Central Statistical Office (*Központi Statisztikai Hivatal*, HCSO) publishes both cause-of-death statistics and crime and justice statistics. Data on these topics can be retrieved from the annual Hungarian statistical yearbook (see for instance Hungarian Central Statistical Office, 2015) and from the digital dissemination database (HCSO, n.d.). Cause-of-death statistics are classified in accordance with the ICD. Publications by the HCSO, however, omit the ICD chapter on external causes of death. The statistics on crime and justice are provided by the Ministry of the Interior and the Prosecutor General's Office. These include data on the number of registered crimes and the number of perpetrators, which are both specified by type of offence (including homicide and attempted homicide). These publications by the HCSO do not contain data on DRH, as the office is not engaged in collecting such data (HCSO contact, personal communication, 1 March 2017). Furthermore, both the Ministry of the Interior and the Prosecutor General's Office also publish crime and justice statistics. Statistics published by the Ministry of the Interior (only in Hungarian; see Hungarian Ministry of the Interior, n.d.) contain data on the number of homicides (*emberölés*) in each region as well as nationwide. The Prosecutor General's Office annually publishes homicide statistics regarding registered crimes and the number of convicted persons (see for instance Hungarian Prosecutor General's Office, 2016). Like the data provided by the HCSO, these statistics do not contain data on DRH.

In terms of literature, homicide in Hungary has gained little scholarly attention. Important contributions have been made on homicide against infants, children and adolescents in Budapest (Törő et al., 2011), domestic homicide (Morvai, 1998) and offender characteristics (Farsang and Kocsor, 2016), yet these studies do not contain data on DRH.

Ireland

In Ireland, cause-of-death statistics are published by the Department of Health (*An Roinn Sláinte*) and the Central Statistics Office (*An Phríomh-Oifig Staidrimh*, CSO). Data on the number of deaths caused by homicide/assault can be extracted from the CSO's StatBank (Central Statistics Office Ireland, n.d.a). The Irish National Police Service (*An Garda Síochána*) publishes annual reports that contain crime statistics (National Police Service Ireland, n.d.). These reports present figures on the total number of crimes of different 'crime offence groups', including 'homicide offences'.

⁽¹¹⁾ The authors sampled 38 biological specimens for toxicological analysis.

In Ireland, this category includes murder, manslaughter, infanticide and dangerous driving leading to death. Annual statistics on each of the separate crimes are published by the CSO (Central Statistics Office Ireland, n.d.b). None of these open sources, however, contains any data on DRH. With regard to the CSO, this is because the statistical office does not collect data on DRHs (CSO contact, personal communication, 16 February 2017). This is not the case for the Irish police, which registers the condition and circumstances of both the perpetrator and the victim of a homicide event. This information is recorded in the Garda crime files.

With regard to research literature, crime in Ireland is an underdeveloped field of study — at times described as ‘Ireland’s absentee discipline’ (O’Donnell, 2005, p. 99). There have nonetheless been a number of important contributions on the topic of homicide. Rottman (1980) examined the above-mentioned Garda crime files to analyse the level and patterns of crime (including homicide) in Ireland between 1951 and 1975. These files have also been used for two studies on homicide in Ireland between 1972 and 1996 (Dooley, 1995; 2001). Both reports by Dooley present combined figures for the number of homicide suspects that were intoxicated during the homicide event. The first report shows that, between 1972 and 1991, 47 % of the perpetrators and 42 % of the victims were intoxicated (Dooley, 1995, p. 19). Between 1992 and 1996, these figures are 39 % and 42 % respectively. In these studies, ‘intoxication’ refers to both alcohol and drugs. No similar analyses or other studies that address the issue of DRH have been published since.

Italy

The Italian National Institute of Statistics (*Istituto Nazionale di Statistica*, ISTAT) publishes data on causes of death and crime. Cause-of-death statistics include a category on murder/assault, and can be specified by sex and age group (ISTAT, n.d.). Crime statistics contain data on the number of reports of persons suspected by the police forces to have committed crimes and the number of crimes reported to the court by the police (ibid.). These crime statistics are specified by type of crime, including massacre, voluntary murder, attempted murder, infanticide, unintentional homicide and manslaughter. The number of murders is broken down into several subcategories, among which is murder for the purpose of theft or robbery. The ISTAT databases, however, contain no specific data on DRH (ISTAT contact, personal communication, 20 February 2017). Although the police statistics published by ISTAT thus do not cover DRH, this is not to say that the police does not register such data. Homicide characteristics are registered by the police for investigative purposes only. This concerns descriptive information, which is exclusively for the use of the police forces and is not processed into statistics

(contact from the Ministry of Interior (Central Bureau of Statistics), personal communication, 7 March 2017).

A third source on homicide in Italy is the homicide database of the Economic and Social Research Centre (*Ricerca Economica e Sociale*, EURES). This database contains information on intentional homicide (*omicidi dolosi*), such as the perpetrator’s motive and the relationship between victim and perpetrator, which has been collected since 1990. Information is collected from various sources, including national and local newspapers, prosecution and court statistics, the Data Bank (DEA) of the National Agency Press (ANSA) and archives on criminal events of the Ministry of the Interior’s Department of Criminal Police Service and Analysis. Periodically, EURES publishes a EURES-ANSA report on homicide in Italy, which contains homicide data on the preceding years. This database includes information on homicides committed under the influence of drugs (EURES contact, personal communication, 28 June 2017).

The academic literature on homicide in Italy provides some additional insights into drug use by homicide perpetrators and victims. For instance, Roma et al. (2012) studied the epidemiology of homicide-suicide in Italy. The authors confirmed alcohol or drug problems in 10 % of the homicide-suicide offenders and fewer than 1 % of the victims between 1985 and 2008. Preti and Macciò (2012) found that in 2007 and 2008 approximately 3 % of the homicide offenders suffered from active substance use (alcohol or other). Furthermore, Verzeletti et al. (2014) studied the characteristics of homicide victims in Brescia County. On 80 victims, toxicological screening was conducted. Toxicological findings showed that 60 % of the victims tested positively for substances, of whom 40 % for drugs (either alone or combined with alcohol). Several other analyses of homicide in Italy exist (see for instance Mastronardi, 2012; Sisti et al., 2012), yet these do not address the issue of DRH.

Latvia

Latvia’s Central Statistical Bureau (*Centrālā Statistikas Pārvalde*) is the main source for statistics on homicide in Latvia. The bureau’s interactive database contains (among others) data on causes of death and on crime and justice (Central Statistical Bureau Latvia, n.d.a; n.d.b). Since 2010, cause-of-death data has been compiled by the Centre for Disease Control and Prevention. The data allows a breakdown of external causes of mortality by specific causes, including homicide/assault. Similarly, both statistics on recorded crimes and convicted persons can be specified by type of crime, which includes intentional homicide. Specific data on DRH is not compiled by the Statistical Bureau. There also appears to be no research literature addressing the drug-homicide nexus.

Lithuania

The Official Statistics Portal (*Oficialiosios Statistikos Portalas*, OSP), part of the Ministry of the Interior, is the main source for statistics on Lithuania. The OSP publishes both cause-of-death statistics and crime statistics. Cause-of-death data can be specified as 'death by assault, homicide', but provides no information on DRH (Official Statistics Portal Lithuania, n.d.a). Crime statistics are limited to the total number of crimes (Official Statistics Portal Lithuania, n.d.b). However, a query can be made for more specific information on homicide. Crime statistics in Lithuania are based on data from the Register of Criminal Offences. This register does not contain DRH information and consequently neither do the crime statistics (Official Statistical Office/Ministry of Interior contact, personal communication, 10 February 2017). The OSP database does contain the total annual count of criminal offences committed by intoxicated persons.

The data prepared by the OSP was used by Andresen (2012) to analyse the epidemiology of homicide in Lithuania. This study is currently the most comprehensive analysis on homicide in Lithuania, discussing incident characteristics, victim characteristics and perpetrator characteristics, as well as explanations. Other contributions to this field of study include Andresen's (2010) study on the impact of Lithuania's accession to the EU on violent crime in Lithuania, and Lunevicius et al.'s (2010) study on the epidemiology of injury in Lithuania. This body of literature, however, does not address the phenomenon of DRH. In contrast, alcohol in relation to homicide has received scholarly attention. For instance, Benošis and Rybalko (2007) zero in on alcohol consumption of homicide victims.

Luxembourg

Statistical information on Luxembourg is published on the Statistics Portal. Operating this portal is the responsibility of the National Institute of Statistics and Economic Studies (STATEC/NSI). This portal contains statistics on health and crime and justice. Health statistics are, in principle, centralised by the departments of the Ministry of Health. They include data on causes of death, which are coded in accordance with the ICD. The published cause-of-death statistics contain data on an ICD shortlist of categories, including the category of deaths caused by homicide/assault (STATEC, n.d.a). The crime and justice statistics on the portal stem from the Ministry of Justice, the Superior Court of Justice, penal institutions and the Ministry of Foreign Affairs (STATEC, n.d.b). This data is limited to categories of offences (e.g. acts of violence towards people). More specific data can be found in the annual report on crime and police activity published by the Grand-Ducal Police (see for instance Grand-Ducal Police, n.d.). These

reports (only in French) contain annual data on homicide (*homicides volontaires*), which includes the legal definitions of murder (*meurtre*) and manslaughter (*assassinat*). None of these sources, however, contains data on DRH in Luxembourg. There also appears to be no research literature addressing the drug-homicide nexus.

Malta

The Maltese Ministry of Health annually maintains a Mortality Register. Data from the register is annually published in mortality reports (Ministry of Health Malta, n.d.). This includes data on deaths caused by homicide/assault. The principal source of information for these statistics is death certificates. For most other topics, the National Statistics Office (NSO) of Malta is the main source for statistics on Malta. The NSO's unit C1 (Living Conditions and Culture Statistics) has published crime statistics in collaboration with the police authorities, the Ministry of Justice, the law courts and other relevant departments. These crime statistics are drawn from the Police Incident Reporting System. The most recent publication containing homicide data is the *Demographic review 2010* (National Statistics Office Malta, 2011). The review contains the annual number of homicides (the combined figure for murder, manslaughter, euthanasia and infanticide) between 2000 and 2010. More recent statistics can be acquired from the police on request. The published crime statistics do not present information on the relationship between homicide cases and drugs.

In terms of research literature, the most extensive analysis to date of crime patterns and trends in Malta has been conducted by Formosa (2007). The small body of literature on crime in Malta does not, however, provide any insights into the extent of drug involvement in homicides in Malta.

Netherlands

Crime statistics are published by Statistics Netherlands (*Centraal Bureau voor de Statistiek*, CBS). This includes a category on crimes against life (*levensmisdrijven*; see CBS, 2017). This constitutes a combined category for the legal definitions of murder, manslaughter, killing on request and illegal abortion (CBS, n.d.a). Statistics Netherlands also publishes figures on homicide (murder and manslaughter) as part of its 'Statistics on non-natural causes of death' database. This includes data on the modus operandi, the location, the number of victims and the victims' ages (CBS, n.d.b). A third source on homicide is the annual *Elsevier* homicide report. *Elsevier*, a weekly Dutch magazine, annually publishes a report on all homicides that have taken place in the Netherlands based on newspaper articles by the Netherlands National

News Agency (*Algemeen Nederlands Persbureau*, ANP) as well as police files. Neither the cause-of-death statistics nor the *Elsevier* reports, however, address systematically the homicide-drug relationship.

The most detailed source on homicide in the Netherlands is the Dutch Homicide Monitor. The Dutch Homicide Monitor is an ongoing monitoring system that draws data from seven other sources: (1) homicide-related newspaper articles by the ANP, (2) the above-mentioned *Elsevier* annual homicide report, (3) files from the regional police units, (4) files from the National Bureau of Investigation⁽¹²⁾, (5) the Violent Crime Linkage Analysis System (VICLAS) from the National Bureau of Investigation⁽¹³⁾, (6) files from the Public Prosecution Service of the Ministry of Justice and (7) files from the Criminal Justice Knowledge Centre. These seven sources partly overlap, but are also complementary to one another. The Dutch Homicide Monitor contains information on victim and perpetrator characteristics, the offender-victim relationship, the motive, the modus operandi and the location. This includes information on the relationship between the crime and drugs.

The monitor is a closed/semi-closed source, maintained by Leiden University and the Netherlands Institute for the Study of Crime. Still, a number of published studies have analysed homicide in the Netherlands based on this monitoring system (Smit et al., 2001; Leistra and Nieuwbeerta, 2003; Nieuwbeerta and Leistra, 2004; Smit and Nieuwbeerta, 2007; Nieuwbeerta and Leistra, 2007; Ganpat and Liem, 2012). Several of these studies addressed the drug-homicide link. Between 1998 and 2004, an average of 15 % of all homicide perpetrators were found to be addicted to drugs and 7 % of the perpetrators were under the influence of drugs during the homicide. Among the victims, 5 % were under the influence of drugs during the crime. Furthermore, of the homicides in 1998, 2002, 2003 and 2004 that were connected to the criminal milieu, 9 %, 8 %, 9 % and 16 % respectively were related to drug deals (Smit and Nieuwbeerta, 2007). This generally involved rip-deals to gain possession over substances (ibid.)⁽¹⁴⁾. In 2003, in 6 % of the homicide cases a customer killed his or her drug dealer. The reverse occurred in 2 % of the cases. In total, one third of the homicides (1992-2001) within the criminal circuit can be considered systemic violence related to the drug market (Leistra and Nieuwbeerta, 2003, p. 122).

Other research on contemporary homicide in the Netherlands tends to focus on several main areas. A first area of research is the epidemiology of homicide, victims and perpetrators

(see for instance Bijleveld and Smit, 2006; Nieuwbeerta and Leistra, 2007; Van Os et al., 2010; Ganpat and Liem, 2012). Other recent studies have focused on homicide subtypes, based on either the victim-offender relationship, such as intimate partner homicide (see for instance Alisic et al., 2015), child homicide (see for instance Liem and Koenraadt, 2008a), multiple family homicide (see for instance Liem and Koenraadt, 2008b) and homicide-suicide (see for instance Liem et al., 2009; Liem, 2010), or the offender's motive, such as criminal liquidations (see for instance Van de Port, 2001) and honour-related homicides (see for instance Nauta and Werdmölder, 2002). Finally, several studies have relied on national data from the Dutch Homicide Monitor to analyse the sentencing of homicide offenders (see for instance Johnson et al., 2010; Vries et al., 2010). Several of these studies also touch upon the drug-homicide nexus. Insights into DRH in the Netherlands after 2000 are, however, limited to the previously discussed studies based on the Dutch Homicide Monitor. Somewhat less up-to-date insights are provided by Bijleveld and Smit (2006), who made a classification of different types of homicides that occurred in 1998. One distinct category is 'criminal: drug-related', exemplified by the killing of a drugs dealer by a customer following a dispute. Bijleveld and Smit show that 8 % of the homicide victims in 1998 were related to the criminal drug circuit (2006, p. 201).

Norway

Data on homicide in Norway is published by Statistics Norway (*Statistik Sentrabyrå*, SSB), the Norwegian Institute of Public Health (*Folkehelseinstituttet*, NIPH) and the police. Until recently, Statistics Norway was responsible for both types of statistics. However, in 2013, this role of maintaining cause-of-death statistics was taken over by the NIPH, which has been responsible for the Norwegian Cause of Death Registry since January 2014. Data from the registry contains information on deaths caused by assault and homicide (NIPH, n.d.). This data is based on death certificates, which are run through a semi-automatic coding program that selects the underlying cause of death according to the ICD (NIPH, 2016). Crime and justice statistics are published by the Division for Social Welfare Statistics of Statistics Norway (Statistics Norway, n.d.). Crime statistics are drawn from the Norwegian Police Information and Communication Technology Services, and contain data on the annual reported cases of murder and manslaughter. Justice statistics are extracted from the Norwegian Central Criminal Record and Police Information System, and provide data on sanctions and imprisonment by type of crime. Although statistics from both the SSB and NIPH contain data on homicide in Norway, they provide no insights in the specific area of DRH (NIPH contact, personal communication, 15 February 2017; Statistics Norway contact, personal communication, 17 February 2017).

⁽¹²⁾ However, in 2005, the National Bureau of Investigation stopped registering homicide incidents on the national level.

⁽¹³⁾ VICLAS contains information about homicide cases in which the victim(s) had been sexually assaulted or raped.

⁽¹⁴⁾ As there is no information on whether or not the rip-deals were for personal drug use, the mere aim of obtain possession of drugs (in the criminal circuit) is insufficient to label this type of events as economic-compulsive violence.

In addition to crime statistics published by the SSB, the National Criminal Investigation Service (*Kripos*) of the Norwegian police publishes an annual homicide overview (*drapoversikt*, only in Norwegian). These overviews contain information on the number of homicides, the modus operandi, the location, the motive, the offender-victim relationship and whether or not the perpetrator was intoxicated during the homicide. With regard to this last, statistics are presented on alcohol (*alkohol*), drugs (*narkotika*), medication (*medikamenter*) and a combination of intoxicating substances (*blandingsrus*). Data on the last three is shown in Table 4.

Homicide research in Norway has focused on, among other phenomena, homicide patterns (see for instance Kristoffersen et al., 2014; Lunde, 2006), patterns in neonaticide (see for instance Ottesen, 2012), intimate partner homicide (see for instance Vatnar, 2015; Vatnar et al., 2017) and the incidence of amnesia among homicide defendants (Grøndahl et al., 2009). Lunde (2006) studied homicides between 2000 and 2004, and concluded that homicides resulting from fights over drugs and gang-fights were more frequent in 2000-2004 than in prior periods. In terms of substance use, Lunde found that alcohol is the most frequent stimulus involved in homicides. In the cases in which the perpetrator was under the influence of drugs during the crime, most often the perpetrator used more than one type of drug. Insights into drug use by homicide victims can be derived from Kristoffersen et al. (2014), who studied homicide patterns in Norway between 1895 and 2009. Based on an examination of 196 homicide victim cases, the authors analysed homicide rates, the perpetrator-victim relationship, the modus operandi, the location and the victims' ages, genders, nationalities and drug use. Regarding the last, in 45 of the victims (23 men and 22 women), drugs

were detected in the blood, including benzodiazepines and tetrahydrocannabinol (2014, pp. 2-3). Eighteen victims tested positive for both drugs and ethanol (2014, p. 3).

Poland

Poland's Central Statistics Office (*Główny Urząd Statystyczny*, GUS) annually publishes a statistical report in Polish and English. This report contains cause-of-death statistics coded in accordance with the ICD. Figures on deaths caused by homicide, however, are not enclosed in the report; the category on 'injuries and poisonings by external cause' specifies only transport accidents and suicides. The yearbook also contains statistics on ascertained crime, detection rates and number of persons sentenced, all of which are specified by type of crime, including homicide (GUS, n.d.). These statistics have been prepared on the basis of police statistics, supplemented with information on investigations conducted by the public prosecutor's offices and family or juvenile proceedings in courts (GUS, 2013). Specific information on DRH is not collected by the Statistics Office (GUS contact, personal communication, 17 February 2017).

Recent studies on homicide in Poland include an analysis of autopsies carried out in the Forensic Medicine Department of the Medical University of Silesia between 1991 and 2002 (Rygor et al., 2005), an analysis of procedures regarding forensic examination used in homicide trials between 2000 and 2010 (Juszka and Juszka, 2015), and a more in-depth analysis of two homicide-suicide cases by Bloch-Boguslawska et al., 2006. These studies do not provide figures on the extent of drug involvement in homicides in Poland.

TABLE 4

Drug-related homicide in Norway, number of intoxicated persons

Year	Drugs		Medication		Combination of substances	
	Offender	Victim	Offender	Victim	Offender	Victim
2000	1	2	1	0	3	1
2001	8	3	0	2	6	1
2002	5	5	3	2	5	1
2003	1	4	3	3	5	2
2004	3	2	3	0	8	1
2005	1	2	2	0	5	3
2006	3	2	6	2	5	2
2007	5	1	0	2	4	1
2008	2	1	0	1	7	2
2009	5	4	1	0	3	3
2010	5	3	0	1	1	4
2011	8	5	4	1	6	3
2012	7	6	1	1	0	1
2013	8	3	0	2	6	3
2014	3	1	2	4	4	4
2015	2	2	0	0	0	1

Sources: Kripos, 2010; 2015.

Portugal

Statistics Portugal (*Instituto Nacional de Estatística*, INE) is the Portuguese entity responsible for ensuring the production and dissemination of official statistical information. In this context, the institute collects and publishes data on causes of death, crime and justice (Statistics Portugal, 2015 n.d.). Cause-of-death statistics are coded in accordance with the ICD, and contain data on deaths by homicide and injuries purposely inflicted by others. Crime and justice statistics published by INE are limited to categories of crime (e.g. crimes against life) and do not provide data on specific types of crime. More detailed statistics are published by the Ministry of Justice's Directorate-General for Justice Policy (DGJP). This includes separately available statistics on the different types of crimes against life: manslaughter, traffic accidents, other negligent manslaughter, abortion and other crimes against life (DGJP, n.d.). The directorate-general draws its information from the Criminal Police, Public Security Police, National Republican Guard, Customs Tax Authority, Criminal Police, Economic and Food Safety Authority, Immigration and Borders Service, Customs Tax Authority, District Tax Directions, Anti-fraud Service of the Customs Directorate-General, Public Security Police, National Direction and National Police Unit of the Public Security Police, National Republican Guard, Territorial Commands, National Road Traffic Unit, Intervention Unit, and Coastal Control Unit. The data collected and processed by the directorate-general is not disaggregated enough to extract information on DRH (Ministry of Justice contact, personal communication, 17 February 2017). Consequently, INE does not publish any data on DRH (anonymous INE employee, personal communication, 14 February 2017).

In terms of research literature, few studies seem to have focused on homicide in Portugal. Recent studies have focused on elder homicide (see for instance Coelho et al., 2010) and intimate partner homicide (see for instance Pereira et al., 2013). Furthermore, an ongoing study by the Research Unit in Criminology and Behavioural Sciences at the University Institute of Maia focuses on homicides in the North of Portugal. Regarding DRH, Pereira et al. (2013) found that 7 % of the homicide victims studied ($n = 31$) had used drugs and 31 % had used medication before the homicide.

Romania

The National Institute of Statistics (*Institutul National de Statistica*, INS) annually publishes a statistical report in Romanian and English on Romania (Romanian National

Institute of Statistics, 2016). This report contains cause-of-death statistics, police statistics and justice statistics. Causes of death are coded in accordance with the ICD. Data presented in the annual reports is mainly limited to categories, rather than specific causes of death. Police statistics include offences investigated and solved by the police. These statistics are provided by the General Inspectorate of Romanian Police within the Ministry of the Interior. Justice statistics contain information on the number of persons convicted by type of crime and are provided by the Superior Council of Magistracy, which annually receives crime data from the courts, prosecutors' offices and police departments (Trandafir, 2014, p. 319). Both police and justice statistics provide figures on murder, attempted murder, involuntary homicide and deadly attacks. The INS does not collect data on DRH (INS contact, personal communication, 1 March 2017). Hence, the published cause-of-death, police and justice statistics do not provide insights into this topic. Research literature on homicide in Romania is scarce and also does not address the issue of DRH ⁽¹⁵⁾.

Slovakia

The Statistical Office of the Slovak Republic (*Štatistický úrad Slovenskej Republiky*) annually publishes a source book of demographic statistics ('The population change in the SR'; see for instance Statistical Office of the SR, 2015a). This report includes data on the number of deaths caused by homicide/assault. The Statistical Office also publishes crime statistics (Statistical Office of the SR, 2015b). These statistics are based on information from the Registration Statistical System of Criminality, which is maintained by the Slovak police, as well as supplementary data provided by the Railway Police, the Military Police, the Corps of Prison and Court Guard, and the Customs Directorate. These statistics include the annual murder count, but contain no information about to what extent these murders are drug related. In addition, police crime statistics are also annually published by the Ministry of the Interior (only in Slovak; see Ministerstvo vnútra SR, n.d.). These statistics contain figures on approximately 175 different types of offences, including murder (*vraždy*) and manslaughter (*zabitie*). The number of crimes committed under the influence of drugs (*vplyv drog*) or alcohol (*vplyv alkoholu*) can be derived for each offence. As Table 5 shows, there are very few known cases of homicide cases in which the offender was intoxicated by drugs. No economic-compulsive or systemic type of DRH data is registered by the Slovak Police (Ministry of the interior/police contact, personal communication, 15 February 2017). There appears to be no research literature on the topic of DRH in Slovakia.

⁽¹⁵⁾ In contrast, some insights into alcohol abuse among homicide offender characteristics can be derived from Balica and Stöckl's (2016) study on homicide-suicide in Romania and the role of migration.

TABLE 5

Drug-related homicide in Slovakia

Year	Total number of intentional homicides	Number of homicides committed under the influence of drugs (*)
2000	143	1
2001	129	2
2002	138	1
2003	146	2
2004	122	0
2005	106	1
2006	89	0
2007	98	1
2008	94	0
2009	84	1
2010	89	2
2011	96	1
2012	75	3
2013	78	2
2014	72	1
2015	48	0

Sources: Ministerstvo vnútra SR, 2001-2016.

(*) All cases refer to murders. Statistics on manslaughter committed while intoxicated are either 0 or not available.

Slovenia

The interactive database of the Statistical Office (*Statistični Urad*) contains data on accused, denounced and convicted persons by type of crime, including murder, negligent homicide and infanticide (Statistical Office RS, n.d.). These justice statistics stem from the Ministry of Justice, the Constitutional Court, the Public Prosecutor's Office and regular statistical surveys in the field of crime statistics by the Statistical Office. In addition, annual reports published by the police (since 2010 only in Slovenian) contain crime statistics on murder (*umor*), attempted murder, manslaughter (*uboj*) and attempted manslaughter offences (Ministrstvo za notranje zadeve, Policija, n.d.). Although these data sources provide insights into homicide in Slovenia, none of them provides any information on DRH. The same goes for the body of research literature on homicide in Slovenia, which has mostly been studied as one of many cases in international comparative studies (see next part in this Paper). Still, some literature has zeroed in on homicide in Slovenia specifically (see for instance Podreka, 2014), although not on the topic of DRH.

Spain

In Spain, the National Statistics Institute (*Instituto Nacional de Estadística*, INE) is the body responsible for large-scale statistical operations. Against this backdrop, the INE publishes cause-of-death and justice statistics (INE, n.d.).

The former provide data on the number of deaths caused by homicide, while the latter contain data on the number of persons convicted of 'homicide and its forms'. The statistics on convictions are compiled by using the Central Register of Convicted Persons, which is maintained by the Ministry of Justice. Although these sources provide insights into homicide in Spain, the INE does not collect specific information on DRH (INE contact, personal communication, 20 February 2017). A third data source on homicide is police statistics published by the Ministry of the Interior (only in Spanish) on an annual and (more recently) quarterly basis (see for instance Ministerio del Interior, n.d.). This data is supplied by the various Spanish police services via the Statistical Crime System (*Sistema Estadístico de Criminalidad*). The periodical publications contain data on regional and national crime and include combined figures on murder (*asesinato*) and manslaughter (*homicidio*). Like the homicide data published by the INE, the police statistics do not contain data on DRH.

Homicide in Spain has received little scholarly attention (Medina, 2012). Most of the research literature has been conducted by Spanish epidemiologists and historians (ibid.). Recent studies on this have especially focused on gender violence (see for instance Vives-Cases et al., 2007; 2008; Lucena et al., 2008). Furthermore, Medina (2012) conducted a comprehensive study on the epidemiology of homicide in Spain. Insights into drug use by homicide victims are provided by Lucena et al. (2008), who studied various incident and victim characteristics by examining forensic autopsy reports of homicides in Seville (2004-2007). Regarding DRH, the authors found positive results for benzodiazepines (14 % of the cases), cocaine (12 % of the cases), opiates (11 % of the cases) and tetrahydrocannabinol (9 % of the cases).

Sweden

Data on homicide in Sweden is collected by the National Board of Health and Welfare (*Socialstyrelsen*) and the National Council for Crime Prevention (*Brottsförebyggande rådet*, Brå). Cause-of-death statistics are published by the former. Data for the Health and Welfare Death Register has been collected since 1997. Data is coded in accordance with the ICD and the interactive database allows users to select specific causes of death (including homicide/assault) to create custom-made tables (National Board of Health and Welfare, n.d.). Crime and justice statistics are published by Brå in the annual *Kriminalstatistik* report (see for instance Brå, 2015). These reports, in Swedish only, contain data on reported crime, processed cases, number of suspects and number of convictions. All these statistics provide data on murder (*mord*), manslaughter (*dråp*), infanticide

(*barnadråp*) and assault leading to death (*misshandel med dödlig utgång*). Brå also maintains a semi-closed source dataset on cases of lethal violence committed in Sweden. The data collected covers the legal definitions of murder, manslaughter and assault resulting in death. Data from this dataset primarily draws from cases of lethal violence reported to the police, court verdicts and preliminary investigations concerning lethal violence in cases where there are no indications in the data from the public prosecutor that the initial police report led to anyone being sentenced. The database contains data on offenders and victims being under the influence of drugs at the time of the homicide and offenders and victims being drug users. Data from this Brå database has been published in the first report of the European Homicide Monitor (EHM), which focuses on the period 2003-2006. Within this period, the percentages of male and female offenders who were under the influence of drugs at the time of the homicide are 21 % and 13 % respectively. For male and female victims, the percentages are 14 and 4 % respectively. Furthermore, the study shows that 37 % of the male offenders and 20 % of the female offenders were drug users at the time of the homicide. The numbers of male and female victims who were drug users are much lower: 18 % and 7 % respectively (Granath et al., 2011, p. 67).

Aside from the EHM project, relatively few studies have focused on homicide in Sweden (Granath, 2012). Sweden's homicide research tradition can be described as psychiatric and forensic (Kivivuori and Lehti, 2011). The main contributions include Von Hoffer's (2008) analysis of homicide rates between 1750 and 2005, Rying's (2007) publication on the epidemiology of homicide, Belfrage and Rying's (2004) work on spousal homicide, Sturup and Lindqvist's (2014) study on homicide offenders with schizophrenia spectrum disorders, Hedlund et al.'s (2016) study on child homicide, Johansson et al.'s (2007) comparison of homicide offenders and victims, and Granath's (2012) overview of homicide trends, patterns, explanations and policies. The last of these authors provides the most comprehensive study on homicide in Sweden so far. Regarding drugs, Granath points out the low prevalence of drug use in Sweden, which might lead one to expect the number of DRH to be relatively low — at least in a global perspective (2012, p. 407). Nonetheless, the author also underlines that the relative population of heavy drug users is similar to that of other European countries, and that this — in combination with the government's hard stance against drugs — does result in drug-related violence (ibid.). Other studies supplement this statement with empirical findings. For instance, Hedlund et al. (2016, p. 93) found that 8 % of the child homicide offenders were adjudged to be suffering from substance misuse.

Turkey

The Turkish Statistical Institute (*Türkiye İstatistik Kurumu, TürkStat*) publishes cause-of-death statistics as well as crime and justice statistics. Cause-of-death statistics have been collected since 1931, but are available for Turkey as a whole only since 2009. A main data source for these statistics is the Central Population Administrative System, which has become the backbone of the e-government infrastructure in Turkey (Turkish Ministry of the Interior, 2016). Causes of death are coded in accordance with the ICD. The published statistics, however, cover only several broad categories and no specific figures on deaths caused by homicide (see TurkStat, n.d.a). More detailed data is available on the provincial level (Özdemir et al., 2015). Justice statistics cover the number of persons being sent to prison by type of crime and level of education as well as figures on juvenile charges by type of crime (see for instance TurkStat, n.d.b; n.d.c; 2015; 2016). Both types of justice statistics provide figures on homicide in Turkey. These and other crime statistics are, however, currently only partially available. Furthermore, neither the justice statistics nor the cause-of-death statistics provide any information on DRH (TurkStat employee, personal communication, 21 February 2017).

The body of research literature on homicide in Turkey has focused on patterns of homicide in general (see for instance Hilal et al., 2005; Kugu et al., 2008) and on subtopics such as homicide-suicide (see for instance Dogan et al., 2010), filicide (see for instance Karakus et al., 2003; Eke, et al., 2014), parricide (see for instance Buyuk et al., 2011), honour killings (see for instance Ozdemir et al., 2013) and firearm-related deaths (see for instance Goren et al., 2003). This body of literature provides some insights into drug use by both perpetrator and victim. For instance, Kugu et al. (2008, p. 109) found that 9 % of convicted homicide offenders were diagnosed as cannabis users and 6 % were diagnosed as multi-substance users before conviction. Furthermore, Buyuk et al. (2011, p. 3), who studied 39 cases of adolescent parricide offenders (1994-2005), stated that 'there was no history of substance use or use of any substance at the time of murder'. Ozdemir et al. (2013, p. 200) also found no signs of toxic substances in the 15 cases studied (2000-2010) of victims of honour killings.

United Kingdom

Data on homicide in the United Kingdom is published separately for (1) Northern Ireland, (2) England and Wales and (3) Scotland. Similarly, most research literature also focus on these subnational geographical regions separately.

An exception is the 'When men murder women' study, conducted by Dobash and Dobash (2015), which is currently the most in-depth and comprehensive study on homicide in the United Kingdom. The study focuses on murder cases (no manslaughter cases are included) in England, Wales and Scotland. In terms of male-male homicides, the authors found that 19 % of the perpetrators were under the influence of drugs during the homicide. In the case of intimate partner murder, this is 8 %.

Northern Ireland

For Northern Ireland, the Northern Ireland Statistics and Research Agency (NISRA) annually publishes cause-of-death statistics (see for instance NISRA, n.d.), while statistics on crime and justice are published by the Analytical Service Group of the Department of Justice, the Northern Ireland Courts and Tribunals Service and the Police Service of Northern Ireland (PSNI). Crime statistics on homicide are prepared by the PSNI (see for instance PSNI, n.d.). Specific information on DRH, however, is not compiled or readily available from PSNI records (PSNI contact, personal communication, 17 February 2017). Similarly, the small body of research literature on homicide in Northern Ireland does not address the topic of DRH.

England and Wales

Crime statistics in England and Wales are published in quarterly *Crime in England and Wales* statistical bulletins (ONS, n.d.). These bulletins were published by the Home Office until 2011, after which this responsibility was transferred to the Office for National Statistics (ONS), which has been publishing the bulletins since April 2012. These bulletins present crime statistics based on both police-recorded crime and results of the Crime Survey for England and Wales (CSEW). The CSEW is a face-to-face victimisation survey and for obvious reasons does not cover homicide. The police recorded data does cover homicide, but the figures presented do not provide information on DRH.

Data on DRH was first published in the February 2016 publication of the annual ONS compendium *Focus on violent crimes and sexual offences* (ONS, 2016). The homicide chapter in this 2016 compendium is currently the only available open source on DRH in England and Wales. The DRH data covers the combined years ending March 2013 to March 2015, and contains figures on homicide suspects being intoxicated at the time of the homicide, homicide suspects motivated by the aim to obtain drugs or to steal drug proceeds, and offences in which perpetrator and victim were either both drug dealers or both drug users. In terms of psychopharmacological violence, the data shows that 10 % of all homicide suspects were under the influence of both

drugs and alcohol, while 4 % were intoxicated by drugs only. Regarding homicide victims, these percentages are 7 % and 3 % respectively. In terms of economic-compulsive violence, the report shows that 3 % of the homicides were committed by the offender to obtain drugs. Another 3 % were committed to steal drug proceeds. Finally, regarding systemic violence, both offender and victim were drug dealers in 13 % of the homicide cases. In 4 % of the homicide offences, the offender and victim were both drug users.

This data stems from the Homicide Index, which is maintained by the Home Office. The Home Office Homicide Index contains detailed record-level information about each homicide recorded by the police in England and Wales. It is continually updated with revised information from the police and the courts and, as such, is a richer source of homicide data than the main recorded crime dataset (ONS, 2016). The data on the relationship between homicide and drugs has been collected by the Home Office since April 2007 and on a voluntary basis. Consequently, the number of missing fields is rather high. Data from April 2011 onwards is more robust. After identifying these DRH statistics as of potential interest to the EMCDDA in 2016, the Home Office added the statistics to the February 2016 compendium on violent crimes and sexual offences. Because of the small numbers and volatility in the data, the ONS has opted to publish data on DRH only every three years. The first upcoming violent crimes and sexual offences compendium that will contain DRH data is scheduled for February 2019, and will cover the period from end March 2015 to March 2018 (Home office contact, personal communication, 20 February 2017).

Homicide in England and Wales has undergone 'relatively little rigorous study by criminologists' for some significant time (Brookman, 2005, p. vi). However, the academic interest in the topic has increased. Post-2000 studies on homicide in England and Wales have focused on homicide rates after the 11 September 2001 terrorist attack (see for instance Salib, 2003), homicide due to mental disorder (see for instance Large et al., 2008), infanticide (see for instance Brookman and Nolan, 2006), homicide-suicide (see for instance Flynn et al., 2009), the epidemiology of homicide (see for instance Shaw et al., 2005; Soothill and Francis, 2012) and homicide from a legal perspective (see for instance Blom-Cooper and Morris, 2004). Several studies have also focused on the role of drugs (and alcohol) in homicide, although these studies have mainly focused on a pre-2000 timeframe. For instance, Shaw et al. (2006) analysed psychiatric reports prepared for the court in homicide convictions between 1996 and 1999. The authors found that drugs played a major role in 1 % and a minor role in 14 % of the homicides. Furthermore, in the 12 months before the homicide, 40 % of the suspects was using drugs (ibid, p. 1119).

Scotland

In Scotland, crime and justice statistics are published by the Scottish Government. The annual *Recorded crime in Scotland* report contains combined data for a broad ‘homicide etc.’ category (see for instance Scottish Government, 2015a). This category includes non-prototypical homicide cases such as causing death by dangerous driving and corporate homicide. The recorded crime report does not contain any DRH data. In addition, the government annually publishes a *Homicide in Scotland* report (see for instance Scottish Government, 2015b). This annual report solely focuses on murder and culpable homicide⁽¹⁶⁾ and covers the homicide-drug relationship. The report makes a distinction between ‘drug status’ and ‘drug-related motive’. The former contains figures on suspected perpetrator and victim being under the influence of drugs at the time of the homicide. The latter refers to:

homicide motivated by a need to obtain drugs or money for drugs, a homicide of a consumer or supplier of drugs, a homicide committed in order to steal proceeds of the drugs trade or a homicide as a consequence of rivalry between users and/or dealers within the drugs trade. (Scottish Government, 2015b, p. 22)

Thus, the homicide reports contain data on all three elements from Goldstein’s tripartite framework — psychopharmacological violence, economic-compulsive violence and systemic violence — yet the latter two are combined and cannot be disentangled (Scottish Government Justice Analytical Services contact, personal communication, 22 February 2017). DRH data published in these reports is presented in Table 6.

This data stems from individual-level data returns, which are electronically submitted by Scottish police forces on an annual basis, containing details of each case that has initially been recorded as homicide (Scottish Government, n.d.).

In terms of research literature, there is a considerable body of literature on homicide in Scotland before 2000. The body of research output covering a more recent period is smaller, but provides relevant insights into social patterning of homicide in Scotland (Leyland and Dundas, 2017), Glasgow (Lynch and Black, 2008) and the Lothian and Borders region (Kidd et al., 2013). Several studies have focused specifically on homicide involving knives and other sharp objects (e.g. Leyland, 2006; Kidd et al., 2013) and honour crime and honour killings of women (see for instance Khan, 2007). Some studies touch upon the issue of DRH, yet they provide no empirical data on DRH in Scotland.

TABLE 6
Drug-related homicide in Scotland

Year	Suspect intoxicated		Victims of economic-compulsive/systemic homicide	
	Drugs only (%)	Drugs and alcohol (%)	Persons	%
2000	13	9	11	10
2001	6	8	11	10
2002	10	15	18	14
2003	16	10	12	11
2004-2005 ⁽¹⁾	15	10	11	8
2005-2006	9	15	17	18
2006-2007	8	9	22	18
2007-2008	9	14	17	15
2008-2009	5	6	12	13
2009-2010	4	12	7	9
2010-2011	7	20	N.A.	N.A.
2011-2012	4	6	8	9
2012-2013	5	2	10	16
2013-2014	2	8	5	13
2014-2015	3	21	2	3
2015-2016	0	9	7	12

Sources: Scottish Government, 2001-2008; 2010a; 2010b; 2011-2014; 2015b; 2016.

N.A., not applicable.

⁽¹⁾ Scottish statistical bulletins in the criminal justice series have been changed to present information on a financial year basis. A financial year in Scotland (and the UK as a whole) runs from 1 April to 31 March.

⁽¹⁶⁾ And thus excludes cases of causing death by dangerous or careless driving, causing death by careless driving while under the influence of drink or drugs, and illegal driver involved in a fatal accident.

Summary

Publicly available data on DRHs in European countries is scarce. Such offences are approached either through a public health lens — and hence included in cause-of-death statistics — or through a criminal justice lens — and consequently included in crime and justice statistics. Based on the overview provided in this chapter, it becomes apparent that only a few open and (semi-)closed data sources on DRH exist within the selected European countries.

Among the European national statistical offices, only Statistics Finland and the UK Office for National Statistics (only for England and Wales) publish statistical data on DRH. Furthermore, also the German Federal Criminal Police Office, the Norwegian police, the Slovak police and the Scottish Government publish some type of DRH data. With regard to (semi-)closed sources, data on DRH is collected in the context of the Dutch Homicide Monitor, the Finnish Homicide Monitor, the database on lethal violence in Sweden by the National Council for Crime Prevention and two homicide databases in Denmark. In terms of research literature, homicide has not sparked scholarly interest in most of the countries studied⁽¹⁷⁾. Furthermore, most of the body of literature on homicide in the European countries studied does not address the issue of DRH. There are, however, several studies that provide insight into DRH, predominantly on drug use by the offender and/or perpetrator (i.e. psychopharmacological violence). This is for instance the case in England and Wales, the Netherlands, Spain, Sweden and Turkey.

All in all, data on DRH is scarce and most of the available data concerns psychopharmacological DRH. Data on economic-compulsive and systemic DRH seems especially rare. The general absence of national open and closed/semi-closed sources on DRH does not mean that countries refrain from recording information on DRH. As indicated by the analysis, information might be recorded in court or police files. Such information might however often not be processed into statistics or disclosed for research or monitoring purposes.

⁽¹⁷⁾ It is worth noting that, in addition to the research literature discussed in this chapter, there is a considerable body of homicide literature that focuses on a pre-2000 period or – especially regarding the link between psychoactive substances and homicide – on non-EU countries (mainly the USA). Given the scope of this study, this literature is not discussed. For example, see Darke (2010) for an overview.

International data sources

Overview

This second part of the analysis focuses on international homicide data sources. Such sources are compiled by information requests and drawing from data sources on the national level. An overview of the main international data sources on homicide is presented in Table 7.

Regional analyses

European and global levels

As reflected in Table 6, data on homicide on the European (or global) level is compiled by the European Sourcebook Group, Eurostat, the UNODC, the WHO and the Finnish Research Institute of Legal Policy⁽¹⁸⁾.

European Sourcebook on Crime and Justice

Currently in its fifth edition, the European Sourcebook on Crime and Justice Statistics (ESB) is the most comprehensive collection of data available on crime and criminal justice in Europe. The European Sourcebook Group prepares regular reports, which currently provide data on the period 1995-2011. These reports contain homicide data in the areas of police-registered crime, cause-of-death statistics, numbers of offenders, cases brought before court, the number of persons convicted and sanctions received. Furthermore, these statistics also contain data on the involvement of firearms, women and minors. In addition to these reports, the raw data is published as well. The European Sourcebook Group does not publish on the issue of DRH.

Eurostat

Eurostat is the statistical office of the European Union. It receives data on a variety of topics from the Member States and is responsible for consolidating this data and ensuring

⁽¹⁸⁾ Interpol also published crime statistics, and was previously considered one of the main sources on homicide. However, Interpol stopped publishing statistics in 2006 (Interpol, 2006).

TABLE 7

Overview of international homicide data sources (1)

Data source	Number of countries	EMCDDA reporting countries coverage		Availability	Drug-related homicide data
		Number	Countries		
Balkan Homicide Study	6	2	Croatia, Turkey	Closed/ semi-closed	
European Homicide Monitor (EHM)	3	3	Finland, Netherlands, Sweden	Closed/ semi-closed	Yes, P
Comparative Homicide Time Series (CHTS)	190+	30	EU 28 plus Norway and Turkey	Closed/ semi-closed	
European Sourcebook of Crime and Criminal Justice Statistics (ESB)	39	25	Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Turkey, United Kingdom	Open	
Eurostat	39	30	EU 28 plus Norway and Turkey	Open	
Lithuanian Information Technology and Communication Department	3	3	Estonia, Latvia, Lithuania	Open	
United Nations Office on Drugs and Crime (UNODC)	200+	30	EU 28 plus Norway and Turkey	Open	
World Health Organization (WHO)	140	30	EU 28 plus Norway and Turkey	Open	

P, psychopharmacological violence

(1) Excluded from this table are data sources that draw solely from a single other source. For instance, a number of national statistical offices also publish international crime statistics solely based on Eurostat.

comparability (Eurostat, n.d.a). In the area of crime and criminal justice, this data is collected through joint Eurostat-UNODC data collection across the EU countries (the UN-CTS, see below) and through additional data requests by Eurostat. The consolidated statistics on crime and criminal justice statistics are made available on the country level for European Union Member States, EFTA countries, EU candidate countries and EU potential candidates (Eurostat, n.d.b). Eurostat's homicide data includes statistics on recorded homicide offences, suspected persons by gender, prosecuted persons by gender, convicted persons by gender, victims by gender, the victim-offender relationship and the homicide count in large cities (Eurostat, n.d.c). Eurostat also maintains data series on causes of death. Data is prepared on a shortlist of 86 causes of death based on the ICD, which includes deaths caused by homicide/assault. In addition, cause-of-death statistics can be specified by sex, age and geographical region (ibid.). Neither these cause-of-death statistics nor the crime and criminal justice statistics contain data on DRH.

United Nations Office on Drugs and Crime

The UNODC is tasked with producing and disseminating statistics on drugs, crime and criminal justice on the international level. This data mainly stems from national statistical systems of the over 200 reporting countries. In the case of crime and criminal justice statistics, this is mainly supplied through the annual United Nations Survey on Crime

Trends and Operations of Criminal Justice Systems (UN-CTS) — partly in cooperation with Eurostat (see above). Additional data might be acquired directly from national statistical offices, ministries or police departments, or via international data sources such as Eurostat or the WHO. This data is processed to increase data comparability and to produce regional and global estimates (UNODC, n.d.). On homicide specifically, the UNODC maintains various datasets. These datasets contain data on, for instance, the annual homicide counts, the number of victims, the modus operandi (mechanism) and the number of persons convicted. Data from these databases has been used for the UNODC's *Global study on homicide* (2011; 2014). The UNODC databases and reports do not contain data on DRH. The *Global study on homicide* briefly refers to other studies that address the role of drugs in homicide, but mainly from a theoretical perspective. Some statistics on Finland and Sweden are provided in support of this relationship, which are drawn from the EHM (see below).

World Health Organization

The WHO annually receives data on causes of death from national statistical authorities. This data is, after it is verified that the submitted data is coded in accordance with the ICD, added to the WHO Mortality Database (WHO, n.d.). This database contains the number of deaths and age-standardised death rates by country, year, sex, age and cause. By using the Cause of Death Query Online tool, users can extract data on specific

homicide-related causes of death (ICD-10 codes X85 to Y09). Underlying raw data is also published by the WHO. Aside from data on assault under the influence of drugs or medicaments (X85), the database provides no information on DRH.

Comparative Homicide Time Series

The Comparative Homicide Time Series (CHTS) is a dataset maintained by the Institute of Criminology and Legal Policy in Helsinki. The dataset is based on public health and criminal justice sources, which are (in the case of European countries) primarily drawn from a number of previously discussed open sources: the WHO Mortality Database, the UNODC datasets and statistics prepared by national statistical offices. The dataset is under constant development, and contains information on annual homicide rates and numbers from over 190 independent countries, 40 self-governing regions and 15 historical administrative entities (Lehti, 2013). Based on this time series, Lappi-Seppälä and Lehti (2014) conducted a cross-national study on global homicide trends. It touches upon the role of drug markets in homicide, but contains no empirical data on this topic.

Further insights on the European level

A number of studies on international homicide draw from the European data sources as outlined above. For instance, the ANAMORT project (Analysis of injury related mortality in European Union countries) resulted in a bibliographical database on mortality, based on statistics compiled by Eurostat (see Institut de veille sanitaire, n.d.). Moreover, Marshall and Summers (2012) analysed trends in homicide in Europe between 1990 and 2008 by drawing from the ESB, UNODC database, WHO database and related publications. Aebi and Linde (2012) assessed regional variation of homicide rates across Europe based on data from the WHO, the ESB, Eurostat and the UNODC. More recently, Aebi and Linde (2014) analysed rates and correlates of homicide in 15 western European countries from 1960 to 2010 based on WHO and Eurostat data. Furthermore, Cole and Gramajo (2009) aimed to explain cross-country, cross-sectional variation in homicide rates in a large sample of countries, including a selection of countries across Europe. Other research literature focused on specific relationships, such as inequality and homicide (Elgar and Aitken, 2011; Stickely et al., 2012), gun ownership and violent deaths (Duquet and Van Alstein, 2015), and social welfare support and homicide (McCall and Brauer, 2014). Other studies on European homicide focused in on a city level, such as McCall and Nieuwebeerta's (2007) analysis of homicide rates in 117 large and medium-sized cities within Europe, based on homicide data from Eurostat. However, as the

international data sources do not contain data on DRH, neither do the studies that rely on these sources for data ⁽¹⁹⁾.

Northern and western Europe and subregions

Within northern and western Europe, there are no data sources that address these regions as a whole. Instead, two data sources on homicide address a smaller cluster of countries: the European Homicide Monitor, currently containing information on Finland, the Netherlands and Sweden, and the Lithuanian Information Technology and Communications Department, which collects and publishes homicide data on the Baltic States. In addition, several studies have been conducted on homicide in the wider northern and western European region.

European Homicide Monitor

The creation of the European Homicide Monitor (EHM) was the result of a pilot study by Brå, the then National Research Institute of Legal Policy of the University of Helsinki (now called the Institute of Criminology and Legal Policy) and Leiden University on the epidemiology of homicides in Finland, the Netherlands and Sweden between 2003 and 2006. The EHM database combines data from the Finnish Homicide Monitoring System, the Dutch Homicide Monitor and the Swedish Brå homicide database (see previous part of this Paper). Since the pilot, the EHM database has been growing in both geographical scope and years on which data is collected. Countries in the process of joining include Denmark, Estonia, Italy, Norway and Switzerland. However, so far, data has been published on only the years 2003-2006 (Granath et al., 2011; Liem et al., 2013).

The EHM consists of 85 variables and includes characteristics of the incident, the victim and the perpetrator. More specifically, the monitor contains data on the number of persons involved, the modus operandi, the location, the victim-perpetrator relationship, the total number of victims, the victim's sex, the victim's age, and the role of alcohol and drugs. Regarding the last, the EHM includes statistics on whether or not the victims and perpetrators had been drinking alcohol or taken drugs at the time of the homicide, as well as data on alcohol and substance use (Granath et al., 2011, pp. 64-67; Liem et al., 2013, p. 81). However, this data on DRH is currently provided on Finland and Sweden only (the insights into DRH based on the FHMS and the Brå homicide database are presented in the previous part of this Paper).

⁽¹⁹⁾ This is not the case for the alcohol-homicide link. For example, see Rossow (2001).

Lithuanian Information Technology and Communications Department

The Information Technology and Communications Department (ITCD), under the Lithuanian Ministry of the Interior, exchanges crime statistics with the Latvian Information Centre and the Estonian Ministry of Justice. The ITCD combines these statistics on crime and publishes a quarterly report on crime in the Baltic States (see ITCD, n.d.). These reports present data on the number of registered homicide cases, broken down into unintentional homicide, murder, attempted murder and infanticide. The tables also include specifics on gender, use of firearms and crimes committed by an intoxicated person. These homicides are not specified by type of crime, but relate to the total number of criminal offences. With regard to intoxication, this information is provided for Lithuania only. As can also be seen from the previous section on national data sources, Lithuania is the only Baltic State that publishes statistics on this topic.

Further insights into northern and western Europe

Several studies have been conducted on homicide in northern or western Europe as a whole. For instance, Aebi and Linde (2010) analysed the development of crime levels in western Europe between 1990 and 2007. The authors used data from the European Sourcebook on Crime and Criminal Justice and (in cases of missing data) from Eurostat and the UNODC. Regarding homicides, the study concludes, 'after an increase in the early 1990s, homicides followed a curvilinear but overall downward evolution until the beginning of the 2000s, when they started decreasing in a more steady way' (Aebi and Linde, 2010, p. 262).

Other studies focused on homicide rates and trends in subregions. For instance, Ceccato (2008) studied expressive crimes in Estonia, Latvia and Lithuania from 1993 to 2000, and Kivivuori and Lehti (2011) examined homicide trends in Finland and Sweden. The latter provide data on the number of homicide offenders being under the influence of drugs during the crime. In the case of Sweden, this data is drawn from the Swedish Homicide Monitoring System, as discussed in the previous chapter. Based on this monitoring system, the authors find that, between 2003 and 2007, 22 % of the homicide offenders were intoxicated by substances other than alcohol (Kivivuori and Lehti, 2011, p. 170). Swedish data on drug use covers only the years between 1990 and 1998 ⁽²⁰⁾.

Finally, still other studies have combined data on specific subtypes of homicide, including alcohol-related homicide in Norway, Sweden and Finland (Lehti and Kivivuori, 2005), child-on-child homicide in England and Norway (Green, 2007), and

child homicide in Finland and Austria (Putkonen et al., 2009a; 2011). Drawing data from Austrian and Finnish coroners' reports, death certificates and police reports, Putkonen et al. (2011) were able to address the drug-homicide link in their study on gender differences in filicide offence characteristics. The authors found that mothers who killed their children were under the influence of drugs ⁽²¹⁾ in 9 % of the cases, while fathers were found to be intoxicated in 15 % of the cases (2011, p. 324).

Eastern and southern Europe and subregions

Data sources and research literature on homicide in (regions within) eastern and southern Europe are scarcer than data on homicide in northern and western Europe. The key homicide source (in development) is the Balkan Homicide Study.

Balkan Homicide Study

The Balkan Homicide Study is a research project that started in 2016, and aims to provide insights into the social and legal construction and phenomenology of homicide in the Balkans. The project focuses on six states: Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Serbia and Turkey. For these six countries, the Max Planck Partner Group for Balkan Criminology analyses homicide and attempted homicide cases by examining national samples of prosecution and court cases for the years 2012, 2013 and 2014. These sources should provide insight into the characteristics of victims, the characteristics of offenders, their relationships, situational circumstances, possible connections of the offences with illegal markets and organised crime, and criminal procedure issues. The study is designed as a pilot study, which in the long run could be applied in all BCNet ⁽²²⁾ partner countries.

Further insights into southern and eastern Europe

Studies on crime rates in eastern Europe are rather scarce (Piatkowska et al., 2016). Rather than looking at multiple countries over a longer period of time, these studies tend to focus on specific countries (Stamatel, 2008). Against this backdrop, much of the homicide literature in eastern Europe focused on post-communist Russia (Stamatel, 2009). A small body of literature focused on a wider region. For instance, Piatkowska et al. (2016) analysed the impact of accession to the EU on homicide rates in eastern Europe; Stamatel (2008; 2009) conducted research on homicide rates in Bulgaria, Croatia, the Czech Republic, Hungary, Poland,

⁽²¹⁾ Drugs only, or drugs in combination with alcohol.

⁽²²⁾ The Balkan Criminology Network is a network of researchers and scholars with particular interest and expertise in the field of crime research and criminology in the Balkans.

⁽²⁰⁾ In which 13 % of the homicide offenders and 8 % of the homicide victims were under the influence of drugs during the crime.

Romania, Slovakia, Slovenia and several non-EU countries by using homicide data from the WHO and the European Sourcebook on Crime and Criminal Justice; and Favarin (2014) used UNODC homicide data to study the effects of democracy on homicide rates in the Balkans, Bulgaria and Romania⁽²³⁾. These studies do not touch upon the association between psychoactive substances and violence. Previous time series studies that address this link have mostly been confined to western European countries and North America. Consequently, there is little knowledge about this relationship in other regions (Bye, 2008). Furthermore, the studies that have been conducted on psychoactive substances and violence mainly focus on alcohol-related violence. For instance, Bye (2008) studied alcohol and homicide in six eastern European countries based on homicide statistics compiled by the WHO, and alcohol-related statistics from a number of different national and international sources. No similar studies have been conducted on the drug-homicide nexus in either southern or eastern Europe.

Summary

Currently, there is no standardised European-level dataset available that systematically gathers information on the various types of DRH. Most international data sources draw data from cause-of-death statistics or crime and justice statistics prepared by national statistical authorities. As the previous part of this Paper pointed out, most of these national statistical authorities do not collect or process statistics on DRH. It is therefore not surprising that most international data sources on homicide do not provide insight into the phenomenon of DRH. The exception is the EHM, which currently appears to be the only source of systematically collected data where a relationship is documented between a homicide event and whether or not the perpetrator was a drug user or intoxicated during the crime. Currently, the EHM's data is rather time limited and the number of reported countries is fairly low. However, both the period on which data is collected and the geographical scope are increasing. A second noteworthy project that is under development is the Balkan Homicide Study, which aims to examine national samples of prosecution and court cases. What these two projects have in common is that they are based on primary sources such as police files and prosecution files, rather than readily available national crime and justice statistics or cause-of-death statistics.

Most other studies provide little additional insight on DRH. These studies tend to rely on data from the international data sources identified above that do not contain data on DRH. As a final note, based on the overview above, it appears that

relatively few studies address homicide in an international context. However, it should be mentioned that there is in fact a considerable body of literature of cross-national homicide studies (see for instance Pridmore, 2011, pp. 742-756 for a partial overview). However, these studies predominantly contain pre-2000 data on homicide and therefore fall outside the scope of this study. Within the post-2000 body of literature, for reasons mentioned above, most studies on violent crime in an international context do not touch upon the issue of DRH.

Conclusions

This final part of our Paper will reflect on the study's findings. First, it will summarise existing data sources on DRH and the extent of drug involvement in national homicides. Then, several obstacles/weaknesses will be identified that hamper the monitoring of DRH. This will be followed by a brief discussion of insights from non-EU monitoring systems regarding potential ways to tackle these obstacles. Taking all the previous sections into account, the part will conclude by proposing several recommendations aimed at monitoring DRH in the EU, Norway and Turkey.

Findings

Data sources on drug-related homicide

The study identified several types of homicide data sources. Of these, the (semi-)closed homicide-monitoring systems tend to be the most comprehensive homicide data sources available, as they usually cover the largest number of key features and circumstances. They are somewhat comparable to open-access homicide-specific reports, although they generally contain fewer variables than the (semi-)closed databases. The more general open-source cause-of-death statistics and crime and justice statistics are usually more basic, covering less detailed information and/or fewer key features. Still, cause-of-death statistics do address the modus operandi rather extensively (see Appendix B), although this level of data is often available only upon request.

To date, there are a number of such data sources available on the Member State level to monitor DRH. Statistics on this topic are prepared annually by the German Federal Criminal Police Office, the Norwegian police, the Slovak police and Statistics Finland. Furthermore, DRH statistics are published annually by the Scottish Government. The UK Office for National Statistics

⁽²³⁾ Furthermore, Cyprus was studied as part of a study on suicide-homicide ratios in the eastern Mediterranean region. Results are, however, not presented for each country individually (see Rezaeian, 2008).

(England and Wales) has opted to publish DRH statistics every three years (combined figures for the preceding three years). In addition, England and Wales, Denmark, Finland, the Netherlands and Sweden maintain (semi-)closed monitoring systems on homicide that contain DRH data. Although these are (semi-)closed sources, some data from these monitors can be extracted from the above-mentioned periodical publications or from research literature by the persons or institutions maintaining these systems. Additional research literature based on police reports or autopsy reports provides further empirical insights into drug use by homicide victims and, to a lesser extent, drug use by homicide offenders, although only for a selected number of European countries. Ultimately, although all studied countries prepare homicide statistics (from both a public health and a criminal perspective), only a small proportion of the 30 European countries studied prepare data on DRH. This does not necessarily mean that the vast majority of countries do not document any DRH data. As shown in the analysis, information on DRH might for instance be documented in police files and subsequently not be processed into statistics or made available for research purposes.

Currently, given the scarcity of DRH data in European countries, there is no overall, standardised Europe-wide dataset available that systematically gathers information on the various types of DRH. Data used for international data sources, such as Eurostat, WHO, UNODC and the European Sourcebook on Crime and Criminal Justice, is provided by national statistical authorities. However, as shown above, most countries do not prepare data on DRH. Consequently, most international data sources do not contain any DRH data. In this regard, an important step has been taken by the creation of the EHM. The EHM currently appears to be the only international source of systematically collected data where a relationship is documented between a homicide event and whether or not the perpetrator was under the influence of alcohol or drugs during the homicide. Currently, the EHM's publicly available data is rather time limited and the number of reported countries is fairly low. However, the EHM is currently being expanded.

Extent of drug involvement in national homicides

Given the limited sources that document DRH, knowledge on this topic is limited to mere slivers of insight. Most of the scarcely available data concerns psychopharmacological violence.

The available figures on homicide offenders and drug use show differences between Member States as well as strong fluctuations within certain countries. Exemplifying the latter,

the small absolute figures of homicide offenders in Norway being intoxicated⁽²⁴⁾ can constitute percentages ranging between 8 % (2015) and 40 % (2006). Similarly, data on Scotland also fluctuates, with the proportion of homicide offenders having used drugs before the crime ranging between 7 % (2012-2013) and 27 % (2010-2011). On average, 18 % of the homicide suspects in Scotland between 2000 and 2015 were intoxicated by drugs during the crime. This is more or less similar for both Finland and Sweden (2003-2006). Figures are lower for England and Wales (14 %, 2013-2015), the Netherlands (7 %, 1994-2004) and Slovakia (where the annual number of drug-intoxicated homicide offenders between 2000 and 2015 never exceeds three). Germany is notable for showing a steady pattern that between 6 % and 10 % of homicide offenders are hard drugs users every year from 2000 to 2015. These figures are much higher in Finland and Sweden (2003-2006). Available figures on drug use by homicide victims show an equally varied picture, with some sources illustrating high levels of drug use among victims (e.g. in Finland and Sweden), while other sources, such as studies focused on Turkey and Greece, show no signs of drug use among homicide victims at all.

Even less is known about economic-compulsive homicide and systemic homicide. Data on homicide in Scotland contains figures for a combined category of economic-compulsive and systemic homicides. These figures cannot be broken down further. Regarding economic-compulsive violence, several countries produce statistics on the number of homicides committed for theft. However, usually the type of goods that the offender stole or intended to steal is not specified. Figures on economic-compulsive homicide are currently available only for England and Wales between 2013 and 2015. During that period, 3 % of the homicide cases were committed by the offender to obtain drugs. Another 3 % were committed to steal drug proceeds. In terms of systemic violence, some figures are available on England and Wales, the Netherlands and France (Paris), showing that 17 % (2013-2015), 10 % (2003) and 4 % (2007-2013) respectively of the homicide cases are linked to the drug market.

Discussion

Obstacles

Three obstacles can be identified based on the analysis presented above. First, there is a clear impediment in terms of missing data on DRH. Although homicide in itself is relatively easy to document (and hence has relatively few dark numbers), assessing whether or not a homicide is related to

⁽²⁴⁾ By drugs, medication or a combination of substances.

drugs, by one of the three mechanisms, requires knowledge that is more difficult to obtain. Determining whether or not there is a direct relationship between drug use and homicide (i.e. psychopharmacological violence) requires that drug use by the offender is established and registered by the police, and that drug use by the victim is established and documented in autopsy reports. The former, especially, is not always possible. It is, however, even more difficult to determine if a homicide is committed to support one's costly drug use (i.e. economic-compulsive violence). This requires identifying an offender as well as more information on the motive for the crime. Finally, assessing whether or not a homicide is related to the drug market (i.e. systemic violence) requires identifying the offender and the victim, as well as clarity on the milieu in which the homicide was committed. This means that, especially in the case of economic-compulsive and systemic violence, determining whether or not a homicide is drug related is rather complex. At times, statistics are presented on homicides being related to theft and homicides being related to gangs or organised crime. However, in these cases, no data is available on whether or not this involved drugs or organisations operating in the drug market. Finally, it is worth noting that at times information on DRH might be recorded in police files or registered in police systems, but not processed in statistics.

A second obstacle is the fragmented nature of homicide data within countries. As has been shown, homicide data can be extracted from various sources. Police data is processed into police statistics, while autopsy reports are used to prepare cause-of-death statistics. The various types of statistics, however, are generally not pooled together. This results in fragmented documentation. As the different types of homicide statistics are prepared in different ways, there is some degree of mismatch. For instance, several studies have shown that cause-of-death statistics are generally lower than police statistics. Fragmentation is exacerbated because homicide data availability and detail can differ between geographical levels. For instance, detailed statistics on causes of death in Turkey are available only on the provincial level. On the national level, Turkish cause-of-death statistics are less detailed and available only since 2009.

Finally, the analysis shows obstacles in terms of cross-national comparability. Countries differ in what they consider to be a 'homicide'. Although there tends to be overall consensus on what is considered a 'regular' intentional homicide, there are, however several types of homicide on which there is less consensus on whether or not they should be included under the label 'homicide' (see also Smit et al., 2012, p. 8; Marshall and Block, 2004). These non-prototypical homicides include abortion, assisted suicide, euthanasia, infanticide, assault leading to death, dangerous driving and justified killing. The extent to which European countries include non-prototypical homicides in the national definitions of homicide differs. At

times, data on these types of homicides (if they are included) is separately available. In other instances, this is not the case⁽²⁵⁾. A related issue concerns the inclusion or exclusion of attempted homicides in crime statistics. Again, among the countries that do include attempted homicides in national statistics, some countries provide separate statistics on completed and attempted homicide, while others do not. A final issue in terms of comparability arises when looking at the type of statistics produced (i.e. the units of analysis and the counting units). Data can contain information on the perpetrator, victim and/or event. Even where different countries provide data on the same unit of analysis, comparability issues might arise. For instance, Slovakia prepares figures on the number of homicide cases in which the offender was under the influence of drugs. England and Wales, among other countries, publish data on the number of perpetrators who committed a homicide while intoxicated by drugs. Other countries, such as Germany, prepare data on homicide offenders who are known drug users. Although these different counting units all focus on the perpetrator and provide insight into psychopharmacological violence, this data is not directly comparable.

Lessons that can be learned from other monitoring systems

This section briefly zooms in on non-European homicide-monitoring systems, as these might provide valuable insights in terms of tackling the obstacles identified above. This section will discuss several homicide-monitoring systems in the USA and Australia. In the USA, homicide is monitored from a public health perspective through fatal injury reports. These are developed from the National Vital Statistics System (NVSS), which is maintained by the Centers for Disease Control and Prevention (CDC). In turn, the NVSS mortality data stems from standardised death certificates filed throughout the USA (BJS, 2014). The CDC also maintains the National Violent Death Reporting System (NVDRS; see CDC, 2016). In 2002, the US Congress appropriated funding for the CDC to develop and implement this monitoring system in six states. Currently, 40 US states, the District of Columbia and Puerto Rico are participating in this monitoring system, which collects data on all types of violent deaths. Cases are categorised into five manners of death: suicide, homicide, unintentional firearm, undetermined intent and legal intervention. For each death, the NVDRS collects approximately 300 unique variables, depending on the content and completeness of

⁽²⁵⁾ Regarding these differences in definitions and concepts, the UNODC is currently coordinating a project to implement a standard classification for crime on the international level. This standard – the International Classification of Crime for Statistical Purposes (ICCS) – places emphasis on the international study of homicide and includes additional disaggregating variables, such as offender and perpetrator characteristics, the modus operandi and the motive (UNODC, 2015).

the source documents for each case (Lyons et al., 2016). The source documents are death certificates and crime reports. Information is also obtained from coroners.

Through a criminal justice lens, three more US homicide-monitoring systems can be identified. On the local level, a study into homicide in Chicago resulted in the creation of the Chicago Homicide Dataset (CHD; see NACJD, n.d.a; n.d.b; Block et al., 2005). The dataset contains a number of offender and victim variables, including cause and motivation of the crime and whether or not the crime involved drugs or gangs. This data is collected on all homicide case files of the Chicago Police Department between 1965 and 1995. On the national level, homicide is monitored through the FBI's Supplementary Homicide Reports (SHR) and the National Incident Based Reporting System (NIBRS). Both are part of the Uniform Crime Reporting Program (UCR). The UCR provides aggregate annual counts of the number of homicides occurring in the USA. The SHR data provides additional and more detailed information about each homicide. This includes information on victim and offender demographic characteristics, the modus operandi, the circumstances surrounding the incident (e.g. argument, robbery, gang-related), and the relationship between the victim and offender (BJS, 2014). The NIBRS is a broader incident-based crime reporting system through which data is collected on each single crime occurrence. This data stems from local, state and federal automated registration systems. For each crime, a variety of data is collected about the incident. This includes data on the nature and types of specific offences in the incident, data on the characteristics of the victim and offender, information on types and value of property stolen and recovered (if applicable), and information on characteristics of persons arrested in connection with the crime (NACJD, n.d.c). Homicide (i.e. murder, non-negligent manslaughter, negligent manslaughter and justifiable homicide) is a distinct category of crime in NIBRS (FBI, n.d.).

Finally, in Australia, the National Homicide Monitoring Program (NHMP) has been established to monitor homicide (i.e. murder and manslaughter, excluding driving causing death) in Australia since 1990. The NHMP dataset contains 77 distinct variables and is the country's only national system with the capacity to monitor homicide rates and to facilitate detailed analysis of homicide types and trends (AIC, 2016).

The common denominators between these national systems are the use of one definition and one language, and the involvement of a single coordinating body. Furthermore, a number of these systems draw data from multiple sources. This applies especially to the NVDRS in the USA and the NHMP in Australia. The former is the only US state-based surveillance (reporting) system that pools data on violent deaths from multiple sources. These sources include state and local medical examiner, coroner, law enforcement, toxicology and

vital statistics records (CDC, 2016). Similarly, the Australian NHMP draws data from offence records derived from each Australian state and territory police service, as well as state coronial records such as toxicology and post-mortem reports. Where necessary or appropriate, data is supplemented with information provided by police officers or by newspaper clippings (AIC, 2016). In contrast, the NIBRS, SHR and NVSS are each based on a single source (either police reports or death certificates). However, in the USA, coroners and medical examiners often work closely with law enforcement on homicide cases. Consequently, there is generally agreement on the cause-of-death and victim information reported to the CDC and the FBI, because cases are investigated and documented through collaborative efforts and then reported through the NVSS and SHR (BJS, 2014). These four traits — one definition, one language, one coordinating body and the use of multiple sources (or interdisciplinary collaboration) — can serve to tackle the obstacles discussed above in terms of fragmentation and comparability.

Recommendations: towards European-level monitoring

The status quo is characterised by a limited number of sources that document DRH, and a majority of sources that do not contain any data on the relationship between drugs and homicide or provide anchor points to assess this relationship in any other way. Given this high level of missing data, identifying suitable proxy measures (in circumstances where it is not possible to disaggregate available data) in order to assess the drug-homicide relationship directly is not a feasible option. Therefore, addressing the issue of missing data, and with it several other identified obstacles, should be the primary priority in order to be able to monitor DRH on the European level. Against this backdrop, we present the following recommendations:

1. *Define and operationalise concepts*

European countries generally show a similar picture in terms of what is considered a 'regular' intentional homicide. There is, however, less consensus about to what extent non-prototypical homicides should be considered homicide. Other differences identified between countries concern the inclusion or exclusion of attempted homicide in national statistics and the counting unit of prepared statistics. Although these points do not pose problems when analysing homicide or DRH on the national level, they clearly hamper cross-national comparisons (Smit et al., 2012, p. 8). To address differences in definitions, and hence to safeguard the reliability and validity of an international homicide monitor, it is therefore essential to define and operationalise the concepts of homicide and DRH. This entails bringing about clarity on what is (and what is not) considered

homicide, what is considered DRH, how DRH should be measured, and what type of DRH data should be prepared to ensure cross-nationally comparable data. The type of data includes variables, units of analysis and counting units. These should be realistic and carefully defined.

2. *Assume the role of coordinating body*

Only a limited number of European countries have thus far been engaged in collecting data on DRH. To ensure that DRH data collection and processing are extended to other European countries, it is recommended that this process be coordinated on the European level. The coordinating body's tasks will be to ensure DRH data collection and preparation throughout Europe — adhering to the adopted definition, operationalisation and counting units — and to track the progress of this process. This might entail creating a data-processing and coding manual. Against this backdrop, the coordinating body should create and maintain a network of national statistical authorities. These national statistical authorities, in turn, will coordinate the preparation of DRH data on the national level.

3. *Establish a monitoring system*

To increase our understanding of DRH in Europe, the data prepared by national statistical authorities require structural monitoring on the European level by the coordinating body. Structuring this data collection process might require developing search terms and constructing an appropriate search string. To address the issue of fragmentation, this monitoring should include multiple types of data sources. Combining different data sources is feasible and has the potential to result in a high-quality dataset, as shown by the NVDRS in the USA, the NHMP in Australia and the EHM in a cluster of countries in Europe. Regarding the last example, important steps have been made by the European Homicide Research Group (EHRG) ⁽²⁶⁾. In terms of monitoring homicide on an international level in Europe, the EHRG's EHM fills a long-existing gap in the comparability of homicides between European countries. Considering this groundwork and the EHRG's ambition to further expand the EHM, it seems worthwhile to cooperate with the EHRG to incorporate the different types of DRH into the EHM.

⁽²⁶⁾ For more information on the EHRG, see <http://www.violenceresearchinitiative.org/ehrg.html>.

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Appendices

Appendix A: List of contacts

TABLE A1

List of contact organisations (1)

Country	Organisation
Austria	Ministry of the Interior, Criminal Intelligence Service
Belgium	Federal Police
Belgium	Federal Police
Bulgaria	National Statistical Institute
Croatia	Ministry of the Interior/Police
Cyprus	Statistical Service
Czech Republic	Czech Statistical Office
Czech Republic	National Monitoring Centre for Drugs and Drug Addiction
Denmark	Statistics Denmark
Denmark	Ministry of Justice
Estonia	Statistics Estonia
France	Service Statistique Ministériel de la Sécurité Intérieure (SSMSI)
Germany	Bundeskriminalamt
Greece	Hellenic Police
Hungary	Central Statistical Office
Ireland	Central Statistics Office
Italy	National Institute for Statistics (ISTAT)
Italy	Ministry of the Interior
Italy	EURES
Lithuania	Ministry of the Interior
Luxembourg	Grand-Ducal Police
Malta	National Statistical Office
Norway	Norwegian Institute of Public Health
Norway	Statistics Norway
Poland	Central Statistics Office
Portugal	Statistics Portugal
Portugal	Ministry of Justice
Romania	National Institute of Statistics
Slovakia	Ministry of the Interior/Police
Spain	National Statistics Institute
Turkey	Turkish Statistical Institute
UK: England & Wales	Home Office
UK: Scotland	Scottish Government
UK: N. Ireland	National Police (PSNI)

(1) Note: the list presented only contains names of organisations that responded to our enquiry.

Appendix B: ICD-10 homicide/assault codes

TABLE B1

ICD-10 codes X85 to Y09

Code	Cause of death
X85	Assault by drugs, medicaments and biological substances
X86	Assault by corrosive substance
X87	Assault by pesticides
X88	Assault by gasses and vapours
X89	Assault by other specified chemical or noxious substance
X90	Assault by unspecified chemical or noxious substance
X91	Assault by hanging, strangulation and suffocation
X92	Assault by drowning and submersion
X93	Assault by handgun discharge
X94	Assault by rifle, shotgun and larger firearm discharge
X95	Assault by other and unspecified firearm discharge
X96	Assault by explosive material
X97	Assault by smoke, fire and flames
X98	Assault by steam, hot vapours and hot objects
X99	Assault by sharp object
Y00	Assault by blunt object
Y01	Assault by pushing from high place
Y02	Assault by pushing or placing victim before moving object
Y03	Assault by crashing of motor vehicle
Y04	Assault by bodily force
Y05	Sexual assault by bodily force
Y06	Neglect and abandonment
Y07	Other maltreatment syndromes
Y08	Assault by other specified means
Y09	Assault by unspecified means

Appendix C: Overview of DRH sources and data

TABLE C1

Data sources and research literature

Country	DRH data availability	Years	Data	Source(s)	Type of source
Czech Republic	Psychopharmacological	2005-2015	Average of 2 % of homicides committed under influence of drugs.	NMCD, on request	Police statistics
Denmark	Psychopharmacological	1982-2007	<i>Focus on Southern Denmark:</i> Average of 4 % of victims under influence of drugs during crime.	Leth (2010)	Study, using police and autopsy reports
		2012-2016	<i>Currently in first stage of development.</i>	Ministry of Justice	Homicide monitor (based on convictions)
Finland	Psychopharmacological	1995-2004	Average of 9 % (male) and 3 % (female) of offenders under influence of drugs during crime.	Hakkänen-Nyholm et al. (2009)	Study, using psychiatric and police reports
		1996-2002	<i>Focus on homicide by strangulation:</i> <ul style="list-style-type: none"> ▪ Average of 14 % of offenders diagnosed as drug dependent. ▪ Average of 10 % of offenders under the influence of drugs during crime. 	Hakkänen (2007)	Study, using psychiatric reports
		2002-2006	<ul style="list-style-type: none"> ▪ Average of 4 % (male) and 0 % (female) of offenders under influence of hard drugs during crime. ▪ Average of 4 % (male) and 0 % (female) of victims under influence of hard drugs during crime. 	FHMS, EHM. See Kivivuori et al. (2007); Granath et al. (2011)	Homicide monitor
		2003-2006	<ul style="list-style-type: none"> ▪ Average of 22 % (male) and 19 % (female) of offenders under influence of drugs during crime. ▪ Average of 16 % (male) and 13 % (female) of victims under influence of drugs during crime. ▪ Average of 30 % (male) and 12 % (female) of offenders were drug users during crime. ▪ Average of 19 % (male) and 8 % (female) of victims were drug users during crime. 		
France	Systemic	2007-2013	Average of 4 % of homicides (sample size = 485) resulted from a conflict between drug traffickers.	Scherr and Langlade (2014)	Study, using the CORAIL database (police statistics)
Germany	Psychopharmacological	2000-2015	Average of 8 % of homicides committed by a drug user.	Federal Criminal Police Office (2001-2016)	Police statistics
Greece	Psychopharmacological	1998-2013	<i>Focus on Epirus region:</i> No evidence of use of psychotropic drugs among homicide offenders.	Vougiouklakis and Tsiligianni (2006); Frangkouli et al. (2016)	Studies, using autopsy reports and court files
Ireland	Psychopharmacological	1972-1991	<ul style="list-style-type: none"> ▪ Average of 47 % of offenders under influence of drugs or alcohol during crime. ▪ Average of 42 % of victims under influence of drugs or alcohol during crime. 	Dooley (1995)	Study, based on Garda crime files
		1992-1996	<ul style="list-style-type: none"> ▪ Average of 47 % of offenders under influence of drugs or alcohol during crime. ▪ Average of 42 % of victims under influence of drugs or alcohol during crime. 	Dooley (2001)	Study, based on Garda crime files

Table C1: Data sources and research literature (continuation)

Country	DRH data availability	Years	Data	Source(s)	Type of source
Italy	Psychopharmacological	1982-2012	<i>Focus on Brescia County:</i> 60 % of victims tested positively for substances, of which 40 % for drugs (alone or in combination with alcohol).	Verzeletti et al. (2014)	Study, using post-mortem examination data
		1985-2008	<i>Focus on homicide-suicide:</i> <ul style="list-style-type: none"> ▪ Drug or alcohol problems in 10 % of offenders. ▪ Drug or alcohol problems in fewer than 1 % of victims. 	Roma et al. (2012)	Study
		2007-2008	3 % of homicide offenders suffer from active substance use (alcohol or otherwise).	Preti and Macciò (2012)	Study
Netherlands	Psychopharmacological	1998, 2002-2004	<ul style="list-style-type: none"> ▪ Average of 5 % of offenders under influence of drugs during crime. ▪ Average of 15 % of offenders addicted to drugs. 	DHM. See for instance Smit and Nieuwbeerta (2007); Leistra and Nieuwbeerta (2003)	Homicide monitor
	Systemic	1992-2001	Average of one third of homicides within criminal circuit are related to the drug market.		
		1998, 2002-2004	Average of 11 % of homicides related to drug deal.		
		2003	<ul style="list-style-type: none"> ▪ 6 % of homicide cases in which a customer killed his dealer. ▪ 2 % of homicide cases in which a dealer killed his customer. ▪ 2 % of homicide cases in which offender and victim were both users. 		
Norway	Psychopharmacological	1895-2009	In 23 % of homicide victims, drugs were detected in the blood.	Kristoffersen et al. (2014)	Study
		2000-2004	If the offender was under the influence of drugs during the crime, most often the perpetrator used more than one type of drug.	Lunde (2006)	Study
		2000-2015	Average of 27 % of offenders and 17 % of victims under influence of drugs/medication/multiple substances.	Kripos (2010; 2015)	Police statistics
	Systemic	2000-2004	Homicides resulting from drug-fights and gang-fights increased in 2000-2004 compared with before.	Lunde (2006)	Study
Portugal	Psychopharmacological	2005-2007	<i>Focus on northern Portugal:</i> <ul style="list-style-type: none"> ▪ 7 % of victims under influence of drugs during crime. ▪ 31 % of victims used medication before the crime. 	University Institute of Maia	Ongoing study
Slovakia	Psychopharmacological	2000-2015	Average of 1 % of homicides committed under influence of drugs.	Ministerstvo vnútra SR (2001-2016)	Police statistics
Spain	Psychopharmacological	2004-2007	<i>Focus on Seville:</i> Victims tested positive for benzodiazepines (14 %), cocaine (12 %), opiates (11 %) and tetrahydrocannabinol (9 %).	Lucena et al. (2008)	Study, using autopsy reports
Sweden	Psychopharmacological	2003-2006	<ul style="list-style-type: none"> ▪ Average of 21 % (male) and 13 % (female) of offenders under influence of drugs during crime. ▪ Average of 14 % (male) and 4 % (female) of victims under influence of drugs during crime. ▪ Average of 37 % (male) and 20 % (female) of offenders were drug users during crime. ▪ Average of 18 % (male) and 7 % (female) of victims were drug users during crime. 	Brå, EHM. See Granath et al. (2011)	Homicide monitor

Table C1: Data sources and research literature (continuation)

Country	DRH data availability	Years	Data	Source(s)	Type of source
Turkey	Psychopharmacological	Not specified	<ul style="list-style-type: none"> ▪ 9 % of offenders diagnosed as cannabis users. ▪ 6 % diagnosed as multisubstance users. 	Kugu et al. (2008)	Study
		1994-2005	<i>Focus on parricide offenders:</i> No cases with a history of substance use or use of any substance at the time of homicide.	Buyuk et al. (2011)	Study
		2000-2010	<i>Focus on honour killings:</i> No signs of toxic substances.	Ozdemir et al. (2013)	Study
UK: England, Wales, Scotland	Psychopharmacological	Not specified	<i>Focus on murder cases (no manslaughter):</i> 19 % of offenders under influence of drugs during the crime.	Dobash and Dobash (2015)	Study
UK: England & Wales	Psychopharmacological	2013-2015	<ul style="list-style-type: none"> ▪ Average of 14 % of homicide offenders intoxicated (10 % drugs and alcohol, 4 % only drugs). ▪ Average of 10 % of homicide victims intoxicated (7 % drugs and alcohol, 3 % only drugs). 	ONS (2016), Homicide Index	DRH statistics drawn from Home Office Homicide Index (homicide monitor)
	Economic-compulsive	2013-2015	<ul style="list-style-type: none"> ▪ Average of 3 % of homicides to obtain drugs. ▪ Average of 3 % of homicides to obtain drug proceeds. 		
	Systemic	2013-2015	<ul style="list-style-type: none"> ▪ Average of 13 % of homicide cases in which offender and victim were both dealers. ▪ Average of 4 % of homicide cases in which offender and victim were both users. 		
UK: Scotland	Psychopharmacological	2000-2015	Average of 19 % of offenders under influence of drugs during crime (11 % drugs and alcohol, 8 % only drugs).	Scottish Government (2001-2008; 2010a; 2010b; 2011-2014; 2015b; 2016)	Police statistics
	Economic-compulsive	2000-2015	Average of 12 % of victims of economic-compulsive and systemic homicide.		
	Systemic	2000-2015			

Acknowledgements

EMCDDA project group: Teodora Groshkova, Andrew Cunningham and Roumen Sedefov.

The EMCDDA would like to thank Roel de Bont, Institute of Security and Global Affairs, Leiden University, and Marieke Liem, Violence Research Initiative, Leiden University (Contract code: CC.16.SAT.0136.1.0).

The EMCDDA is grateful to Letizia Paoli, Leuven University, and Paul Turnbull, Birkbeck, University of London, for reviewing this report.

Legal notice: Neither the EMCDDA nor any person acting on behalf of the EMCDDA is responsible for the use that might be made of the following information.

Luxembourg: Publications Office of the European Union

PDF doi:10.2810/057108 | ISBN 978-92-9497-263-7

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