



European Monitoring Centre  
for Drugs and Drug Addiction

TECHNICAL REPORT

**EMCDDA pilot study of drug-related  
homicide in Finland, the Netherlands  
and Sweden**

November, 2019

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## Summary

One of the most worrying manifestations of drug markets is serious violence and homicide. Drug violence can be classified as psychopharmacological (in which there is a direct relationship between drugs and violence, in that the violent crime is committed by an individual under the influence of drugs), economic-compulsive (in which there is an indirect relationship between drugs and violence, in that economically oriented violent crime is committed in order to support costly drug use) or systemic (crime resulting from the aggressive patterns of interaction that occur within the system of drug markets). Addressing drug-related homicide (DRH) is important as homicides are very severe events that affect individuals, families and communities. These events can also be an indicator of wider drug-related violent crime. Comparing DRH statistics between countries can help identify trends and new threats — and support the planning and implementation of appropriate responses. Despite these factors, there remain significant gaps in our knowledge of DRH and a lack of relevant data.

The EMCDDA has invested in exploring how data and information on DRHs can be improved at the European level. An audit of relevant data sources and a review of the available data on DRH in Europe identified a range of challenges for data collection as well as inconsistencies in the currently available data in this area. These challenges illustrate the more general difficulty in quantifying the drug-crime relationship. To overcome the obstacles, there is a need to define and operationalise drug-related crime, based on common definitions — and to integrate them into the European monitoring system.

With a view to addressing these obstacles, the EMCDDA commissioned a pilot study to analyse quantitative and suitably disaggregated data on homicide, sourced from the European Homicide Monitor (EHM), a database underpinned by the national homicide monitoring systems of the Netherlands, Finland and Sweden. The study emerges as part of the EMCDDA's work on the development of ad hoc crime indicators related to the illicit drug market. It should be noted that it is not based on reporting from the EMCDDA network of National Focal Points. Instead, the study uses data and information available from an opportunistic sample, which is completely acceptable in this area without much prior work. The rationale for the selection of particular countries is the availability of comparable data—and it should not be misconstrued as putting attention to the particular countries in relation to general crime or drug-related homicide. We reassessed a total of 982 homicide cases in these countries (the Netherlands,  $n = 644$  (2012-16); Finland,  $n = 170$  (2014-15); and Sweden,  $n = 168$  (2013-14)) to (a) determine whether or not the homicide case was drug related and (b) identify the specific relationship between drugs and homicide, according to Goldstein's tripartite framework.

Across the participating countries, sufficient information and detail to determine whether or not a homicide case was drug related was identified in 689 (70 %) cases (the Netherlands, 367, 57 %; Finland, 170, 100 %; and Sweden, 152, 90 %). About half of all homicides committed during the study period for which enough information was available were drug related.

The way in which drugs played a role in these homicides differed between the participating countries. Psychopharmacological homicides represented the majority of DRHs in Finland ( $n = 83$ ; 100 %) and Sweden ( $n = 66$ ; 89 %), whereas systemic DRHs represented just under two thirds of the DRH sample in the Netherlands ( $n = 116$ ; 63 %). In all three all countries, economic-compulsive DRHs — with slight differences between countries — were not as common as the other two DRH types (less than 15 % of DRHs). Compared with non-drug-related cases, DRH cases generally involved more perpetrators per case. Furthermore, DRHs are more likely than non-DRHs to take place in an urban area, in public, and to involve the use of firearms as weapons. In 54 % of the Dutch drug-related cases, firearms were used (compared with 19 % in Finland and 39 % in Sweden). Firearms feature in DRHs twice as often than in non-drug-related events. In the Netherlands, DRHs are more likely to take place in public places rather than in private homes (64 % vs. 36 %), with obvious implications for public safety and security.

The main limitation is around the lack of information sources and missing data, particularly in the Netherlands and, to lesser degree, in Sweden. Furthermore, with regard to the additional drug-related variables that were included in the EHM, not all countries had access to data of similar quality. Nonetheless, this pilot study demonstrates that the EHM, pending adjustments, can capture the role of drugs in European homicides in a reliable way.

Future work could focus on broadening the temporal and geographic scope to increase the number of years for which data are collected as well as expanding the number of countries for which detailed DRH data are obtained. Furthermore, the focus of analysis could be shifted onto a city level. Finally, continuous, year-by-year monitoring of DRHs in each of the EHM countries could be considered. One or a combination of these developments can provide for a solid, data-driven basis to inform adequate drug-related policy responses in Europe.

## 1. Background and aim

In 2017, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) elaborated on and expanded its framework for monitoring the supply side of the drugs phenomenon, to reflect developments in the drug markets as well as markets' wider harms and impacts (EMCDDA, 2017). The impact of drugs and drug markets goes beyond 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; United Nations Office on Drugs and Crime, 2014), including DRH. DRH has the potential to act as a valuable indicator for wider drug-related violent crime and thus improve our understanding of the broader ramifications of drug markets. Comparing DRH levels between countries can be a valuable tool for identifying trends and new threats.

Currently, however, in Europe there is no central registration system in place that collects uniform information on DRHs (de Bont et al., 2018). Publicly available national data on DRHs in European countries are scarce (de Bont and Liem, 2017a; de Bont et al., 2018), although several (semi-) closed homicide monitoring systems exist <sup>(1)</sup>. Although some existing systems cover a variety of homicide features and circumstances, and collect some DRH data, they are not without problems <sup>(2)</sup>. First, whether or not a homicide is related to drugs is difficult to ascertain using existing population-based statistics, and typically requires more in-depth data collection, based on police or autopsy reports. Second, national sources of homicide statistics are generally not pooled. That is to say, criminal justice statistics (reflecting perpetrator characteristics) are usually not combined with public health statistics (focused on victim characteristics). In addition, comparability is hampered by cross-national variations in definitions and units of analysis.

To overcome these obstacles, we explored the possibility of expanding the European Homicide Monitor (EHM) — an international homicide coding system using common definitions and the operationalisation of homicide characteristics — to include specific DRH variables. Ultimately, our goal is to assess the extent to which expanding the EHM will allow analysis of the nature and scope of DRH in Europe. In doing so, this pilot study defines and operationalises DRH and associated concepts, based on common definitions, and integrates them into an existing monitoring system. Focusing on DRHs in three participating countries (Finland, the Netherlands and Sweden), we employed a single shared definition, standardised terminology, one coordinating body and multiple data sources, including police reports, autopsy reports, forensic psychiatric evaluation files and criminal justice (court) files.

The current study is part of the EMCDDA's work on the development of *ad hoc* crime indicators related to the illicit drug market. It should be noted that it is not based on reporting from the EMCDDA network of National Focal Points. Instead, the study utilises data and information available from this opportunistic sample of three countries. The use of an opportunistic sample is completely acceptable in this area without much prior work. The rationale for the selection of these particular countries is the availability of comparable data — and it should not be misconstrued as putting attention to the particular countries in relation to general crime or drug-related homicide.

The EHM (for a detailed discussion see Granath et al., 2011; Liem and Pridemore, 2012; Liem et al., 2013) uses individual-level homicide data to fill a long-standing gap when it comes to the

<sup>(1)</sup> These identified homicide monitors are the Dutch Homicide Monitor, the Homicide Index in England and Wales, the Italian Institute for Economic and Social Research (EURES) homicide database in Italy, the Finnish Homicide Monitor, the database on lethal violence in Sweden, held by the National Council for Crime Prevention, the Kripos monitor in Norway, the Scottish Homicide Monitor, the Balkan Homicide Monitor and two homicide databases in Denmark (see de Bont and Liem (2017a) for more details).

<sup>(2)</sup> Data on DRH are systematically prepared in the Czech Republic, Denmark, Finland, Germany, Italy, the Netherlands, Norway, Slovakia, Sweden and the United Kingdom (England, Wales and Scotland), making use of open or (semi-) closed homicide monitoring systems (see de Bont and Liem (2017a) for more details).

comparability of homicides between European countries. Currently, three countries (Finland, the Netherlands and Sweden) code their national data in accordance with the EHM format, allowing international comparisons. In addition, data collection and recoding efforts are under way in Paris, Estonia, Denmark, Scotland and Switzerland. The EHM follows a uniform structure (same variables and values), and relies on information from the police, official criminal justice records, autopsy reports, newspaper articles, and auxiliary sources in the public domain. One added value of the EHM is that it can link existing homicide typologies within DRHs, i.e. psychopharmacological, economic-compulsive and systemic homicide, to individual characteristics and could provide an in-depth clarification on this phenomenon (de Bont and Liem, 2017b).

In its coding practices, the EHM is compatible with the United Nations Office on Drugs and Crime (UNODC)'s classification model for crime at the international level, the International Classification of Crime for Statistical Purposes (ICCS)<sup>(3)</sup>. This standard mainly focuses on the study of intentional homicide, and includes additional (dis)aggregated variables, such as perpetrator characteristics, modus operandi and motive (UNODC, 2015). The ICCS provides a framework for the systematic production and comparison of statistical data across different criminal justice institutions and jurisdictions. This means that the ICCS is applicable to all forms of crime data, regardless of the stage of the criminal justice process (police investigation, prosecution, conviction, imprisonment) at which they are collected, as well as to data collected in crime victimisation surveys. ICCS data are aggregated at the country level; hence they do not allow for case-by-case analyses. One way in which the EHM overcomes this limitation is by allowing detailed individual incident-, victim- and perpetrator-based analyses.

### Classifying drug-related violence

In expanding the existing EHM with specific DRHs, we will apply Goldstein's (1985) conceptual framework to explain, study and understand the role of drugs in homicide events. Goldstein's framework was intended to describe and explain the relationship between drugs and violence. This framework is widely used when studying the drugs-violence nexus (Varano and Kuhns, 2017). It consists of three non-mutually exclusive mechanisms for examining the drug-violence nexus: psychopharmacological violence, economic-compulsive violence and systemic violence (Table 1).

TABLE 1  
Mechanisms for examining the drug-violence nexus (Goldstein, 1985)

Type	Description
Psychopharmacological violence	The relationship between drugs and violence is direct: violent crime is committed under the influence of drugs
Economic-compulsive violence	The relationship between drugs and violence is indirect: economically oriented violent crime is committed by drugs to support costly drug use but not necessarily while the perpetrator is under the influence of drugs
Systemic violence	Traditionally aggressive patterns of interaction within the system of drug distribution and use

<sup>(3)</sup> The ICCS was endorsed by the United Nations Statistical Commission, at its 46th session in March 2015, and by the Commission on Crime Prevention and Criminal Justice (CCPCJ), at its 24th session in May 2015, as an international statistical standard for data collection.



First, *psychopharmacological violence* has been defined as violence committed while either perpetrator or victim is under the influence of drugs (Goldstein, 1985) <sup>(4)</sup>. Although homicidal offending is more commonly committed in association with alcohol intoxication than with drug intoxication, one study found that in Sweden and Finland around 20 % of perpetrators were under the influence of drugs at the time of the homicide (Granath et al., 2011), as were 10-15 % of victims. The results of a recent meta-analysis (Kuhns et al., 2009) of the use of drugs among homicide victims found that in toxicology tests an average of 6 % tested positive for cannabis, 11 % for cocaine and 5 % for opiates. It has also been postulated that prescribed medication could be (indirectly) linked to violent offending. For example, Tiihonen and colleagues (2015) have suggested that the role of psychotropic drug use (antidepressants and benzodiazepines specifically) by perpetrators of homicide deserves more research attention, as these drugs appear to be linked to a higher risk of homicidal offending.

Second, *economic-compulsive* (drug-related) violence is defined as economically oriented violence in order to support costly drug use (Goldstein, 1985). The primary motivation to commit this type of violence is to steal drugs or the means (money or goods that can be sold) with which to obtain drugs. Little research has been done on this type of DRH. Although the literature has not yet settled on whether or not drug users are more likely than non-drug users to use violence when committing crime (Bennet et al., 2008; de Bont et al., 2018; Goldstein, 1985; Pierce and Kuhns, 2012), it is known that some drug users do resort to robbery, assault or homicide. Home invasion homicide, a specific type of robbery-homicide, sometimes involves 'drug rip-offs' and robberies of older adults for money and property (Heinonen and Eck, 2012). The main objective of the majority of home invasions is to obtain money. Less often the main objective is the direct procurement of drugs.

Finally, *systemic violence* is violence occurring during the sale and distribution of drugs. Systemic violence tends to occur in areas that 'are socially disorganised; have traditionally high rates of interpersonal violence; and are economically disadvantaged' (Collins, 1990). Systemic violence also includes territorial disputes and turf wars, so-called drug deals gone wrong, enforcement of normative codes, such as in gangs or drug-dealing hierarchies, robberies of drug dealers, retaliation by their dealers or their bosses, elimination of informers, punishment for selling fraudulent drugs or failing to pay one's debts (Goldstein, 1985, 1986). The use of violence could be considered as a by-product of unregulated market conditions in which the illegal drug trade is conducted (Fijnaut, 2016; Goldstein, 1986). Werb and colleagues (2011) note that the existing literature suggests that violence springs more often from illicit than licit drug trade. Outdoor drug markets tend to be associated with the use of firearms, potentially leading to fatalities (Felson and Bonkiewicz, 2011). The victims and perpetrators of this type of violence are mostly connected to drug production and drug trafficking. In Europe systemic violence is associated with the production and distribution of cannabis, heroin, cocaine and crack cocaine. It has also been argued that, in Europe, the introduction of a 'new' drug may temporarily fuel substantial violence in the drug market (Varano and Kuhns, 2017).

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<sup>(4)</sup> As mentioned by Varano and Kuhns (2017), psychopharmacological violence was originally considered as violence committed while victim and/or perpetrator were intoxicated by drugs or alcohol. Alcohol seems to have the strongest association with violence. However, the definition used in this pilot study on DRH excludes violence related to alcohol intoxication.

## 2. Methodology

For this pilot study, we examine DRHs in three European countries that are currently working with the EHM: Finland, the Netherlands and Sweden. We re-examined existing data on cases in the time period 2012-16 (Finland, 2014-15; the Netherlands, 2012-16; and Sweden, 2013-14) to (a) assess whether the homicide case was drug related and (b) identify the specific relationship between drugs and the homicide, according to Goldstein's tripartite framework. Furthermore, as a result of the overall richness of homicide data within the EHM, we are able to (c) provide specific characteristics of DRH and draw comparisons between DRH cases and cases that are known to be non-drug related.

### European Homicide Monitor

The creation of the EHM was the result of a three-year pilot study, financed by the European Union in 2009, of the epidemiology of homicides in Finland, the Netherlands and Sweden between 2003 and 2006, conducted by the Swedish National Council for Crime Prevention, the National Research Institute of Legal Policy (now the Institute of Criminology and Legal Policy at the University of Helsinki) and Leiden University. The initial EHM database combined data from the Finnish Homicide Monitoring System, the Dutch Homicide Monitor and the Swedish National Council for Crime Prevention homicide database. The EHM consists of 85 variables and includes characteristics of the incident, the victim and the perpetrator. More specifically, the EHM contains data on the number of persons involved, the modus operandi, the location, the victim-perpetrator relationship, the total number of victims and the victim's age and gender, as well as an indication of whether or not the victim and/or the perpetrator was under the influence of alcohol and/or drugs at the time the homicide was committed (for a detailed description, see Granath et al. (2011) and Liem et al. (2013)). It relies on information from the police, official criminal justice records, autopsy reports, newspaper articles and auxiliary sources in the public domain. The aim of creating the EHM was to construct a comparable dataset to the national homicide monitors of Sweden, the Netherlands and Finland. Furthermore, scholars in the three countries sought to create a mutual coding manual that could be easily adopted by others interested in homicide data collection for scientific purposes.

The idea of the EHM was to have a standardised dataset for countries and areas to compare their homicide patterns, and to enable individual- and incident-level analysis. The architecture of the EHM is based on three main principles. First, the EHM is a general homicide monitor. It includes all types of victims and incidents. This is a considerable asset because it allows analysts to compare various homicide types. In doing so, they utilise the second major capability of the EHM, namely the ability to disaggregate overall homicide patterns and trends. This helps to specify which subtypes of homicide account for possible general patterns such as national differentials and even cross-national trends. Third, the EHM system is open: new countries can join by adopting the coding system. For this pilot study, we used the EHM as a starting point to reassess in detail whether the homicide case was drug related, and to capture the specific relationship between drugs and the homicide according to Goldstein's tripartite framework. In doing so, our overarching aim was to examine whether the EHM as an instrument is able to capture the role of drugs in European homicides in a reliable way.

### Data collection and analysis

For the purpose of this study, we partly relied on data already collected in the context of the EHM framework, and partly collected additional national data on DRH cases. To this end, a number of data sources were used. For instance, for both Nordic countries the EHM data are primarily based on police data. In the case of Finland, data are gathered on information produced during the preliminary police investigation, directly collected by the principal investigator, by filling in an electronic form. Data from Sweden draw on preliminary investigations and court verdicts (de Bont and Liem, 2017a; Granath et al., 2011). For the Netherlands, sources of information on drug-related cases included public prosecution data, online court documents and Dutch media sources, and to a lesser extent police data.

All data were reported to the Dutch research team, who subsequently compiled tables and performed analyses. Chi-squared tests were used to determine whether or not differences between DRHs and non-DRHs were statistically significant. As a result of the small numbers in subcategories, we dichotomised variables to meet requirements for statistical testing. Analyses were conducted using SPSS for Windows, version 25.

## Definitions and operationalisation

In the EHM, homicide is defined as an intentional criminal act of violence by one or more human beings resulting in the death of one or more other human beings (Granath et al., 2011). In Finland, the Netherlands and Sweden, the definition covers the crimes of murder and manslaughter. Attempted homicides and suicides are not included in the data. Neither are cases of involuntary manslaughter, for example resulting from drink-driving, or cases of intentional but (by court decision) legally justified killings.

For the purposes of this pilot study, homicide is considered *drug related* when (a) the homicide occurred while either the perpetrator or the victim or both were evidently under the influence of drugs; (b) the homicide was motivated by a need to obtain drugs, or money to buy drugs; or (c) the homicide was related to the various characteristics of the drug market. In this context, drugs are defined as cannabis, opioids (heroin, morphine, etc.), stimulants (cocaine, amphetamine, etc.), hallucinogens (LSD, tryptamines, etc.) and misused and abused prescription medicines. The definition of DRH, as adopted in this pilot study, thus excludes violence related to intoxication by alcohol. We use the term *related* loosely, not implying causation but merely pertaining to the involvement of drugs in the crime.

In providing an overview of the nature and patterns of DRH, we distinguish between *incident* (the homicidal act), *victim* and *perpetrator* characteristics. Homicide *incident* characteristics include the homicide location ('public' refers to public locations, such as parks, forests, recreational areas, shops, restaurants, bars, streets, public transport, workplaces, hotels/motels, dormitories or cars, and 'private' includes the private home of either the victim or perpetrator) and the modus operandi (which includes firearms, blunt instruments, sharp instruments, strangulation, hitting/kicking or 'other' modus operandi, such as poisoning, explosives, drowning or the use of a motor vehicle). If multiple methods are used, we chose the most violent method according to the EHM manual (Granath et al., 2011). The type of homicide reflects both the relationship between the victim and the perpetrator, and the motive, and roughly consists of domestic homicide (intimate partner homicide, child homicide and other family homicide), homicide in the criminal milieu, robbery and non-felony-related homicides (nightlife violence, non-domestic homicides by the mentally ill, sexual homicides and other homicides (Granath 2011; Liem et al., 2013; Liem et al., 2018)). If partial overlap between categories occurred, the incident was defined first by the relationship between victim and perpetrator (intimate partner homicide, child homicide or other family homicide) and, second, by the main motive for the homicide. Homicide *victim* and *perpetrator* characteristics include gender, age, country of birth and drug use.

All participating countries are already engaged in preparing data in accordance with EHM standards and definitions (de Bont and Liem, 2017b). Existing drug-related EHM variables, however, do not distinguish between the three drug-violence subtypes coined by Goldstein. To further include DRH in data collection, additional variables at the individual and incident level were formulated, as outlined below.

A starting point was the inclusion of a variable (coded as HOMDRUG) that indicates if and how the homicide incident was drug related (Table 2).

TABLE 2

**General drug-related variable included in the EHM for the purpose of this pilot study**

Variable name	Explanation	Level	Coding
HOMDRUG	Was the homicide drug related?	Incident	0 = No; 1 = Yes: psychopharmacological; 2 = Yes, economic-compulsive; 3 = Yes: systemic; 999 = Unknown (note: 1, 2 and 3 are not mutually exclusive)

Moreover, the framework provides an opportunity to indicate whether more than one of the three mechanisms of drug-related violence apply to the incident, for example psychopharmacological (Yes/No), economic-compulsive (Yes/No) and/or systemic (Yes/No). For each of these three mechanisms, additional variables were formulated to increase our understanding of DRH. In this way, insights could be gained by focusing on, for example, the type of drug(s) used, the amount used and the legality of the drugs (Table 3).

TABLE 3

**Variables related to psychopharmacological homicide included in the EHM for the purpose of this pilot study**

Variable name	Explanation	Level	Coding
DRUGTYPE	What kind of drug had the individual taken at the time of the crime?	Victim and perpetrator	0 = Cannabis; 1 = Cocaine; 2 = Opioids; 3 = MDMA/ecstasy; 4 = Amphetamines; 5 = GHB; 6 = Sedatives and tranquillisers; 7 = Other drugs; 999 = Unknown
HOMDOS	What amount of drug had the individual taken?	Victim and perpetrator	0 = Less than one dose; 1 = One dose; 2 = Two doses; 3 = Three doses; 4 = Four doses; 5 = Five doses; 6 = More than five doses; 999 = Unknown
DRUGLEG	Did the individual take licit or illicit drugs at the time of the crime?	Victim and perpetrator	0 = Licit; 1 = Illicit; 2 = both; 999 = Unknown

In order to determine whether cases of robbery killings constitute economic-compulsive violence, it should be determined what the perpetrator stole or intended to steal. Additional information was gathered on the type of drug(s) that the perpetrator obtained or tried to obtain by committing the homicide (Table 4).

TABLE 4

**Variables related to economic-compulsive homicide included in the EHM for the purpose of this pilot study**

Variable name	Explanation	Level	Coding
ROBKILLTYPE	If a robbery killing: What did the perpetrator (intend to) steal?	Perpetrator	0 = Money (to buy drugs); 1 = Money (other purpose or purpose unknown); 2 = Goods (to exchange/sell for drugs); 3 = Goods (other purpose or purpose unknown); 4 = Drugs; 5 = Other; 999 = Unknown
ECOCOMDRUG	If economic-compulsive: What did the perpetrator (intend to) obtain?	Perpetrator	0 = Cannabis; 1 = Cocaine; 2 = Opioids; 3 = MDMA/Ecstasy; 4 = Amphetamines; 5 = GHB; 6 = Sedatives and tranquillisers; 7 = Other drugs; 8 = Money (to buy drugs); 9 = Goods (to exchange/sell for drugs); 999 = Unknown

Finally, systemic violence occurs within the broader criminal milieu. The inclusion of a variable that reflects this dynamic allows homicides that occurred in the context of systemic violence to be distinguished from those that did not (Table 5).

TABLE 5

**Variables related to systemic homicide included in the EHM for the purpose of this pilot study**

Variable name	Explanation	Level	Coding
CRIMMILTYPE	If occurred in the criminal milieu: how can the homicide be described?	Perpetrator	0 = 'Rip deal*' (not drug-related); <b>1 = Rip deal (drug related)</b> ; 2 = Turf war (not drug related or unknown); <b>3 = Turf war (drug related)</b> ; 4 = Retaliation/vengeance (not drug related or unknown); <b>5 = Retaliation/vengeance (drug related)</b> ; 6 = Other feud (not drug related or unknown); <b>7 = Other feud (drug related)</b> ; 999 = Unknown
VICOFFREL	What relation is the victim to the perpetrator?	Victim	0 = Parent; 1 = Child; 2 = Brother/sister; 3 = (Ex)husband/wife; 4 = Other family; 5 = Sexual partner; 6 = Friend or acquaintance; 7 = Employer, employee or colleague; 8 = Neighbour; <b>9 = Drug customer; 10 = Drug dealer; 11 = Fellow drug user; 12 = Fellow drug dealer</b> ; 13 = Customer (no drugs); 14 = Patient; 15 = Doctor or medical professional; 16 = Room-mate (not family); 17 = Tenant or landlord; 18 = Student; 19 = Teacher; <b>20 = Other (drug related)</b> ; 21 = Other (not drug related); 999 = Unknown []

\* A so-called 'rip deal' is a fraudulent deal or a type of robbery occurring in the drug scene where one party runs off with the money as well as the drugs, leaving the other party empty-handed.

Bold = (potential indicator for) systemic violence.

## Country characteristics

The three countries in our pilot study are similar in many aspects, but differ substantially in others. All are highly developed, stable European democracies, and they have fairly similar demographics. Data for the year 2016 indicate that they have similar population structures with respect to age, with around 17 % of the population younger than 14 years of age and between 15 and 18 % older than 65 years of age (Eurostat, 2017). Also similar are both life expectancy at birth (Finland, 84 years; the Netherlands, 83 years; Sweden, 84 years) and adult literacy rates (100 % of the total population in all three countries; OECD, 2018a).

One difference between the countries that is relevant to the context of DRH is the prevalence of private gun ownership. The prevalence of gun ownership in Finland (38 % of households) is one of the highest in Europe, whereas the prevalence in the Netherlands is one of the lowest (5 %); in Sweden, the gun ownership prevalence (19 %) is higher than the European average (14 %), but considerably lower than in Finland (Granath et al., 2011).

Suicide rates also vary, being highest in Finland, at 13.1 per 100 000 inhabitants, compared with 11.2 per 100 000 in Sweden (in both cases exceeding the global rate of 10.5 per 100 000; WHO, 2016) and 10.2 per 100 000 in the Netherlands (OECD, 2018b).

Moreover, for the years 2008-12, alcohol consumption <sup>(5)</sup> in Finland, at 12.3 litres per capita (63 % wine or beer, 37 % spirits or other), was higher than the European average (10.9 litres per capita). In the same period, alcohol consumption in Sweden and the Netherlands averaged 9.2 litres per capita (84 % wine or beer, 16 % spirits or other) and 9.9 litres per capita (83 % wine or beer, 17 % spirits), respectively (WHO, 2014).

As drug-related phenomena are the focus of this pilot study, a short summary of drug markets in each of the countries would seem to be in order. Europe is seen as a major destination for controlled substances as well as a transit point and a producing region for cannabis and synthetic drugs. Cannabis production is mostly for local consumption, while some synthetic drugs are manufactured for export to other countries (EMCDDA, 2018a). Other drugs in the European market, such as heroin and other opioid products, are primarily produced outside Europe. Other main stimulant drugs on the European market include cocaine, amphetamine, methamphetamine and MDMA. Cannabis appears to be the most widely used drug, the prevalence of use being five times higher than that of other substances. Although heroin and other opioids are used relatively rare, they are commonly associated with harmful use leading to infectious diseases and drug-induced death (EMCDDA, 2018a). Finland, the Netherlands and Sweden vary with regard to the types of drugs that are used and the type of drugs that are produced.

### Finland

The main drugs used in Finland, among young adults (aged 15-34) reporting drug use in the last year, include cannabis (14 %), MDMA (3 %), amphetamines (2 %) and cocaine (1 %) (EMCDDA, 2018b). In 2016, the European average drug-induced mortality rate among adults (aged 15-64 years) was 21.8 deaths per million. In Finland, the rate was above the European average, at 53.1 deaths per million. Of the deaths with known toxicology, 83 % were related to the use of opioids (EMCDDA, 2018b).

Cannabis resin mainly originates in Morocco, reaching the Finnish market from Central or Eastern Europe. Around the year 2000, the use of heroin was replaced by buprenorphine-based opioid

<sup>(5)</sup> These figures are based on populations aged 15 years and older.

substitution medications, typically originating from Lithuania and France. Synthetic stimulants (amphetamines and MDMA) are brought into the country via Estonia, Lithuania, Sweden and, sometimes, Russia. Since 2016, an increasing threat that has been reported is the trafficking of counterfeit Rivotril (which belongs to the class of benzodiazepines) from Central Europe to Finland and other Nordic countries (EMCDDA, 2018b).

In terms of homicidal violence, Finnish homicides are more often related to alcohol consumption, alcohol intoxication and drinking situations than to drug ingestion. Data for the period 2003-06 show that around 80 % of all homicide victims or perpetrators were drunk at the time of the crime (Granath et al., 2011). Kivivuori et al. (2007) note that drugs and other non-alcoholic intoxicants play only a minor part in Finnish homicides compared with the considerable impact of alcohol. With regard to drug ingestion, a prior study using the EHM showed that in 2003–06 about 20 % of Finnish perpetrators were under the influence of drugs at the time of the homicide. About 22 % of male perpetrators and about 19 % of female perpetrators were intoxicated during the homicide event (Granath et al., 2011). Furthermore, the study showed that 30 % of male perpetrators and 12 % of female perpetrators were drug users at the time of the homicide (Granath et al., 2011). Among male and female victims, the prevalence of drugs was lower, at 16 % and 13 %, respectively.

### The Netherlands

The main types of drugs reported as being used in the last year by young adults in the Netherlands include cannabis (16 %), MDMA (7 %), cocaine (4 %), and amphetamines (4 %). The prevalence of cannabis and ecstasy use is substantially higher in the Netherlands than in the Nordic countries (EMCDDA, 2018a). The drug-induced mortality rate among adults (aged 15-64 years) was 18.8 deaths per million in 2016, lower than the European average of 21.8 deaths per million. Recent figures indicate that, of deaths with known toxicology, 31 % were related to opioids (EMCDDA, 2018c).

In terms of the drug trade and drug markets, the Netherlands is the main producer in Europe of MDMA/ecstasy and (herbal) cannabis, and is the key distribution hub for cocaine (EMCDDA, 2018c). Cannabis cultivated in the Netherlands and synthetic drugs produced in the Netherlands are exported to foreign markets. Cannabis cultivation occurs mainly indoors. For both heroin and cocaine, the Netherlands is primarily a transit country. Heroin mostly originates from Afghanistan, and is trafficked to the Netherlands via the Balkan route. Cocaine, originating in South America, is most commonly shipped directly from Central American countries by sea and, to a lesser extent, by air (EMCDDA, 2018c).

Studies with a focus on Dutch DRH are few, and have mostly examined homicide related to organised crime and carried out in the context of drug transactions. Studies showed that between 1998 and 2003, perpetrators of homicides in the criminal milieu were less often addicted to drugs or under the influence of drugs than other homicide perpetrators, whereas victims of homicide in the criminal milieu were more often under the influence of drugs (Smit and Nieuwbeerta, 2007). Thus far, little is known about Dutch homicides in which psychopharmacology played a role. The EHM study by Granath and colleagues (2011) mentioned earlier did not contain Dutch data on drug use (or alcohol use) during homicide events, mostly because of the lack of information.

### Sweden

Cannabis and amphetamines are the most frequently used substances in Sweden. Cannabis remains the illicit substance most commonly used in Sweden, even although the lifetime prevalence of cannabis use among the general population aged 16-64 years remains low in comparison with other European countries (EMCDDA, 2018d). The drug-induced mortality rate among adults (aged 15-64 years) was 87.8 deaths per million in 2016, higher than the European average of 21.8 deaths per million. Of the deaths with known toxicology, 93 % were related to opioids (EMCDDA, 2018d).

The Swedish drug market is dominated by organised crime groups that are involved in the trade of several types of illicit substance as well as prescription medicines classified as narcotics. In some cases the production of cannabis and amphetamines is domestic, but it is mainly operated by organised criminal networks. Herbal cannabis is both produced domestically and smuggled from abroad. Amphetamines originate mainly from the Netherlands or Lithuania. Heroin typically originates from Afghanistan and is trafficked into Sweden via the Balkan route. Cocaine originates from South America. The MDMA/ecstasy found in Sweden is smuggled from the Netherlands (EMCDDA, 2018d).

In terms of homicidal violence, similar to findings reported on Finnish homicide, the role of alcohol in homicide was much more pronounced than the role of drugs. Data for the years 2003-06 show that about half of Swedish perpetrators had been drinking alcohol at the time of the crime and about one third were described as alcoholics (Granath et al., 2011). This EHM study also found that around 20 % of Swedish perpetrators were under the influence of drugs at the time of the homicide. About 21 % of male perpetrators and about 13 % of female perpetrators were intoxicated during the homicide event. The percentage of male and female victims who were active drug users was 18 % and 7 %, respectively (Granath et al., 2011).

In the next section, we will present the results of the pilot study on the nature and scope of DRHs in Finland, the Netherlands and Sweden. The characteristics of DRH incidents, victims and perpetrators will be presented and, where possible, compared with those of non-DRHs. However, first we will provide a description of four recent DRH events in Europe. They contextualise the results of this pilot study, illustrate the diversity of ways in which homicide can be related to drugs, and show the overlap between different types of DRH (Boxes 1-4).

Finally, in the last chapter of this report, we will reflect on the main results in the context of the ability of the EHM to provide more detailed information on DRH, if the existing framework was expanded with additional drug-related variables.

#### **Box 1: Drug-related systemic homicide in the United Kingdom**

In 2015, EI-G. was killed in west London. EI-G. pulled into the driveway of his home, where he lived with his wife and children, and then was approached by a man who shot him multiple times in the head through the car window. Paramedics fought to resuscitate the victim as he lay motionless on the driveway <sup>(6)</sup>.

EI-G. was a notorious cannabis smuggler who had recently been released from prison. Neighbours were shocked after an 'ordinary' father, shot dead in his driveway, was revealed to be a convicted drugs baron. The Morocco-born moved into his home after his release from prison in 2011, following an eight-year sentence for his part in an international cannabis conspiracy. Not long after, authorities successfully applied for a confiscation order to seize £417 031 of 'ill-gotten gains', including a luxury flat in Dubai <sup>(7)</sup>.

Detectives believe EI-G. was the victim of a long-running gang-related feud over drugs or debts. The gunman was caught on CCTV running down the street. In the following years, multiple suspects were arrested, including two men who were in prison <sup>(8)</sup> at the time of the homicide. By 2018 the case had not yet been solved.

#### **Box 2: Economic-compulsive homicide in the Netherlands**

In July 2012, a man was found dead in his own house after being strangled by T. (8,9) with a power cord cut from an electric drill. Victim and perpetrator were former neighbours and had known each other for years (10). They had drunk beer and consumed crack cocaine at the victim's house on numerous occasions.

On the day of the fatal event, after consuming alcohol, T. went to the victim's house to smoke cocaine. He was not able to fully recall what happened that evening. According to the Prosecution Office, he killed the victim because he got mad at him when they ran out of cocaine and the victim refused to lend him money to buy more (9). According to T., it 'all happened in the 'spur of the moment'. Supposedly, the main motive for the killing was

<sup>(6)</sup> <https://www.standard.co.uk/news/crime/uxbridge-murder-the-father-of-three-shot-dead-in-professional-hit-on-leafy-west-london-millionaires-10024992.html>

<sup>(7)</sup> <https://www.bbc.co.uk/news/uk-england-london-33180053>

<sup>(8)</sup> <https://www.flevopost.nl/nieuws/lelystad/11307/man-in-jol-met-snoer-gewurgd.html>

<sup>(9)</sup> <https://www.volkskrant.nl/nieuws-achtergrond/12-jaar-cel-en-tbs-voor-wurgmoord~bf89ad82/>

<sup>(10)</sup> <https://www.destentor.nl/lelystad/twaalf-jaar-geeist-voor-bizarre-moord~a7da37c5/>



of sexual: the perpetrator had been sexually assaulted by the victim in the past (9). At some time that evening T. went to the kitchen to cut the power cord. He approached the victim, who was sitting on the couch, from behind, wrapped the cord twice around the victim's neck and pulled. To make sure he succeeded in killing him, T. applied extra pressure by placing his foot on the victim's neck while pulling the cord (9).

Shortly after the fatal event, T. took EUR 200 from the victim's wallet and went out to buy cocaine from his regular drug dealer. When he returned to the victim's house, he closed the curtains and lit a candle. He sat beside the dead body lying on the couch, watching porn and consuming drugs, for several hours before turning himself in to the police that same day (7). In July 2015, after multiple appeals, T. was sentenced to nine years in prison, combined with mandatory drug addiction treatment (11).

### Box 3: Systemic homicide in the Netherlands

In October 2014, the body of R. was recovered from a lake after he had been posted as missing for weeks. The victim made a living dealing drugs and the police suspected a rip deal gone wrong (<sup>12</sup>).

Supposedly, the victim owed the perpetrator, L.B., EUR 25 000 for a previous drug transaction. L.B. decided to retrieve this sum in the form of drugs rather than cash. Under false pretences, L.B. lured the victim to the house of his girlfriend, T.G. Together with his girlfriend and female accomplice, he initially intended to drug the victim and, once unconscious, take large amounts of drugs that were stashed in the victim's car. However, after their carefully planned rip deal failed, they panicked and killed R., shooting him in the face and bashing him over the head. They left him on the bathroom floor for the night, while contemplating how to dispose of the body (<sup>11</sup>).

Over the next days, they went to great lengths to remove the victim's body and dump his remains, placed in a heavily weighted container, into a lake. A friend of L.B. helped to put the body into a large bin and transported it to a warehouse. The perpetrators bought cement and sand at a local hardware store. At the warehouse, the male accomplice prepared the cement and put both the victim's body and the cement in the large bin. While the cement was hardening, they looked for a place to dump the body. The female accomplice rented a van and a handcart to transport the heavily weighted container to a boat ramp and threw it into the lake (<sup>11</sup>).

Later, the owner of the rental company notified the police when he found that the van that the female accomplice had rented smelled of a dead person. During interrogation, she disclosed what had happened and the names of the others involved. All three perpetrators were sentenced to prison, for between 2-and16 years. In 2016, a fourth suspect — who had previously hidden from the police — was arrested (<sup>13,14</sup>), but had not been sentenced at the time of writing.

### Box 4: Psychopharmacological homicide in Sweden

In late 2017, the body of F. was found in the streets of Gothenburg, Sweden, with multiple stab wounds. He was rushed to hospital, where he died (<sup>15</sup>). He was an Australian man who had moved to Sweden six months before He left a work party shortly before the incident, which was in the early morning. A witness alerted the police at 04.22 after finding the victim suffering from wounds to the abdomen.

Following investigations, L. was arrested. He had a history of violent crime and drug misuse, and was described by the court as 'lacking education and employment'. A female friend had driven L. around that night. She said that L. had been taking pills during the day and was irritable, and that he had convinced her to go out driving. He was armed with a knife and got out of the car when he saw his victim on the footpath. When he came back to the car a few minutes later, he told her to 'drive, drive' and soon after, 'I stabbed him' (<sup>14,15</sup>). Hours before this attack, he had threatened another man with a knife.

L. stated that he did not remember what happened because he was on drugs (<sup>14</sup>). He claimed to suffer from psychosis and severe mental health issues that affected his memory and awareness (<sup>16</sup>). The assessment of the court, however, was that L. was not seriously mentally ill, and that any mental health issues he suffered were self-induced, through misuse of drugs. He was sentenced to 14 years in prison for the murder of F., and for threatening another man (<sup>14</sup>).

(<sup>11</sup>) <https://www.rtlnieuws.nl/nieuws/binnenland/negen-jaar-cel-en-tbs-voor-wurgmoord>

(<sup>12</sup>) <https://www.ad.nl/rotterdam/tot-16-jaar-cel-voor-klikomoord-in-capelle~acc9fcce/>

(<sup>13</sup>) <https://www.ad.nl/rotterdam/verdachte-van-moord-op-dagoberto-op-vrije-voeten~ac83a262/>

(<sup>14</sup>) <https://www.boevennieuws.pro/nieuws/moordenaar-abdelilah-e-aangehouden-klikomoord/>

(<sup>15</sup>) <http://www.dailymail.co.uk/news/article-6043705/Violent-drug-abuser-stabbed-Australian-disability-worker-jailed-Sweden.html>

(<sup>16</sup>) <https://www.theage.com.au/world/europe/jail-for-violent-drug-abuser-convicted-of-murdering-aussie-expat-kai-foley-in-sweden-20180809-p4zwlq.html>

### 3. The nature and scope of drug-related homicide in three European countries

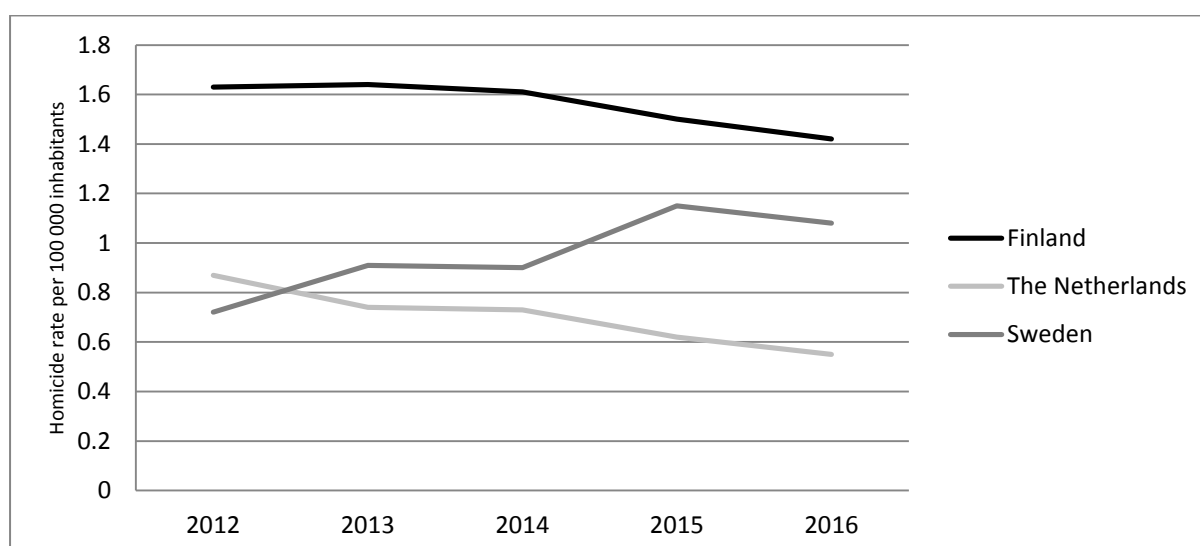
Between 2012 and 2016, the average annual homicide victimisation rate was 1.56 per 100 000 inhabitants in Finland and 0.70 per 100 000 inhabitants in the Netherlands. Sweden took up a middle position with 0.95 homicide victims per 100 000 inhabitants (Table 6).

TABLE 6  
**Homicide victimisation rate per 100 000 inhabitants in Finland, the Netherlands and Sweden (Eurostat, 2017)**

Year	Finland		The Netherlands		Sweden	
	Number	Rate	Number	Rate	Number	Rate
2012	88	1.63	145	0.87	68	0.72
2013	89	1.64	125	0.74	87	0.91
2014	88	1.61	123	0.73	87	0.90
2015	82	1.50	104	0.62	112	1.15
2016	78	1.42	94	0.55	106	1.08
Average		1.56		0.70		0.95

Over the examined timeframe, the homicide rate declined for both Finland and the Netherlands, but showed a slight increase in Sweden (Figure 1). This five-year trend period reflects an overall downwards trend in homicide rates in western European countries — the continuation of a longer-term decline in homicide rates.

FIGURE 1  
**Homicide rate per 100 00 inhabitants in Finland, the Netherlands and Sweden, 2012–16 (Eurostat, 2017)**



For particular years within this period, we were able to determine the relationship between drugs and homicide (for 2014–15 in Finland, for 2012–16 in the Netherlands and for 2013–14 in Sweden; see Table 7). There was great variation between the countries in terms of our ability to determine a

possible relationship between drugs and homicide. We were able to retrieve information on 100 % of homicides in Finland during this period, 90 % of Swedish homicides and just under 60 % of Dutch homicides.

Although the proportion of missing data was considerable, it was possible to determine that, in all three countries, about half of all homicides committed during the studied time period for which sufficient information was available were related to drugs (see Table 7). The way in which these homicides were related to drugs, however, differed between the participating countries. In Finland and Sweden, psychopharmacological-related homicides predominated (Finland:  $n = 83$ ; 100 %; Sweden:  $n = 66$ ; 89 %), whereas systemic DRHs appeared predominated in the Netherlands ( $n = 116$ ; 63 %). In all three countries, economic-compulsive DRHs — with slight differences between countries — were not as common (at less than 15 %) as the other two DRH types.

TABLE 7  
**Number of homicides examined and scope of drug-related cases in Finland, the Netherlands and Sweden**

	Finland (2014-15)		The Netherlands (2012-16)		Sweden (2013-14)		Combined	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Total cases examined	170	100	644	100	168	100	982	100
Drug-related homicide*	83	49	186	51	74	49	343	50
Psychopharmacological	83	<i>100</i>	44	<i>24</i>	66	<i>89</i>	193	<i>56</i>
Economic-compulsive	2	<i>2</i>	13	<i>7</i>	10	<i>14</i>	25	<i>7</i>
Systemic	11	<i>13</i>	116	<i>63</i>	22	<i>30</i>	149	<i>43</i>
Non-drug-related homicide	87	51	181	49	78	51	346	50
<b>Total known</b>	170	100	367	57	152	90	689	70
Unknown	0	0	277	43	16	10	293	30

\*Because of the non-mutually exclusive nature of DRH categories, the percentages in italics do not add up to 100 %.

As mentioned above, Goldstein's classification stipulates non-mutually exclusive categories. As reflected in Table 7, all types of DRH show an overlap. A detailed qualitative exploration revealed the nature of this overlap. All Finnish DRHs were classified as being psychopharmacological in nature, and some of those were also classified as systemic or economic-compulsive DRHs. And among economic-compulsive homicides in Finland, one debt-related robbery was also classified as systemic. Almost all systemic homicides were debt related; less often they were a result of conflicts relating to drug transactions. In the case of the Netherlands, given the relatively high proportion of missing information, the scope and nature of the overlap is not clear. In Sweden, the majority of economic-compulsive homicides were committed by perpetrators who were under the influence of drugs at the time of the event. Similarly, a substantial number of economic-compulsive and systemic DRHs also showed a psychopharmacological link. About half of Swedish systemic homicides appeared to be debt related. In addition, most economic-compulsive homicides entailed robberies, but others were debt related or so-called hitman missions in the context of organised crime.

## Drug-related homicide

Next, we will address the incident, victim and perpetrator characteristics of DRHs, shedding light on their main characteristics in all three countries taken together, as well as — where data allow us to do so — in each of the three participating countries individually. Furthermore, we compare these characteristics with homicides that are known to be non-drug related.

### Incident characteristics

As shown in Table 8, in all participating countries less than 6 % of DRH events studied involved more than one victim. A more considerable proportion of cases (roughly ranging from 20 % to 30 %),

however, involved more than one perpetrator. Around 70 % of DRHs involved a single perpetrator. Most DRH events took place in an urban rather than a rural area, and approximately half took place in a domestic setting, in the victim's home, the perpetrator's home or their shared home. An exception to this observation was found in the Netherlands, where two thirds of the DRHs took place in a public setting, such as bars and restaurants, hotels, on the street or in a park or forest — reflecting the systemic nature of DRHs in the Netherlands. Firearms and knives or other sharp objects were among the most frequently used weapons in DRHs.

When examining cross-country differences, it was found that DRH events in the Netherlands involved multiple perpetrators in about one out of three cases, compared with one out of five cases in Finland and Sweden. Most of the Dutch cases involved systemic homicides that were committed with accomplices. In terms of location, countries differed in whether the event happened in a public or a private place. While in Finland, the place of the crime was most often the victim's home or other private area, in both the Netherlands and Sweden, most were committed on the public road or in a public place, mostly in urban areas. Table 8 also reflects differences between countries in the modus operandi of the DRH events. In both Nordic countries, the use of knives was the most common method (around 40 %), which could partly be attributed to the domestic nature of these events, where knives are in close reach.

TABLE 8  
Drug-related homicide incident characteristics in participating countries

	Finland (2014-15)		The Netherlands (2012-16)		Sweden (2013-14)	
	Number (total=83)	%	Number (total=186)	%	Number (total=74)	%
<i>Number of victims</i>						
1	83	100	177	95	67	94
> 1	0	0	9	5	3	6
Unknown	0	—	0	—	4	—
<i>Number of perpetrators</i>						
1	62	76	129	69	51	72
> 1	19	23	57	31	16	23
Case unsolved	1	1	0	0	4	5
Unknown	1	—	0	—	3	—
<i>Crime scene</i>						
Shared home	7	8	11	6	7	10
Perpetrator's home	15	18	15	8	9	12
Victim's home	24	29	40	22	23	31
Park, forest or recreational area	7	8	6	3	7	10
Public road or other public place	13	16	98	53	26	34
Other	17	21	16	8	2	3
Unknown	0	—	0	—	0	—
<i>Geographical region (victim based)</i>						
Urban area	74	89	126	68	57	79
Rural area	9	11	60	32	15	21
Unknown	0	—	0	—	2	—

<i>Modus operandi</i>						
Firearm	16	19	101	54	29	39
Knife or sharp weapon	32	39	47	25	31	42
Blunt object	8	10	7	4	4	5
Strangulation or suffocation	8	10	15	8	3	4
Smoke or fire	0	0	1	1	0	0
Hitting or kicking, without weapon	13	15	9	5	6	9
Other	6	7	6	3	1	1
Unknown	0	—	0	—	0	—
<i>Evidence of drug ingestion</i>						
Victim only	14	17	—	—	21	28
Perpetrator only	25	29	—	—	11	15
Both	22	27	—	—	24	33
None	22	27	—	—	18	24
Unknown	0	—	—	—	0	—

### Victim characteristics

In all three countries, victims of DRH were predominantly male, and about half were aged between 25 and 45 years. A cross-country examination revealed differences in the victim's country of birth: while the vast majority of DRH victims in Finland were native born, a considerable proportion of victims in the Netherlands and Sweden were foreign born (Table 9).

TABLE 9

### Drug-related homicide victim characteristics in participating countries

	Finland (2014-15)		The Netherlands (2012-16)		Sweden (2013-14)	
	Number (total=83)	%	Number (total=186)	%	Number (total=74)	%
<i>Gender</i>						
Female	13	16	35	19	9	12
Male	70	84	151	81	65	88
<i>Age (years)</i>						
< 18	3	4	7	4	2	3
18-24	4	5	22	12	11	15
25-34	22	27	56	30	29	39
35-44	23	28	39	21	6	7
45-54	17	21	32	17	10	14
55-64	13	16	13	7	8	11
> 65	1	1	17	9	8	11
Unknown	0	—	0	—	0	—
<i>Country of birth</i>						
Home country	77	93	55	41	35	63
Abroad, Europe	3	4	19	13	11	20
Abroad, outside Europe	3	3	64	46	10	17
Unknown	0	—	48	—	18	—

### Perpetrator characteristics

In all three countries, perpetrators of DRH were typically male, and between 25 and 45 years of age (Table 10). In Sweden and the Netherlands, 40-55% were native born, but in Finland this figure was much higher, at 93 %. With respect to the relationship between victim and perpetrator, the results showed that 75-80% of DRHs could be categorised as male-male conflicts, and that 13-20% were male-female conflicts. Men are thus at higher risk of being a perpetrator or a victim. Robberies and systemic conflicts also typically involved men. The data showed that the nature of the relationship between perpetrator and victim was not straightforward (including family, friends or strangers), with the different countries presenting a rather diverse picture. After committing homicide, 6 % of the perpetrators attempted or committed suicide. Finally, the vast majority of all DRHs were coded either as occurring in the criminal milieu or as 'other feud in non-criminal milieu', which mostly involved conflicts over non-criminal matters.

When zooming in on perpetrator characteristics by country, the results showed that most Finnish perpetrators were male, typically between 25 and 45 years of age, and native born. Generally, Finnish DRHs involved male-male conflicts. At the time of the event, most Finnish DRH perpetrators were friends or acquaintances of the victim, or were otherwise previously known to the victim, while 16 % of the victims of DRHs were strangers to the perpetrator and a further 15 % were current or former partners. As in the other countries, suicide/attempted suicide by the perpetrator was not common (6 % of total). Three out of five DRHs were classified as homicides in the non-criminal milieu, and about one out of seven was an intimate partner homicide.

The majority of Dutch DRH perpetrators were male, between 25 and 45 years of age. Almost 60 % were foreign born. Slot (2017), in analysis of contract killings in the Netherlands, identified Moroccan Dutch as the source of a large number of recent DRHs. The vast majority of DRHs involved male-male conflicts (75 %). Typically, Dutch DRH victims were either friends/acquaintances (22 %) or (estranged) intimate partners (22 %) of the perpetrator. One in ten victims were strangers to the perpetrator, while approximately one in four (27 %) were previously known to the perpetrator (but not a family member). Suicide/attempted suicide by the perpetrator was, as in Finland, infrequent (6 % of total). As indicated elsewhere, criminal milieu cases/systemic homicides constituted the most prevalent category of DRHs (65 %).

A closer look at the data shows that in Sweden perpetrators of DRH were typically male. Compared with Finland and the Netherlands, Swedish perpetrators appeared to be somewhat younger, mostly between 18 and 35 years of age. Little more than half were native born. Furthermore, the majority of DRHs involved male-male conflicts. As for the relationship to the victim, Swedish perpetrators were typically friends or acquaintances (64 %). As in the other two countries, suicide/attempted suicide was not common, occurring in less than 7 % of all perpetrators. Finally, Swedish DRHs were often related to the criminal milieu (42 %) or classified as conflicts in the non-criminal milieu (28 %).

TABLE 10  
Drug-related homicide perpetrator characteristics in participating countries

	Finland (2014-15)		The Netherlands (2012-16)		Sweden (2013-14)	
	Number (total=83)	%	Number (total=186)	%	Number (total=74)	%
<i>Gender</i>						
Male	74	90	152	82	58	94
Female	8	10	34	18	4	6
Unknown	1	—	0	—	12	—

<i>Age (years)</i>						
< 18	1	1	5	3	2	4
18-24	16	20	21	11	17	30
25-34	27	33	55	30	26	46
35-44	22	27	41	22	7	12
45-54	13	16	33	17	3	4
55-64	3	3	14	8	2	4
> 65	0	0	17	9	0	0
Unknown	1	—	0	—	17	—
<i>Country of birth</i>						
Home country	76	93	53	41	25	54
Abroad, Europe	2	2	17	13	12	26
Abroad, outside Europe	4	5	60	46	9	20
Unknown	1	—	56	—	28	—
<i>Gender: perpetrator-victim</i>						
Male-female	11	13	26	20	8	13
Female-male	6	7	5	4	4	7
Male-male	63	77	98	75	48	80
Female-female	2	3	2	1	0	0
Unknown	1	—	55	—	14	—
<i>Relationship between perpetrator and victim</i>						
Parent	1	1	9	6	0	0
Child	2	2	12	8	3	6
Brother/sister	1	1	2	1	0	0
(Ex)husband/wife (including same sex)	12	15	33	22	5	10
Other family	0	0	6	4	1	2
Friend or acquaintance	36	44	33	22	32	64
Sexual partner	0	0	3	2	0	0
Employer/employee/coll eague	0	0	0	0	0	0
Neighbour	0	0	8	5	0	0
Drug customer	0	0	3	2	0	0
Drug dealer	0	0	3	2	0	0
Roommate (not family)	0	0	3	2	0	0
Other previously known	17	21	20	14	0	0
Stranger	13	16	14	10	9	18
Unknown	1	—	37	—	24	—
<i>Suicide</i>						
Suicide	2	2	1	1	2	3
Suicide attempt	3	4	6	6	2	3
No suicide/suicide attempt	77	94	113	94	63	94
Unknown	1	—	66	—	7	—
<i>Type of homicide</i>						
Partner killing	11	13	11	6	5	7
Child killing (in family)	1	1	7	4	0	0
Other familial killing	3	4	8	4	4	6
Criminal milieu	5	6	115	65	31	42

Robbery killing: commercial business	0	0	1	1	1	1
Robbery killing: private home	1	1	10	6	4	5
Nightlife violence	2	2	2	1	3	4
Killing by a non-family member with a mental health disorder	4	5	8	4	5	7
Other in non-criminal milieu	53	65	12	7	21	28
Sexual killing	2	3	2	1	0	0
Other	0	0	2	1	0	0
Unknown	1	—	8	—	0	—

## Drug-related homicide compared with non-drug-related homicide

### Incident characteristics

Next, we compared DRH events with non-DRH events (Tables 11, 12 and 13). Except in Finland, DRH cases generally involved more perpetrators per case than non-DRHs. Moreover, DRH events were more likely than non-DRHs to take place in an urban area. Generally, DRHs, compared with non-DRHs, more took place often in public, and more often involved a firearm as a weapon, than. These event characteristics, however, differ substantially between countries.

In Finland (Table 11), DRH most often occurred in domestic settings (either in a shared home or in the perpetrator's or the victim's home; 56 %). This is perhaps not surprising, because most Finnish DRHs were related to substance use in private home settings. Although knives were used in one third of both DRHs and non-DRHs, firearms were used significantly more often than any other weapon in DRHs (19 % vs. 8 %;  $\chi^2 = 4.6(1)$ ;  $p \leq 0.05$ ).

TABLE 11  
Drug-related and non-drug-related homicide incident characteristics in Finland, 2014-15

	Drug-related		Non-drug-related		Total	
	Number (total=83)	%	Number (total=87)	%	Number (total=170)	%
<i>Number of victims</i>						
1	83	100	80	92	163	96
> 1	0	0	7	8	7	4
<i>Number of perpetrators</i>						
1	62	76	70	90	132	82
> 1	19	23	7	9	26	16
Case unsolved	1	1	1	1	2	2
Unknown	1	—	9	—	9	—
<i>Crime scene</i>						
Shared home	7	8	12	14	19	11
Perpetrator's home	15	18	10	12	25	15
Victim's home	24	29	19	22	43	25
Park, forest or	7	8	1	1	8	5



recreational area						
Public road or other public place	13	16	15	17	28	17
Other	17	21	29	33	46	26
Unknown	0	—	1	—	1	—
<i>Geographical region</i>						
Urban area	74	89	69	79	143	84
Rural area	9	11	18	21	27	16
Unknown	0	—	0	—	0	—
<i>Modus operandi</i>						
Firearm*	16	19	7	8	23	14
Knife or sharp weapon	32	39	31	36	63	37
Blunt object	8	10	7	8	15	9
Strangulation or suffocation	8	10	12	14	20	11
Smoke or fire	0	0	3	3	3	2
Hitting, kicking without weapon	13	15	14	16	27	16
Other	6	7	13	15	19	11
Unknown	0	—	0	—	0	—
<i>Evidence of drug ingestion</i>						
Victim only	14	17	0	—	14	8
Perpetrator only	25	29	0	—	25	15
Both	22	27	0	—	22	13
None	22	27	87	—	109	64

\* indicates that a difference was found between drug-related homicides and non-drug-related homicides with  $p \leq 0.05$ .

In the Netherlands, most DRHs were systemic DRHs and they were more likely than non-DRHs to involve only one perpetrator (DRH 31 % vs. non-DRH; 13 %  $\chi^2 = 15.0(1)$ ;  $p \leq 0.001$ ). Moreover, Dutch DRHs more often took place in a public area (including parks, public roads or other public places, bars, restaurants and hotels) than did non-DRHs (64 % vs. 42 %;  $\chi^2 = 10.9(1)$ ;  $p \leq 0.01$ ; Table 12). The latter, in contrast, mostly occurred in domestic settings (Table 12).

TABLE 12  
**Drug-related and non-drug-related homicide incident characteristics in the Netherlands, 2012-16**

	Drug related		Non-drug related		Total	
	Number (total=186)	%	Number (total=181)	%	Number (total=644)	%
<i>Number of victims</i>						
1	177	95	176	97	612	95
> 1	9	5	5	3	32	5
<i>Number of perpetrators*</i>						

1	129	69	157	87	517	80
> 1	57	31	24	13	124	19
Case unsolved	0	0	0	0	3	1
<i>Crime scene**</i>						
Shared home	11	6	49	27	109	17
Perpetrator's home	15	8	22	12	71	11
Victim's home	40	22	34	19	142	22
Park, forest or recreational area	6	3	7	4	19	3
Public road or other public place	98	53	55	30	245	38
Other	16	8	14	8	58	9
Unknown	0	—	0	—	0	—
<i>Geographical region</i>						
Urban area	126	68	87	48	433	68
Rural area	60	32	94	52	204	32
Unknown	0	—	0	—	7	—
<i>Modus operandi</i>						
Firearm	101	54	37	21	192	33
Knife or sharp weapon	47	25	62	35	187	32
Blunt object	7	4	12	7	29	5
Strangulation or suffocation	15	8	37	20	76	13
Smoke or fire	1	1	4	2	12	2
Hitting, kicking without weapon	9	5	14	8	47	8
Other	6	3	12	7	40	7
Unknown	9	—	3	—	61	—

\* $p \leq 0.05$ ; \*\* $p \leq 0.01$ . The numbers of drug-related and non-drug-related homicides do not add up to the total because of missing data.

In Sweden, similarly to the Netherlands, one out of five DRHs involved more than one perpetrator per case, as opposed to nearly one out of ten non-DRHs ( $\chi^2 = 4.7(1)$ ;  $p \leq 0.05$ ; Table 13). Furthermore, DRHs were less likely to take place in a domestic setting than non-DRHs (53 % vs. 75 %;  $\chi^2 = 9.4(1)$ ;  $p \leq 0.01$ ).

TABLE 13  
Drug-related and non-drug-related homicide incident characteristics in Sweden, 2013-14

	Drug related		Non-drug related		Total	
	Number (total=74)	%	Number (total=78)	%	Number (total=168)	%
<i>Number of victims</i>						
1	67	94	67	92	134	93
> 1	3	6	6	8	10	7
Unknown	4	—	5	—	24	—

<i>Number of perpetrators*</i>	71					
1	51	72	63	86	114	79
> 1	16	23	7	10	23	16
Case unsolved	4	5	3	4	7	5
Unknown	3	—	5	—	24	—
<i>Crime scene**</i>						
Shared home	7	10	23	30	30	20
Perpetrator's home	9	12	10	13	19	13
Victim's home	23	31	24	32	47	32
Park, forest or recreational area	7	10	4	5	11	7
Public road or other public place	26	34	14	18	39	26
Other	2	3	1	1	3	2
Unknown	0	—	2	—	19	—
<i>Geographical region</i>						
Urban area	57	79	54	71	111	75
Rural area	15	21	23	29	38	25
Unknown	2	—	1	—	19	—
<i>Modus operandi</i>						
Firearm	29	39	15	20	44	30
Knife or sharp weapon	31	42	37	49	68	46
Blunt object	4	5	5	7	9	6
Strangulation or suffocation	3	4	5	7	8	5
Smoke or fire	0	0	2	3	2	1
Hitting or kicking, without weapon	6	9	7	9	13	9
Other	1	1	4	5	5	3
Unknown	0	—	3	—	19	—
<i>Evidence of drug ingestion</i>						
Victim only	21	28	0	0	5	5
Perpetrator only	11	15	0	0	11	10
Both	24	33	0	0	8	7
None	18	24	73	100	87	78
Unknown	0	—	5	—	57	—

\* $p \leq 0.05$ ; \*\* $p \leq 0.01$ .

### Victim characteristics

When comparing victim characteristics of DRHSs and non-DRHs, in all participating countries, victims of the former were more often male and typically younger than victims of the latter. With the exception of the Netherlands, the proportion of victims who were native born was similar in both cases (see Tables 14-16).

In Finland, DRH victims were more likely than the victims of non-DRH to be male (84 % vs. 65 %;  $\chi^2 = 8.0(1)$ ;  $p \leq 0.01$ ). Most victims of DRH were 45 years of age and younger, whereas victims of non-DRH were typically 45 or over ( $\chi^2 = 4.3(1)$ ;  $p \leq 0.05$ ). In both types of homicide, around 90 % of victims were native born (Table 14).

TABLE 14  
Drug-related and non-drug-related homicide victim characteristics in Finland, 2014-15

	Drug related		Non-drug related		Total	
	Number (total=83)	%	Number (total=87)	%	Number (total=170)	%
<i>Gender**</i>						
Female	13	16	30	35	43	25
Male	70	84	57	65	127	75
<i>Age (years)*</i>						
< 18	3	4	9	10	12	7
18-24	4	5	1	1	5	3
25-34	22	27	5	6	27	16
35-44	23	28	15	17	38	22
45-54	17	21	24	28	41	24
55-64	13	16	20	23	33	19
> 65	1	1	13	15	14	8
Unknown	0	—	0	—	0	—
<i>Country of birth</i>						
Finland	77	93	77	89	154	91
Abroad, Europe	3	4	5	6	8	5
Abroad, outside Europe	3	3	5	5	8	4

\* $p \leq 0.05$ ; \*\* $p \leq 0.01$ .

Similarly to Finland, victims of DRH in the Netherlands were significantly more often male than were victims of non-DRH (82 % vs. 55 %;  $\chi^2 = 30.1(1)$ ;  $p \leq 0.01$ ), and the former were more often under the age of 45 (mostly between 25 and 45 years) than the latter (mostly over 45 years;  $\chi^2 = 1.1(1)$ ;  $p \leq 0.05$ ). Seventy per cent of Dutch victims of non-DRH were native, in contrast to 41 % of victims of drug-related homicides ( $\chi^2 = 22.9(1)$ ;  $p \leq 0.001$ ; Table 15).

TABLE 15  
Drug-related and non-drug-related homicide victim characteristics in the Netherlands, 2012-16

	Drug related		Non-drug related		Total	
	Number (total=186)	%	Number (total=181)	%	Number (total=644)	%
<i>Gender**</i>						
Female	35	18	81	45	217	34
Male	151	82	100	55	420	66
Unknown	0	—	0	—	7	—
<i>Age (years)*</i>						
< 18	7	4	22	12	57	9
18-24	22	12	20	11	69	11
25-34	56	30	34	19	145	23
35-44	39	21	38	21	133	21
45-54	32	17	33	18	107	17
55-64	13	7	11	6	58	8
> 65	17	9	23	13	69	11
Unknown	0	—	0	—	13	—

Country of birth***						
The Netherlands	55	41	78	70	222	59
Abroad, Europe	19	13	9	8	41	11
Abroad, outside Europe	64	46	24	22	114	30
Unknown	48	—	70	—	267	—

\* $p \leq 0.05$ ; \*\* $p \leq 0.01$ ; \*\*\* $p \leq 0.001$ . The numbers of drug-related and non-drug-related homicide do not add up to the total because of missing data.

In Sweden, too, victims of DRH were more often male than were victims of non-DRH (88 % vs. 65 %;  $\chi^2 = 10.6$  (1);  $p \leq 0.01$ ), and the former were less likely to be over 45 years of age (36 % vs 66 %;  $\chi^2 = 14.8$ (1);  $p \leq 0.001$ ). The proportions of victims of DRHs and non-DRHs who were native-born victims were similar (Table 16).

TABLE 16  
Drug-related and non-drug-related homicide victim characteristics in Sweden, 2013-14

	Drug related		Non-drug related		Total	
	Number (total=74)	%	Number (total=78)	%	Number (total=168)	%
<i>Gender**</i>						
Female	9	12	27	35	42	25
Male	65	88	51	65	126	75
<i>Age (years)***</i>						
< 18	2	3	8	10	12	7
18-24	11	15	1	1	5	3
25-34	29	39	5	6	27	16
35-44	6	7	13	17	39	23
45-54	10	14	21	28	40	24
55-64	8	11	18	23	32	19
> 65	8	11	12	15	13	8
Unknown	0	—	0	—	0	—
<i>Country of birth</i>						
Sweden	35	63	35	69	80	65
Abroad, Europe	11	20	4	8	17	14
Abroad, outside Europe	10	17	12	23	26	21
Unknown	18	—	27	—	45	—

\*\* $p \leq 0.01$ ; \*\*\* $p \leq 0.001$ .

### Perpetrator characteristics

In Finland and Sweden, male perpetrators accounted for a similar proportion of DRHs and non-DRHs, whereas in the Netherlands male perpetrators accounted for higher proportion of DRHs than of non-DRHs. Generally, perpetrators of DRHs were younger than perpetrators of non-DRHs. The proportion of perpetrators who were foreign born varied widely between countries. Most DRHs originated from male-male conflicts, while non-DRHs tended to originate more often from female-male conflict. Typically, perpetrators of DRHs were either friends/acquaintances or strangers, while non-DRHs generally involved family members or intimate partners (or estranged intimate partners). In all countries, perpetrators of non-DRHs committed (or attempted to commit) suicide more frequently than perpetrators of DRH. As for the type of homicide, DRHs mostly originated from within the criminal milieu, except in Finland. Non-DRHs typically involved domestic homicide, including intimate partner homicide, child homicide and the killing of other family members.

In Finland specifically, no apparent difference in the gender of the perpetrator was observed between DRHs and non-DRHs (see Table 17). Perpetrators of DRHs were significantly younger (25-45 years) than perpetrators of non-DRHs ( $\chi^2 = 7.9$  (1);  $p \leq 0.01$ ; 'under 45 years' vs. '45 years and over'). A very high proportion of perpetrators of both DRH and non-DRH were native born. Little more than three quarters of DRHs involved male-male conflicts, in contrast to about half of non-DRHs ( $\chi^2 = 10.0$  (1);  $p \leq 0.01$ ). Furthermore, non-DRHs more often than DRHs involved lethal conflict between intimate partners (23 % vs. 13 %;  $\chi^2 = 7.7$  (1);  $p \leq 0.05$ ). Most DRH victims were strangers or known but not related to their perpetrator, while relationships between non-DRH victims and their perpetrators showed a higher degree of familial relatedness. As for the type of homicide, both Finnish DRHs and non-DRHs involved conflicts in a non-criminal setting, such as fights (65 % and 45 %, respectively).

TABLE 17  
**Drug-related and non-drug-related homicide perpetrator characteristics in Finland, 2014-15**

	Drug related		Non-drug related		Total	
	Number (total=83)	%	Number (total=87)	%	Number (total=170)	%
<i>Gender</i>						
Male	74	90	67	86	141	88
Female	8	10	11	14	19	12
Unknown	1	—	9	—	10	—
<i>Age (years)**</i>			78		160	
< 18	1	1	4	5	5	3
18-24	16	20	9	12	25	16
25-34	27	33	13	17	40	25
35-44	22	27	21	26	43	27
45-54	13	16	19	24	32	20
55-64	3	3	9	12	12	8
> 65	0	0	3	4	3	2
Unknown	1	—	9	—	10	—
<i>Country of birth</i>						
Finland	76	93	64	82	140	87
Abroad, Europe	2	2	7	9	9	6
Abroad, outside Europe	4	5	7	9	11	7
Unknown	1	—	9	—	10	—
<i>Gender: perpetrator-victim</i>						
Male-female	11	13	27	30	38	23
Female-male	6	7	10	12	16	10
Male-male**	63	77	46	54	109	64
Female-female	2	3	3	4	5	3
Unknown	1	—	1	—	2	—
<i>Relationship between perpetrator and victim (victim was perpetrator's ...)</i>						
Parent	1	1	5	6	6	4
Child	2	2	7	8	9	5
Brother/sister	1	1	2	2	3	2
(Ex)husband/wife (including same sex)	12	15	20	23	32	19
Other family	0	0	5	6	5	3

Friend or acquaintance	36	44	17	20	53	31
Employer/employee/colleague	0	0	3	4	3	2
Neighbour	0	0	0	0	0	0
Drug customer	0	0	0	0	0	0
Drug dealer	0	0	0	0	0	0
Roommate (not family)	0	0	2	2	2	1
Other previously known	17	21	10	12	27	16
Stranger	13	16	15	17	28	17
Unknown	1	—	1	—	2	—
<i>Suicide</i>						
Suicide	2	2	7	9	9	6
Suicide attempt	3	4	5	6	8	5
No suicide or suicide attempt	77	94	66	85	143	89
Unknown	1	—	9	—	10	—
<i>Type of homicide</i>						
Partner killing*	11	13	20	23	31	19
Child killing (in family)	1	1	7	8	8	5
Other familial killing	3	4	9	11	12	6
Criminal milieu	5	6	2	2	7	4
Robbery killing: commercial business	0	0	0	0	0	0
Robbery killing: private home	1	1	1	1	2	1
Nightlife violence	2	2	3	4	5	3
Killing by a non-family member with a mental health disorder	4	5	4	5	8	5
Killing in other non-criminal milieu	53	65	39	45	92	55
Sexual killing	2	3	1	1	3	2
Other	0	0	0	0	0	0
Unknown	1	—	1	—	2	—

\* $p \leq 0.05$ ; \*\* $p \leq 0.01$ .

In the Netherlands (Table 18) DRHs and non-DRHs showed significant differences in gender. Females accounted for a lower proportion of perpetrators of DRHs than of non-DRHs ( $\chi^2 = 27.8(1)$ ;  $p \leq 0.001$ ). Seventy per cent of perpetrators of non-DRH were native born, compared with 41 % of DRH perpetrators ( $\chi^2 = 20.1(1)$ ;  $p \leq 0.001$ ). Furthermore, about 75 % of DRHs resulted from male-to-male conflict, while for non-DRHs this figure was just under half (45 %;  $\chi^2 = 28.1(1)$ ;  $p \leq 0.001$ ). Over half of the perpetrators of DRHs were not closely related to the victim, in only one out of ten cases were the perpetrator and victim strangers. In the case of non-DRHs, around half of incidents involved family members, and about one quarter of these were strangers to the victim. ( $\chi^2 = 6.6(1)$ ;  $p \leq 0.001$ ). Dutch DRHs mainly took place in the criminal milieu (65 %), while non-DRHs typically involved killing a partner (37 %) or killing by other in non-criminal setting (17 %).

TABLE 18  
**Drug-related and non-drug-related homicide perpetrator characteristics in the Netherlands, 2012-16**

	Drug related		Non-drug related		Total	
	Number (total=186)	%	Number (total=181)	%	Number (total=644)	%
<i>Gender***</i>						
Male	152	82	92	56	426	67
Female	34	18	73	44	211	33
Unknown	0	—	16	—	7	—
<i>Age (years)</i>						
< 18	5	3	17	10	47	7
18-24	21	11	17	10	67	10
25-34	55	30	31	19	145	23
35-44	41	21	35	22	137	23
45-54	33	18	31	19	115	18
55-64	14	8	12	7	51	8
> 65	17	9	22	13	69	11
Unknown	0	—	16	—	13	—
<i>Country of birth***</i>						
The Netherlands	53	41	73	70	220	58
Abroad, Europe	17	13	9	8	44	12
Abroad, outside Europe	60	46	22	22	116	30
Unknown	56	—	77	—	264	—
<i>Gender: perpetrator-victim</i>						
Male-female	26	20	77	45	185	34
Female-male	5	4	16	9	39	8
Male-male*	98	75	77	45	308	56
Female-female	2	1	3	1	12	2
Unknown	55	—	8	—	100	—
<i>Relationship between perpetrator and victim</i>					337	
Parent	9	6	7	11	26	8
Child	12	8	3	5	35	10
Brother/sister	2	1	1	2	7	2
(Ex)husband/wife (including same sex)	33	22	3	5	65	19
Other family	6	4	3	5	73	22
Friend or acquaintance	33	22	8	13	15	5
Sexual partner	3	2	8	13	20	6
Employer/employee/colleague	0	0	0	0	5	2
Neighbour	8	5	3	5	17	5
Drug customer	3	2	3	5	4	1
Drug dealer	3	2	3	5	4	1
Roommate (not family)	3	2	1	2	7	2
Other previously known	20	14	3	5	11	3
Stranger*	14	10	15	24	48	14
Unknown	37	—	120	—	307	—
<i>Suicide</i>						



Suicide	1	1	4	1	32	6
Suicide attempt	6	5	12	9	25	5
No suicide or suicide attempt	113	94	141	90	488	89
Unknown	66	—	24	—	99	—
<i>Type of homicide</i>						
Partner killing	11	6	60	37	135	23
Child killing (in family)	7	4	11	7	44	7
Other familial killing	8	4	20	12	54	9
Criminal milieu	115	65	10	6	141	24
Robbery killing: commercial business	1	1	0	0	5	1
Robbery killing: private home	10	6	7	4	33	6
Robbery killing: street robbery	0	0	0	0	6	1
Nightlife violence	2	1	1	1	10	2
Killing by a non-family member with a mental health disorder	8	4	9	6	28	5
Killing by other in non-criminal milieu	12	7	28	17	90	14
Sexual killing	2	1	3	2	11	2
Other	2	1	12	8	35	6
Unknown	8	—	20	—	42	—

\* $p \leq 0.05$ ; \*\*\* $p \leq 0.001$ . The numbers of drug-related and non-drug-related homicide do not add up to the total because of missing data.

In Sweden (Table 19), male perpetrators accounted for equal proportions of DRHs and non-DRHs. Perpetrators of Swedish DRHs were mostly aged between 18 and 34 years, and perpetrators of non-DRHs were typically 35 years and older. There was no apparent difference between DRH and non-DRH in the proportion of native-born perpetrators. DRHs in Sweden mostly resulted from male-male conflicts (80 %), while most non-DRHs resulted from male-female conflicts (57 %) and to a lesser extent male-male conflicts (36 %;  $\chi^2 = 25.0(1)$ ;  $p \leq 0.001$ ). More than 60 % of Swedish DRH perpetrators were a friend or acquaintance of the victim(s), compared with 22 % of perpetrators of non-DRHs. Non-DRH was more often committed by a current or former intimate partner than was DRH (42 % vs. 10 %;  $\chi^2 = 14.4(1)$ ;  $p \leq 0.001$ ). DRHs were typically homicides in the criminal milieu (43 %) or originated from conflicts in a non-criminal milieu (28 %), with only 7 % being intimate partner homicides. Non-DRHs more often entailed intimate partner homicide (36 %) and homicides in a non-criminal setting, which typically involved fights at home or in a nightlife setting (22 %;  $\chi^2 = 19.4(1)$ ;  $p \leq 0.001$ ).

TABLE 19  
Drug-related and non-drug-related homicide perpetrator characteristics in Sweden, 2013-14

	Drug related		Non-drug related		Total	
	Number (total=74)	%	Number (total=78)	%	Number (total=168)	%
<i>Gender</i>						
Male	58	93	61	92	119	93

Female	4	7	5	8	9	7
Unknown	12	—	12	—	40	—
<i>Age (years)</i>						
< 18	2	4	2	3	4	3
18-24	17	30	9	14	26	22
25-34	26	46	11	18	37	31
35-44	7	11	12	19	19	16
45-54	3	5	14	22	17	14
55-64	2	4	11	18	13	11
> 65	0	0	4	6	4	3
Unknown	17	—	15	—	48	—
<i>Country of birth</i>						
Sweden	25	54	27	60	52	57
Abroad, Europe	12	26	5	11	17	19
Abroad, outside Europe	9	20	13	29	22	24
Unknown	28	—	33	—	77	—
<i>Gender: perpetrator-victim</i>						
Male-female	8	13	39	57	47	36
Female-male	4	7	1	1	5	4
Male-male***	48	80	25	36	73	57
Female-female	0	0	4	6	4	3
Unknown	14	—	9	—	38	—
<i>Relationship between perpetrator and victim (victim was perpetrator's ...)</i>						
Parent	0	0	7	10	7	6
Child	3	6	5	8	8	7
Brother/sister	0	0	0	0	0	0
(Ex)husband/wife (including same sex)***	5	10	27	42	32	28
Other family	1	2	5	8	6	5
Friend or acquaintance	32	64	14	22	46	40
Employer/employee/coll eague	0	0	0	0	0	0
Neighbour	0	0	1	2	1	1
Roommate (not family)	0	0	2	3	2	2
Other previously known	0	0	0	0	0	0
Stranger	9	18	3	5	12	11
Unknown	24	—	14	—	54	—
<i>Suicide</i>						
Suicide	2	3	8	11	10	7
Suicide attempt	2	3	10	14	12	9
No suicide or suicide attempt	63	94	53	75	116	84
Unknown	7	—	7	—	30	—
<i>Type of homicide</i>					151	
Partner killing***	5	7	28	36	33	22
Child killing (in family)	0	0	8	10	8	5
Other familial killing	4	5	8	10	12	8

Criminal milieu	31	43	2	3	33	22
Robbery killing: commercial business	1	1	1	1	2	1
Robbery killing: private home	4	5	1	1	5	3
Nightlife violence	3	4	5	7	8	5
Killing by a non-family member with a mental health disorder	5	7	6	9	11	7
Other in non-criminal milieu	21	28	17	22	38	25
Sexual killing	0	0	1	1	1	1
Other	0	0	0	0	0	0
Unknown	0	—	1	—	17	—

\*\*\* $p \leq 0.001$ .

## 4. Discussion and conclusion

This pilot study sought to assess the feasibility of expanding the EHM with variables derived from Goldstein's (1985) tripartite framework on DRHs. The ultimate goal was to examine to the extent to which expanding the EHM would allow additional analyses of the nature and scope of DRH in Europe to be carried out, which would improve the monitoring of DRH. This study is a first empirical assessment on EHM data in three participating countries: Finland, the Netherlands and Sweden. It provides an initial picture on the nature, scope and characteristics of DRH incidents, victims and perpetrators.

### Discussion of findings

#### Feasibility of adding drug-related variables to the EHM

The structure of the EHM is well suited to the addition of variables to monitor DRH, as it allows detailed information to be added at the individual incident, victim and perpetrator levels. For most homicide incidents, we were able to determine whether and how the case was drug related. This pilot study showed that the recording of DRHs for research/monitoring purposes is possible, even if it is a labour-intensive exercise. As these data are not included as standard in the EHM, in each participating country we had to revisit the original homicide case files. Data for the Nordic countries were fairly accessible, as the Finnish and Swedish national monitors are primarily based on police data. Homicide data from the Netherlands, in contrast, are based on a combination of media sources, online case files and criminal justice files, each of which had to be individually consulted to verify if and, if so, how a homicide was drug related. In contrast to the Finnish and Swedish police, the Dutch police do not record drug-related information in a standardised way. While some data and information are stored on file (separately from the main documentation), they are not necessarily processed into statistics or disclosed for research purposes. As a result, the number of missing data was higher for Dutch homicides than for Finnish and Swedish homicides. It is not uncommon for police homicide records to omit drug-related information, and this is observed in several European countries (de Bont et al., 2018). One way to overcome this challenge is to include in future EHM data collection drug-related variables at national level (in each participating country), which would enable accurate and adequate comparisons at the European level.

#### Scope and nature of drug-related homicide

Half of the homicides committed during the periods under examination were drug related. The relationship between homicide and drugs, however, differed in each of the participating countries. Finnish and Swedish DRH cases commonly included a psychopharmacological element, whereas Dutch homicides were typically systemic. In Sweden the pattern of DRHs was intermediate, with a small proportion of systemic homicides and a considerable proportion of psychopharmacological DRHs. In all three countries, economic-compulsive homicide was relatively uncommon compared with the other two DRH types. Moreover, the EHM allowed us to determine the overlap between the various DRH categories. The results showed that, in Finland and Sweden, most perpetrators who committed systemic and economic-compulsive homicide were under the influence of drugs.

#### Characteristics of drug-related homicide

In terms of the nature of DRH, the three countries differed considerably. In the Nordic countries, half of the DRH cases took place in a domestic setting. In the Netherlands, on the other hand, two thirds of DRHs took place in a public setting. These observations tie in with the predominant types of DRH: while psychopharmacological homicides, involving perpetrators under the influence of drugs, are more likely to take place in a private setting, systemic homicides, involving so-called rip-deals or conflicts over territory or drug markets, are more likely to take an 'assassination-style' form and, accordingly, take place in a public setting. As for the type of weapon used in the DRH, firearms and knives or other sharp objects were the most prevalent. Both victims and perpetrators of DRH were predominantly male and aged between 25 and 45 years. In the Netherlands and Sweden, about half of both victims and perpetrators of DRH were native born, while in Finland this proportion was

relatively high. DRH predominantly evolves from male-to-male conflicts and to a much lesser extent from male-female conflicts. Finally, in all three countries, only a small number of perpetrators of DRHs committed suicide after the homicide.

A closer look at the country level reveals that Finnish DRHs mostly took place in domestic settings or in other indoor but non-residential settings, including restaurants, bars and hotels. Knives and firearms were the weapons predominantly used. As the results show, the majority of Finnish DRHs were committed by perpetrators who were under the influence of drugs at the time — and usually in combination with alcohol. The predominance of alcohol in Finnish homicide is well known, and has been attributed to patterns of heavy drinking. In such contexts, homicides mostly evolve from arguments between heavily intoxicated individuals in nightlife or domestic settings (Bye, 2012; Lehti and Kivivuori, 2012). The high prevalence of psychopharmacological DRHs is accompanied by a relatively high prevalence of drug-induced deaths in Finland (mainly resulting from the use of opioids), suggesting countrywide problematic drug use (EMCDDA, 2018b). In terms of the victim-perpetrator relationship, Finnish perpetrators were mostly intimate partners, friends or acquaintances of the victim, or strangers, but not family members.

Moving to the Netherlands, the results show that, compared with the Nordic countries, DRH more often involved accomplices. This observation reflects the high prevalence of systemic homicides, which are closely associated with organised crime, which in turn is characterised by multiple perpetrators. DRHs in the Netherlands typically took place in public places, and mostly involved the use of firearms. The relatively high prevalence of systemic DRH can be attributed to the role of the Netherlands in drug production and trafficking. Van Gestel and Verhoeven (2017), based on qualitative assessment between April –November 2016, examined the context, motives and modus operandi of contract killings in the Netherlands. Drug market control and money emerged as key themes. Killings were identified to serve as an instrument for ‘compensation’; means of punishment, intimidation and asserting one’s position within the drug market; as a precautionary measure, to prevent one becoming a target themselves; or to silence witnesses.

The Netherlands has a large share of the European production of cannabis and synthetic drugs, predominantly ecstasy and amphetamine (Tops et al., 2018), and is an important transit point in the cocaine and heroin supply chain to Europe (EMCCDA, 2018c). Both Nordic countries, in contrast, are principally an end-point for imported drugs (EMCDDA, 2018b, 2018d). Given the importance of the Netherlands in drug production and trafficking, it is not surprising to find that most Dutch DRHs were systemic. The prevalence of systemic DRH was further reflected in the victim-perpetrator relationship, which was often one of acquaintances or strangers, but not family members. Moreover, even though the Netherlands has one of the lowest firearm ownership rates in Europe, firearms account for just over half of the known DRHs (van Dijk et al., 2014).

In Sweden, one third of all DRHs were committed in a public place or area, and one third in the victim’s home. As in Finland and the Netherlands, knives and firearms were the most commonly used weapons. Only a small proportion of DRHs in Sweden were systemic; the majority were psychopharmacological in nature. This finding was mirrored in the relationship between victim and perpetrator as most DRHs in Sweden involved friends or acquaintances or intimate partners; they were less likely to involve strangers.

### **Characteristics of drug-related homicide compared with non-drug-related homicide**

The EHM allowed the comparison of DRH with cases that were not classified as being related to drugs. Although several cross-country differences could be observed, the findings generally indicated that DRHs more often involved multiple perpetrators, were more likely to take place in an urban area and were more often committed in a public setting than homicides that were not related to drugs. Furthermore, the results showed that firearms were frequently used in DRHs and were used to a lesser extent in non-DRHs. In the Nordic countries perpetrators of DRHs were either friends/acquaintances or strangers of their victims, whereas non-DRHs were mostly family related or

involved current or estranged intimate partners. In all three countries, perpetrators of non-DRHs committed (or attempted) suicide more frequently than perpetrators of DRHs.

Assessment of homicide characteristics in the three countries studied showed that Finnish DRHs occurred mostly in private settings or bars, as did non-DRHs, whereas, in the Netherlands and Sweden, DRHs significantly more often took place in a public setting, while most non-DRHs took place in a domestic setting. In the Nordic countries, victims and perpetrators of both DRH and non-DRH were typically male, but those involved in DRHs tended younger than those involved in non-DRHs. In the Netherlands, however, perpetrators of DRH were more often male than perpetrators of non-DRH. Most DRHs originated from male-male conflicts, while non-DRHs tended to be relatively more male-female conflicts. This is in line with a large body of evidence that killings within the domestic setting mostly involve women as victims (Liem et al., 2017). Killings that take place in non-domestic settings are dominated by male-male homicides (UNODC, 2015).

### **Looking ahead: shortcomings and steps forward**

This study provides a first overview of the nature and scope of DRH in Europe using a validated coding scheme. Yet, its design is not without limitations. The main limitations are the lack of data sources available and missing data on the drug-related components.

The availability of data sources and the level of detail available from these data sources differed among the participating countries. Not all countries had access to data of similar quality to enable them to include the additional drug-related variables in the EHM. For example, the available Dutch sources did not provide complete coverage that would enable the type of DRH to be determined in all cases, resulting in it being unknown if and, if so, to what extent a homicide was drug related in a relatively high proportion of cases. Similarly, adequate information was often lacking on the specific type, legality and quantity of the drugs taken by both victims and perpetrators. Finnish and Swedish (police) data sources, however, appeared to contain more information than Dutch sources on whether the homicide perpetrator or victim was a drug user or was under the influence of drugs (de Bont and Liem, 2017a). Data in all countries were able to cover economic-compulsive homicides (i.e. whether the perpetrator attempted to steal money, goods or drugs and/or what type of drugs they attempted to obtain) as well as systemic homicides. On the downside, systemic homicides are by nature difficult to solve — because of the unknown relationship between victim and perpetrator, and the facts that they are committed with firearms and often do not involve forthcoming witnesses (Braga et al., 2018; Liem et al., 2018; Pastia et al., 2016; Rydberg and Pizarro, 2014; Wellford et al., 1999). Hence, this type of homicide is associated with a relatively high proportion of unknown perpetrators, with the result that the underlying motives and contributing factors cannot be readily determined.

Furthermore, as reflected in the results, the more detailed the unit of analysis, the greater volume of missing data. For example, a considerable number of drug-specific homicide data were missing — particularly in unsolved cases. One response may be to include in the analysis only complete cases — and exclude cases with missing data. However, this approach results in considerable loss of data, and — given that data will not be missing at random — may result in a biased sample. For this reason a better option is to take into consideration the imputation of missing data, using multiple imputation techniques (Sterne et al., 2009), generating pooled estimates. To overcome the limitations of this study, future research could involve a triangulation of sources to obtain more detailed information on DRHs. Efforts could also be developed to incorporate tactical intelligence (such as blood tests) that is available at the police level, including reports on the use of alcohol and drugs at the time of offending. Furthermore, autopsy reports could shed more light on the victims' use of drugs and alcohol. In addition, and bearing in mind that in the Nordic countries homicide data are directly derived from police records, it is important to encourage and support the police in recording drug-related variables from the earliest stages of a homicide discovery. Obtaining, coding and analysing this information would allow a close examination of DRHs against the background of other drug use indicators (EMCDDA, 2017).

Future projects may also include specific trend analyses in DRH, assessing longer time periods. For example, anecdotal evidence suggests that Dutch systemic homicide in particular, and Dutch organised crime in general, has become more brutal over the years. Recent observations indicate that this dynamic could be explained by highly fragmented, occasional criminal networks (rather than the classic hierarchical criminal network structure), involving more inexperienced young men (rather than 'professional' hitmen) as perpetrators (Stoker and Thijssen, 2018; Voskuil, 2018). What further characterises these cases is the use of highly lethal automatic weapons, and the relatively reckless way in which homicides are committed — resulting in bystanders being killed or children witnessing their parents' homicide, as well as several cases of mistaken identity. Another recent observation that warrants additional research is the increase in the use of explosives and hand grenades, specifically in gang-related attacks across north-western Europe, including Sweden and the Netherlands (Barry and Anderson, 2018; Dalton, 2018; Pieters, 2018). Swedish police have raised concerns because the number of incidents of detonation of hand grenades nearly tripled over the period of this study, from 10 in 2015 to 27 in 2016. It has been suggested that this increase is associated with the availability of explosives, including grenades, from the Balkans (Hustad, 2018). Furthermore, a direct or indirect link to the rise in immigration has been hypothesised (Barry and Andersen, 2018), although this remains to be tested. Again, these examples are based on anecdotal data. The systematic, longer-term monitoring of DRH at a European level could allow a data-driven assessment of these developments.

### Steps forward

One way to overcome the hampered registration of DRHs is to make use of already existing data collection efforts. On a global level, the International Classification of Crime for Statistical Purposes (ICCS) constitutes the standard measurement for crime. The ICCS is coordinated by the United Nations Office on Drugs and Crime (UNODC) and was updated to meet requirements at EU-Member State level. The ICCS includes additional aggregating/disaggregating variables, including victim and perpetrator characteristics, modus operandi and motive (UNODC, 2015). The 2017 version of the United Nations Survey of Crime Trends and Operations of Criminal Justice Systems questionnaire (updated to the latest ICCS standard) collects aggregated numbers for each year on a variety of variables covering event, perpetrator and victim characteristics (of which some are drug related, such as type of homicide, intoxication by drugs), resulting in a cross-national database of aggregated data. Exploring the options to include variables covering the full scope of DRH in this framework might greatly increase the monitoring potential of DRH data. Nevertheless, monitoring a phenomenon based on ICCS aggregated data is not without its limitations, as the data are presented only in aggregate form, thereby not allowing for case-by-case analyses.

At the European level, current uniform homicide data collection efforts are bundled into the EHM. The EHM collects country-by-country individual-level homicide data. Moving forward, the inclusion of DRH variables in existing EHM data collection efforts could add much value, by making possible in-depth analyses of DRHs. In terms of future research on DRHs, the EHM framework allows the following:

- a) The **temporal scope** could be broadened, i.e. the number of years for which data are collected can be increased. Expanding the EHM's temporal scope to a longer time period (5+ years), including the DRH variables added for the purpose of this pilot study, may allow an examination of the trends in subtypes of DRH over time.
- b) The **geographical scope** of analysis could be broadened, i.e. the number of countries for which detailed DRH data could be obtained could be expanded. Beyond the countries participating in this pilot study (Finland, the Netherlands and Sweden) are countries that are familiar with the EHM, and have national systems in place that are EHM compatible. These include Estonia, Scotland, Denmark and Switzerland.
- c) The analysis could be more **focused**, zooming in on city level. Making cities units of analysis allows more in-depth research into a specific setting, where registration, and context, is similar within the judicial and administrative region. While not hampered by diverging context information, this would enable other variables affecting the nature and scope of drug-related

homicide to be examined. Similarly, the information could be filtered by type of DRH to analyse differences that may exist between psychopharmacological, economic-compulsive and systemic DRH.

- d) There could be continuous, **year-by-year monitoring** of DRHs in each of the EHM countries. To enable such monitoring, a framework structure for annual data collection, analysis and reporting could be set up. In its current form, all data collection efforts occur on a voluntary basis by each of the participating countries. In the case of structural monitoring, time-consuming data collection endeavours in each of the countries (the pilot countries, and depending on the size of the framework, other countries) may be made possible with an annual fixed sum to hire a part-time mid-level researcher.

One or a combination of the outlined projects could provide a solid, data-driven basis to inform adequate drug-related policy responses throughout Europe.

## Conclusion

The EHM allowed us to collect and analyse data and conduct detailed comparative analyses on the nature and degree of DRH in three European countries. This pilot study is the first of its kind to give a detailed overview of the similarities and differences in DRH in three countries in western and northern Europe over multiple years. Our overarching aim was to examine whether the EHM was able to capture the role of drugs in European homicides in a reliable way. In spite of limitations regarding data availability, and the level of detail captured in consulted data sources, we have succeeded in creating a first empirical pilot study that provides a detailed overview of characteristics associated with DRH. Our data collection efforts pave the way to future endeavours. The monitoring of DRHs in Europe will greatly benefit from having these additional variables assessed structurally. The EHM, in summary, has great potential to meet this need.



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