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From detection to sentencing: a homicide case flow analysis of the Dutch criminal justice system

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ABSTRACT

Homicide engenders broad moral concerns in society, and its aftermath can be understood as a barometer for criminal justice policy. Of all homicides committed, however, only some lead to arrest, to prosecution and ultimately to conviction in court. So far, no study has assessed the entire flow of homicide cases through the criminal justice system based on a nationwide sample. This study seeks to fill this empirical void by describing the entire flow of homicide cases and assessing the size of outflow at each stage of the criminal justice funnel in the Netherlands for a 20-year period. Our analysis highlights two main findings: First, the vast majority of suspects first identified by the police are ultimately sentenced for a homicide. Second, even in a country with low homicide rates and high rule of law indices, selection takes place at all stages of the criminal justice funnel. Whilst outflow mostly centres around exceptional clearance and legal factors, future work should assess the extent to which extra-legal characteristics play a role in crimes that are being investigated as potential homicides.

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Introduction

There is an international recognition that each country needs to (judicially) protect its citizens' fundamental rights, such as the right to life. More specifically, it is believed to be the core responsibility of each country to bring the perpetrators of homicide to justice (UNODC 2014). For this purpose, an effective criminal justice system must exist, which is considered to be one that does rigorous investigation of a crime, one that offers a timely prosecution and reaches an impartial verdict. Together, they are necessary conditions for upholding the rule of law, as well as for giving justice to the victims.

However, a criminal justice system involves a successive funnelling process in which selectivity takes place at all stages ((Farrington and Jolliffe 2005), and, for a detailed discussion, see Liem *et al.* (2020)). Of all crimes committed, only some are reported to the police. Of all crimes recorded, only some lead to detection and the arrest of an offender, and to a conviction in court. Of all offenders found guilty in court, only some are sentenced to custody, receiving sentences of widely different lengths (Farrington and Jolliffe 2005). The outflow of cases in this process may ultimately lead to a population that becomes less representative of the total offender population throughout the criminal justice funnel (Charette and van Koppen 2016).

It can be problematic if the outcome of the flow process of homicide cases leads to a biased sample: First, surviving family members and innocent suspects alike may feel treated unfairly if

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certain characteristics increase the likelihood that a case will not be investigated further. Second, the general population may feel disillusioned if too many cases are dropped during the process. A substantial outflow of cases may point to the lack of willingness or inability of the criminal justice system to practice justice. Finally, the perception of an unfair outflow of cases and perpetrators from the criminal justice system can undermine the legitimacy of the entire justice system (Tyler 2007). Ultimately, a criminal justice system characterised by high impunity rates can lead to less compliance, and facilitate (violent) crime (Paternoster *et al.* 1997) – where citizens may resort to violence to settle their disputes, so that homicide comes to fill some of the void left in the absence of legal intervention (Cooney 1997, Abt 2019).

A better understanding of criminal justice processes enables people to reconcile their perceived and actual inequities in the system. Information about the homicide flow could even increase support for the criminal justice system. In addition, a detailed analysis of the criminal justice homicide flow can help to improve the system, highlighting potential pitfalls and challenges within the process, which can be tackled by allocating more resources in specific stages or better training for specific criminal justice actors. Taken together, so far it is not known what proportion of cases that come to the attention of the police as potential homicides eventually result in sentencing. This study seeks to fill this vacuum by providing a first description of the entire flow of homicide cases through the system in the Netherlands, and assessing outflow at each stage of the criminal justice funnel.

Background

When dealing with a homicide case, in most jurisdictions the criminal justice funnel starts with a suspicious death becoming known to the police (Liem and Eisner 2020, Liem *et al.* 2020). When autopsy confirms or suggests a criminal act (Timmermans 2007), the case then goes through a series of decision-making stages, including clearance, arrest, prosecution, and sentencing. At each step of the funnel, cases may flow out.

From a theoretical point of view, selectivity in the funnel can be understood through Black's (1976) theory on the behaviour of law. It builds on the premise that society is stratified, and that criminal justice actors use discretion in processing a case, that includes victim preferencing and victim devaluation. Black holds that victims of lower social status receive 'less law' than victims of higher status, which results in a lower likelihood of police attention, arrest, or conviction, and a lower likelihood of a severe sentence for the perpetrator (Pastia *et al.* 2017). This theory has been extended from individual factors to neighbourhood and group factors, arguing that depending on their socio-demographic constellations, neighbourhoods can receive more or less 'law' (Borg and Parker 2001). Based on Black's (1976) framework, homicides involving old, male, ethnic majority victims in affluent areas are more likely to make it through the entire funnel, whilst homicides involving young, female, ethnic minority victims are more likely to remain unsolved, be associated with lower conviction rates, and lower sentences (Baumer *et al.* 2000, Regoeczi and Jarvis 2013, Pastia *et al.* 2017, Ribeiro and Diniz 2020). On the other side of the spectrum, Gottfredson and Hindelang (1979) hold that non-discretionary factors determine the likelihood of homicide cases to drop out of the process. From this point of view, the visibility and importance of homicide cause police to follow up on all homicides, irrespective of victim or location (Puckett and Lundman 2003). Rather, extra-legal factors are thought to determine case outcome, including caseload pressure and characteristics of the crime itself (Borg and Parker 2001).

In terms of empirical research, prior work has mostly focused on the likelihood of a case to proceed to just the next stage in the funnel (Addington 2007), the most studied stage involving homicide clearance (e.g. Borg and Parker 2001, Puckett and Lundman 2003, Rydberg and Pizarro 2014, Pastia *et al.* 2017, Petersen 2017, Braga *et al.* 2018, Ribeiro and Diniz 2020), i.e. a homicide being solved with the arrest or identification of a suspect (Liem *et al.* 2018). To a lesser extent, studies have examined later stages of the criminal justice funnel, including homicide prosecution practices (Bertz 1994, Cerulli 2004, Baumer and Martin 2013, Pizarro *et al.* 2020) and homicide

sentencing (Gross and Mauro 1984, Glaeser and Sacerdote 2003, Auerhahn 2007, Johnson *et al.* 2010, Baumer and Martin 2013, Petersen 2017). Further, in this relatively young research tradition, studies have mostly focused on factors determining the likelihood of cases proceeding to the next step in the funnel (for an overview, see Liem *et al.* 2020) and with few exceptions (Sturup *et al.* 2015, Granath and Sturup 2018, Liem *et al.* 2018, Brookman *et al.* 2020, Ribeiro and Diniz 2020), the vast majority of studies have relied on US data. The focus on the US system is problematic because one may question to what extent US legal practices, as well as US-specific factors such as race, prevalence of firearm-perpetrated homicides, gang membership, an adversarial criminal justice system and – in terms of sentencing – capital punishment, apply to criminal justice practices in other parts of the world.

In spite of a recent surge in empirical studies using smaller samples or populations (e.g. Brookman *et al.* 2020, Ribeiro and Diniz 2020), so far, to the best of our knowledge, only one empirical study has been able to capture the entire flow of homicide cases through the system, based on three hundred firearm-homicide incidents in East Tennessee (Bertz 1994; for an overview, see Liem *et al.* 2020). Previous studies that have tried to map entire criminal justice flows have focused on non-lethal crimes instead, including rape (LaFree 1989) or child sexual abuse cases (Cheit and Goldschmidt 1997, Cross *et al.* 2003). This empirical void inhibits our understanding of the nature and scope of selectivity, as it remains unknown whether the reasons for case loss in one step are the same factors determining case outcome in another step.

In this contribution, we seek to overcome this knowledge gap by describing the entire flow of homicide cases through the system, and assessing the reasons for outflow at each stage of the criminal justice funnel in the Netherlands from 1997 to 2016. The Netherlands is a good starting point for an in-depth examination of the homicide flow for several reasons: First, the Netherlands is, in terms of its low homicide rate of 0.64 per 100,000 inhabitants, fairly representative for other Western democracies (Aarten *et al.* 2019, UNODC 2019). We therefore do not investigate a country with an extremely high homicide rate that could affect and be affected by the effectiveness of the criminal justice system. To put these figures in perspective, recent work on the homicide flow in Brazil, by Ribeiro and Diniz (2020) showed a homicide rate of 27 per 100,000 – with clearance rates of about 15 per cent (Sapori 2007).

Second, according to the Variety of Democracy Project (V-DEM) (Coppedge *et al.* 2019), the Netherlands is a stable and functioning democracy and is comparable to most other democratic countries in Western Europe and North America. Looking at the electoral democracy index, which measures civil liberties, freedom of association and the quality of fair elections, the Netherlands, like all Western European and North American countries (0.83 out of 1.0 in 2019), has a high score (0.83). The judicial system is also comparable, as the accessibility of the legal system is rated as high in the Netherlands (0.95 out of 1.0 in 2019) as in Western Europe and North America (0.94) (Coppedge *et al.* 2019). It is therefore unlikely that politics deliberately influence the criminal justice system. Third, we were able to access various sources from the Dutch law enforcement and judicial institutions for our nationwide data collection. This allows us to both triangulate data, as well as collect information at each stage so that every homicide case is followed through the criminal justice system.

In this study, we move past conventional approaches that merely rely on one step in the process, or that merely approach inclusion and exclusion as a dichotomous outcome. Assessing how many and why cases ‘drop out’ of the system may inform public policy strategies for prevention of case loss. By pinpointing exactly where case loss occurs in the criminal justice funnel, we may be able to lay the first foundations for future research on the reasons for drop-out, and ultimately, for evidence-based interventions to optimise case flow throughout the entire system.

Homicide cases in the Dutch criminal justice system

In the Netherlands, a death reported by the pathologist as suspicious becomes – in consultation with the public prosecutor – a homicide case that the police must investigate (KNMG 2016). Even though we do not have access to suspicious death data, it is worth noting that selection already takes place

at this stage of the process: Autopsies are only conducted when there is a suspicion of unnatural death (Bovenkerk and Hogewind 2004). Anecdotal evidence suggests that there are various reasons for medics to refrain from raising suspicions, such as medics' lack of training in recognising a homicide, loyalty to fellow medics who have concluded a natural death, or wanting to respect family members who oppose autopsy (Bovenkerk and Hogewind 2004). Such unidentified homicides may contribute to an undercount of police-recorded homicide.

When the autopsy does confirm a suspicious death, and the police determines homicidal violence and apprehends a suspect, it is the public prosecutor who decides whether the suspect should be charged and for what crime. In the case of homicide, prosecutors decide on the charge. The primary legal distinction between murder and manslaughter is that of premeditation, which is present in murder, yet absent in manslaughter. The public prosecutor builds a case file against the suspect and shares this with the defence and the court during the trial. He or she will also give a sentencing recommendation, after which the three judges have a two-week period to determine the final sentence. This sentence is appealable by both the prosecutor and the defence.

Dutch judges enjoy broad discretionary power in both the type and the severity of criminal punishment, as the Dutch system does not provide for minimum sentencing. There is no jury and the prosecutorial recommendation for sentencing is not legally binding for the judges, although it offers a useful anchoring point in judicial sentencing deliberations. If judges deviate from these recommendations, they are asked to motivate the reasons for their deviation (Tak 2008).

Prison sentences are the norm in homicide cases. There is no death penalty and non-life prison sentences are limited to 30 years for murder and fifteen years for manslaughter (Johnson *et al.* 2010).¹ In 2016, a total of 34 people were serving life imprisonment sentences for homicide in the Netherlands (Liem *et al.* 2016). If a perpetrator is deemed unaccountable or their criminal accountability is found to be (severely) diminished, judges can impose a treatment option (in the Netherlands referred to as TBS, *terbeschikkingstelling*), which constitutes a mandatory treatment provided in a special penal institute for the mentally ill. If the perpetrator is partially accountable for his/her crime, the TBS treatment can be combined with a prison sentence. Then, the perpetrator is periodically undergoing mental health assessment to determine whether and when he or she should be released. This term may be indeterminate, meaning that some perpetrators can spend the rest of their lives in this mental institution (Johnson *et al.* 2010).

Two notable changes occurred in the last decades that deserve closer attention: First, whilst the nationwide homicide rate has steadily decreased (Aarten *et al.* 2019), there has been a national increase in homicide sentence length (Nieuwbeerta and Van Wingerden 2006), as well as in the number of life sentences meted out (Hattum 2019). Another relevant shift that took place during our study period concerns implementations following a case known as the 'Schiedam Park Homicide', aimed at minimising tunnel vision among criminal justice actors. In June 2000, in the city of Schiedam, an 11-year-old boy and a 10-year-old girl were sexually abused in a park. The girl was murdered. In May 2001 the Rotterdam District Court sentenced a man to 18 years' imprisonment for these offences, to be followed by compulsory psychiatric treatment. The sentenced person denied any guilt, even though he had at first given a confession to the police. Only three years later, in 2004, it became clear that this constituted a wrongful conviction, mainly resulting from tunnel vision in the criminal justice agencies involved in the case. Another person proved to have abused the children and killed the girl (Salet and Terpstra 2013). As a result of this case, in 2006 a so-called 'critical review' protocol was implemented to prevent tunnel vision, by including contrarians ('devil's advocates') throughout the process, and by avoiding group think in complex criminal investigations. Although the entire criminal justice chain was advised to use contrarians, this became a compulsory element only for the police force in case of major crimes (Salet and Terpstra 2013). In terms of its implications for the flow of homicide cases through the system, we would thus expect relatively more cases and suspects to flow out of the funnel after the 2006 implementation of the critical review protocol: Suspects for whom, upon closer inspection, was insufficient proof to be prosecuted or sentenced.

Currently, it is not known what proportion of potential homicides that come to the attention of the police eventually result in imprisonment of the perpetrator. While Statistics Netherlands (see CBS Statline 2020) and the annual reports 'Crime and Law Enforcement' spearheaded by the Research and Documentation Centre (for more information see WODC 2020) publish some figures on the criminal justice flow, these figures reflect violent crimes in general, not homicide alone. Furthermore, figures are separately reported for each stage, so that it remains unclear to what extent outflow takes place. In this study, we aim to fill this vacuum by providing a first description of the complete flow of homicide cases through the criminal justice system, and assessing the reasons for outflow at each stage of the funnel.

Methodology

Data sources

In meeting this aim, we make use of the Dutch Homicide Monitor (DHM), a nationwide monitoring system that is compatible with the European Homicide Monitor (Granath *et al.* 2011, Liem *et al.* 2013). Perhaps surprisingly, in contrast to other Western countries, there is no nationwide police database that captures all homicide events, perpetrators and victims. Statistics Netherlands, the Dutch national statistical office, gathers basic information on victim cause of death, but does not include information on event and perpetrator characteristics. To fill this void, we started the Dutch Homicide Monitor (Liem and Aarten 2020). The DHM captures all media-reported and police-recorded homicides that have taken place in the Netherlands in the period 1992–2016. Since detailed information on the legal processing of homicide cases is available since 1997, we use that year as a cut-off point.

Data captured in the DHM stems from four main sources: (1) Media reports on homicide events, (2) digitalised police-recorded homicides, (3) digitalised public prosecution data and (4) hard-copy court files. Of the 3601 cases, 729 cases (20%) were based solely on media reports. Again, unfortunately, because of an absence of a nationwide police homicide database, in spite of manually searching through digitalised police records, we were not able to retrieve these cases. We were, however, successful in 2872 cases (80%), that were checked with/found in other sources. Those cases that were only based on media report constituted largely (63%) unsolved cases.

To map the size of each step in the homicide flow, and reasons for outflow in each following step, we use a combination of these sources. We identify four steps in the criminal justice funnel, starting at homicide detection (step 1), followed by homicide clearance (step 2), homicide prosecution (step 3) and ultimately, homicide sentencing (step 4).

Operationalisation

Step 1: homicide detection

We operationalised homicide detection as those cases the police labelled as homicides once the pathologist determined that the victim died under suspicious circumstances. To determine the detection of a homicide, we used a combination of two sources: Police data and media reports. Data stemming from the National Police were retrieved from the so-called 'Basis Voorziening Handhaving' (BVH), capturing time and location of the homicide, the name, gender and age of the victim (s) and (if known) the name, gender, and age of the suspect(s). Next, we supplemented police data with information stemming from media reports on homicide events. Using the homicide time and location as recorded by the police, these media reports were retrieved from three sources: (i) The Elsevier Annual Report on Homicides, a news magazine collecting and reporting on all homicides that took place in the preceding calendar year throughout the period 1997–2016 (Nieuwbeerta and Leistra 2003, 2007); (ii) Official press releases from the Dutch Associated Press and (iii) Media reports retrieved from the online newspaper database LexisNexis.

Step 2: homicide clearance

We relied on police data to determine homicide clearance. Following prior studies (Riedel and Boulahanis 2007, Liem *et al.* 2018), we considered a homicide to be cleared if the police arrested a suspect, or if the case was exceptionally cleared. The latter involved cases with a suspect or perpetrator who is known to the police, but for some reason could not be (lawfully) arrested. Examples include perpetrators who committed suicide prior to arrest, or perpetrators who left the country and therefore, the jurisdiction area (Riedel and Boulahanis 2007). Cases remained uncleared if the police did not arrest a suspect or if there was not enough information to identify an individual as a suspect.

Step 3: homicide prosecution

To assess whether homicide suspects identified by the police were prosecuted, we used public prosecution data that contained detailed information on all cases that were charged by the Public Prosecution office. This included the article of the Dutch Penal Code for which a perpetrator was charged, and their sentencing recommendation(s). Using these data, we were able to determine whether or not a suspect was charged with murder or manslaughter, or for another crime.

Step 4: homicide sentencing

For the final step in the homicide flow process, we used both digital public prosecution data and hard-copy court files to provide insight into the legal proceedings that followed, including the imposed sentence. Public prosecution data was used to determine whether perpetrators were sentenced for murder or manslaughter. Court files include the complete criminal proceedings of the case and, in various cases, forensic mental health reports. Sentencing outcomes were categorised into imprisonment alone, imprisonment combined with mandatory treatment (TBS), mandatory treatment (TBS) alone, admission to a psychiatric hospital, or acquittal. Following the Dutch Criminal Code (Article 77), juvenile perpetrators up to the age of 22 – depending on perpetrator and crime characteristics – could be sentenced to juvenile prison, or juvenile TBS. To equally compare homicide cases, rather than examining sentencing at the level of appeals, we focused our analysis on sentencing at the district court level.

Next, we will discuss reasons for outflow from the system. Please note that step one – homicide detection – is the only step that will be described on a *case* level: homicides that are detected but remain unsolved – in other words: without an identified perpetrator. The other three steps – clearance, prosecution and sentencing – will be described on a perpetrator level. The number of observations therefore increases in comparison to the first step (case centred), as several perpetrators enter the investigation proceedings at a certain point in time. Even though we are mindful that strictly speaking, individuals not yet convicted have the legal status of suspect, to facilitate reading, we will be referring to them as ‘perpetrators’.

Results

Homicide detection in the Netherlands

In the period 1997–2016, a total of 3601 homicides cases have become known to the police, involving a total of 3856 victims. In the year 1997, the highest number of homicide cases was reported ($n = 261$), followed by a steep decline to 145 in 2006. The period 2007–2016 is characterised by a small increase in the number of cases, followed by a drop to 102 cases annually in 2016 (see [Figure 1](#)).

In over half the cases (60.8%) a single perpetrator killed a single victim, and in about one out of five cases, a single victim was killed by multiple perpetrators. About half of all (exceptionally) cleared cases (3030 cases as will be discussed below)² involved a male principle perpetrator and a male principle victim, whilst about one third involved male-to-female violence. Just over half of the homicides were committed behind closed doors (53.7%) and nearly one out of four homicides occurred on the

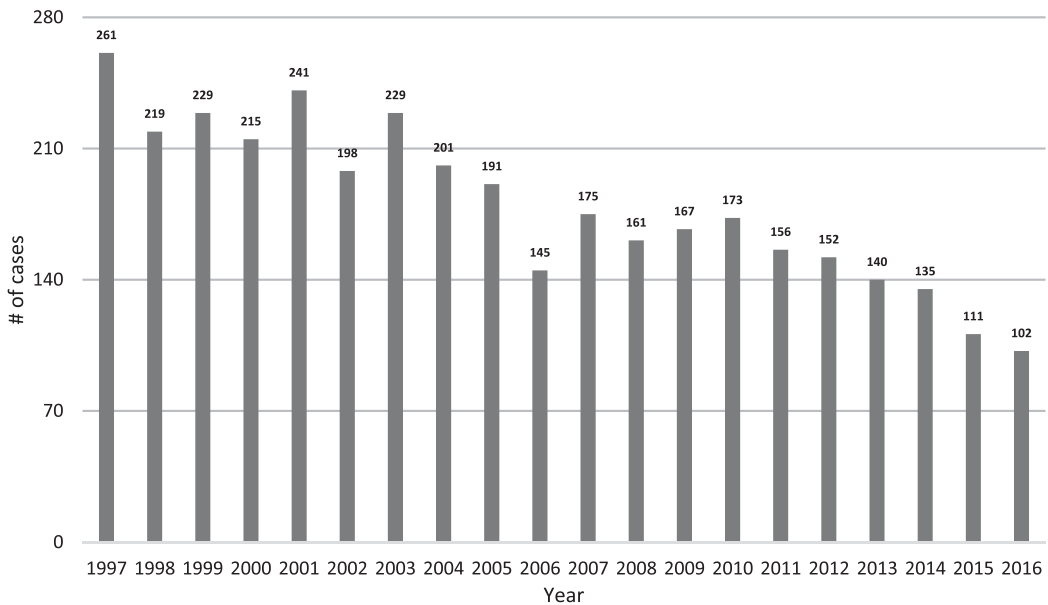


Figure 1. Homicide cases per year in the period 1997–2016.

street. In approximately one third of all cases the perpetrator(s) used a sharp object, while a firearm was used in about one third of the cases. The majority of homicides took place in an urban area (see Table 1).

From clearance to prosecution to sentencing

Of the 3601 homicide cases detected by the police, 3030 cases were cleared. In other words, in 84.2 per cent of the homicide cases, the police identified at least one suspect. In 79.3 per cent of these cases, the police arrested one perpetrator, while in the remaining 4.9 per cent, the cases were exceptionally cleared. In nearly three quarters of the cleared cases (73.1%) one perpetrator was arrested. In 15.5 per cent of the cleared cases, two perpetrators were arrested and in the remaining cleared cases, three or more perpetrators were arrested.

In 520 cases (14.4%) there was no perpetrator known to the police or there was not enough information to officially classify an individual as a suspect. Based on information retrieved from the media reports and police data, we were able to extract background characteristics of these cases. For example, while nearly half of the cases remained unclassified in terms of typology, based on the media and police information, we were able to identify nearly one third of these unclassified cases as criminal milieu cases. This percentage is much higher compared to the statistics presented in Table 1. Eight per cent of the unclassified cases were robbery homicides and 5 per cent were dispute homicides. Three per cent of the unclassified cases were sexual homicides and around 2 per cent were domestic homicides. All of the latter involved neonaticides, where a baby died and the mother remained unidentified. In 96.5 per cent of the cases there was a single victim and in half of these cases the victim was killed with a firearm. This number is much higher than the statistics presented in Table 1 and corresponds with the high number of criminal milieu homicides where a firearm was mainly used to kill the victim. Finally, while 31 per cent of the unclassified homicides took place behind closed doors, 28.3 per cent of the homicides occurred on the street or in public transportation. Again, this high number (compared to Table 1) corresponds with the high number of unclassified criminal milieu homicides, which mainly took place on the streets.

Table 1. Descriptive statistics of homicide cases in the Netherlands in the period 1997–2016 (case level).

	N	%
<i>N perpetrators – N victims</i>		
Single perpetrator – single victim	2186	60.8
Single perpetrator – multiple victims	113	3.1
Multiple perpetrators – single victim	749	20.8
Multiple perpetrators – multiple victims	72	2.0
Unknown perpetrator – single victim	465	12.9
Unknown perpetrator – multiple victims	16	0.4
<i>Gender perpetrators-victims^a</i>		
Male perpetrator – male victim	1667	55.1
Male perpetrator – female victim	906	29.9
Female perpetrator – male victim	207	6.8
Female perpetrator – female victim	86	2.8
Unknown gender of either perp and/or victim	164	5.4
<i>Type homicide</i>		
Domestic homicide	1130	31.5
Disputes	837	23.2
Criminal milieu	484	13.4
Robbery	274	7.6
Mental illness	105	2.9
Sexual	76	2.1
Other/unknown	695	19.3
<i>Locus delicti</i>		
House	1870	53.7
Street, public transportation	844	24.2
Shop, restaurant, hotel	199	5.7
Park, forest, recreational area	181	5.2
Workplace	113	3.2
Other	279	8.0
Unknown	115	
<i>Modus operandi</i>		
Firearm	1135	34.1
Sharp object	1140	34.2
Strangulation	408	12.2
Physical violence	273	8.2
Blunt object	188	5.6
Other	191	5.7
Unknown	266	
<i>Urban-rural</i>		
Urban	2666	74.3
Rural	923	25.7
Unknown	12	

^aThese numbers are solely based on (exceptionally) cleared cases.

In the remaining 51 cases (1.4%) we did not have enough information to match police data to our own data. In these cases we could therefore not determine the presence or absence of a perpetrator.

The identification of a perpetrator, combined with information from media and criminal justice files, also allowed us to classify the homicide according to victim-perpetrator relationship and motive. This resulted in about one third being classified as domestic homicides (31.5%), followed by disputes (i.e. where a conflict or dispute – such as a non-criminal business dispute – between the perpetrator or victim resulted in the homicide) (23.3%) (see Table 1). Homicides in the criminal milieu accounted for 13.4 per cent of all homicide cases and robbery homicides for 7.6 per cent. Homicides committed primarily out of severe mental illness and sexual homicides made up 2.9 and 2.1 per cent, respectively, of the total number of homicide cases in the Netherlands.

Next, we will examine the flow of 4382 perpetrators known to the police in the 3030 (exceptionally) cleared cases. Figure 2 portrays the flow of these perpetrators through the criminal justice system.

Of the 4382 perpetrators identified by the police, 4190 perpetrators were arrested. The remaining 192 perpetrators were involved in cases classified as exceptionally cleared and therefore flow out of

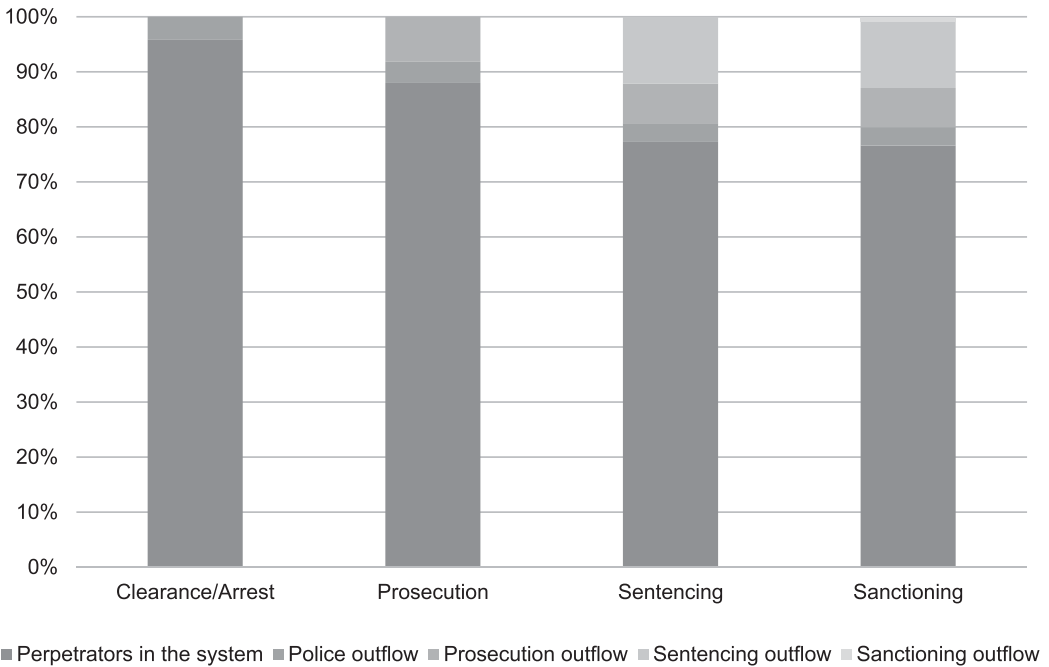


Figure 2. Flow through the Dutch criminal justice system.

the system. [Figure 3](#) details the reasons for outflow at this stage. The main reason for outflow was that the perpetrator committed suicide ($n = 152$, 79.2%), dying in a so-called homicide-suicide. Other reasons for outflow included the perpetrator fleeing to another country ($n = 13$, 6.8%), being arrested and tried abroad ($n = 12$, 6.3%), or being deceased before arrest ($n = 12$, 6.3%) or the perpetrator being killed by the police during arrest ($n = 3$, 1.6%). Keeping in mind the 2006 critical review reforms on the police level, we assessed whether the scope and nature of perpetrator outflow in the three years post-2006 (2007 through 2009) differed from the three years pre-2006 (2003–

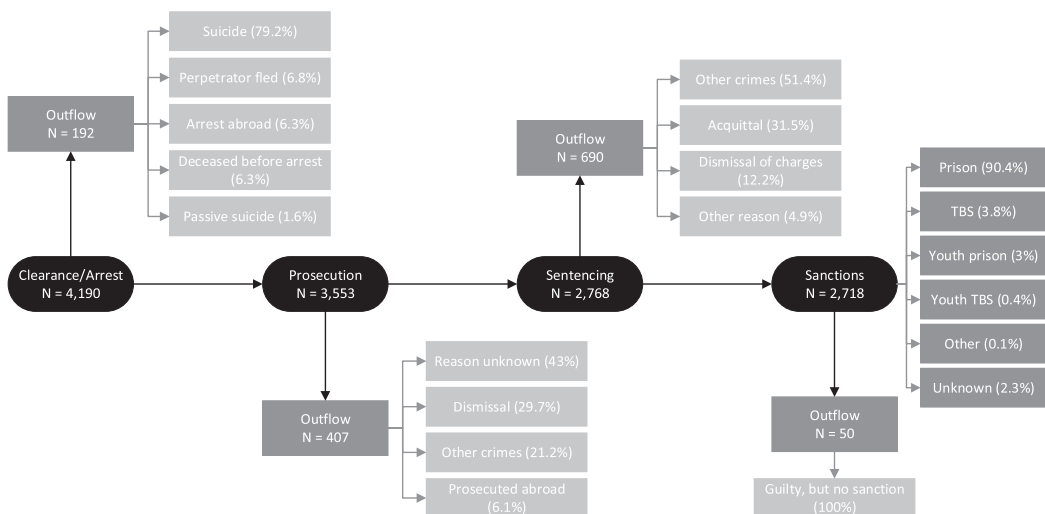


Figure 3. Reasons for outflow at the different stages in the Dutch criminal justice system.

2005). We found no significant differences in size, nor reasons for perpetrator outflow at the police level before and after the implemented changes, suggesting that the implementation of the critical review protocol did not increase the likelihood for suspects to be released, and/or freed from charges.

Of the 4190 perpetrators arrested by the police, 3553 suspects (84.8%) were prosecuted for murder or manslaughter. Twenty perpetrators still had their case under investigation when the data collection ended in 2017. Furthermore, despite the various data sources used to track each perpetrator/case through the criminal justice system, we could not find enough information for 2010 perpetrators to determine whether they were prosecuted or not.

In total, 407 perpetrators (9.7%) were not prosecuted and flowed out of the system. The main reason for outflow was perpetrators not being charged with murder or manslaughter (see Figure 3). Of the 407 perpetrators, nearly 21 percent ($n = 86$) were prosecuted for other crimes. Moreover, 121 perpetrators (29.7%) were dismissed, e.g. the prosecution office deciding not to prosecute due to a lack of evidence. A total of 25 perpetrators were prosecuted for their crimes abroad. And finally, 175 perpetrators flowed out of the system due to other (unknown) reasons, as they could not be retrieved in the prosecution data. We speculate that this could, first, be attributed to them not being prosecuted for homicide but for another crime, or, second, their case being dismissed – while in both cases remaining unreported.

Of the 3553 perpetrators prosecuted for murder or manslaughter, 2768 perpetrators (77.9%) were found guilty/sentenced for murder or manslaughter. For 15 perpetrators, their case was still under investigation in court when the data collection ended in 2017 and for 80 perpetrators, we were unable to determine whether they had been sentenced. The most important reason for perpetrator outflow ($n = 690$; 19.4%), however, was not being found guilty of murder or manslaughter. Of these 690 perpetrators, around half were found guilty of other crimes than murder or manslaughter ($n = 355$, 51.4%). These mainly included (aggravated) assault leading to death. Nearly one third of the 689 perpetrators ($n = 217$) were acquitted of murder or manslaughter charges and 12.2 per cent ($n = 84$) were dismissed of all criminal charges. In these cases perpetrators committed the offence, but either the offence or perpetrator was not considered punishable. Examples included perpetrators acting in self-defence. For 34 perpetrators (4.9%), their case was declared inadmissible by the judge because of grave prosecutorial misconduct.

Of the 2768 perpetrators found guilty for murder or manslaughter, 2718 perpetrators were sanctioned for murder or manslaughter. Of the 2718 perpetrators, 90.4 per cent were sentenced to prison or a combination of prison and TBS. Nearly four per cent ($n = 103$) were sentenced to TBS alone. In total, ninety-three juvenile perpetrators were either sentenced to juvenile prison with or without juvenile TBS ($n = 83$, 3%) or only juvenile TBS ($n = 10$, 0.4%). Four perpetrators (0.1%) were given another sentence. We were unable to determine the sanction for 63 perpetrators (2.3%) because these are old cases and therefore the data was not available or could not be retrieved anymore.

In total, 50 perpetrators (1.1%) flowed out the system at the sanction stage. These perpetrators admitted guilt, but were not sanctioned by the judges. In such cases, the court can determine that no sanction will be imposed due to the mental health of the offender or the circumstances in which the offence was committed (according to article 9a Dutch Penal Code). For example, an 80-year old mother killed her handicapped daughter to avoid her daughter being admitted to an institution when the mother would die. Her daughter was previously abused in an institution and the mother wanted to avoid this from happening again (<http://deeplink.rechtspraak.nl/uitspraak?id=ECLI:NL:RBAMS:2011:BU3929>).

Table 2 includes descriptive statistics of these perpetrators at the clearance/arrest, prosecution, sentencing and sanctioning stage. Please note that these numbers are based on perpetrators that stayed in the system. We wish to highlight four notable changes in these descriptives throughout the stages. First, there is a clear difference in the number of perpetrators and victims per case that are arrested and sentenced: More perpetrators who acted alone were sentenced and sanctioned for murder or manslaughter than perpetrators who co-offended. Group dynamics, and difficulties in

Table 2. Descriptive statistics at clearance, prosecution and sentencing stage the Netherlands in the period 1997–2016 (perpetrator level).

	Clearance/Arrest (N = 4190) N (%)	Prosecution (N = 3553) N (%)	Sentencing (N = 2768) N (%)	Sanctioning (N = 2718) N (%)
<i>N perpetrators – N victims</i>				
Single perp – single vic	2014 (48.1)	1892 (53.3)	1592 (57.5)	1568 (57.7)
Single perp – multiple vic	76 (1.8)	69 (1.9)	56 (2.0)	54 (2.0)
Multiple perp – single vic	1893 (45.2)	1428 (40.2)	1001 (36.2)	978 (36.0)
Multiple perp – multiple vic	207 (4.9)	164 (4.6)	119 (4.3)	118 (4.3)
<i>Gender perpetrators-victims</i>				
Male perp – male vic	2731 (65.2)	2297 (64.6)	1773 (64.1)	1742 (64.1)
Male perp – female vic	920 (22.0)	837 (23.6)	708 (25.6)	699 (25.7)
Female perp – male vic	319 (7.6)	259 (7.3)	184 (6.6)	178 (6.5)
Female perp – female vic	116 (2.8)	102 (2.9)	70 (2.5)	66 (2.4)
Unknown gender of perp and/or vic	104 (2.5)	58 (1.6)	33 (1.2)	33 (1.2)
<i>Type homicide</i>				
Domestic homicide	1128 (26.9)	1044 (29.4)	857 (31.0)	842 (31.0)
Disputes	1212 (28.9)	1025 (28.9)	794 (28.7)	778 (28.6)
Criminal milieu	637 (15.2)	499 (14.1)	374 (13.5)	371 (13.6)
Robbery	448 (10.7)	360 (10.1)	276 (10.0)	269 (9.9)
Mental illness	114 (2.7)	107 (3.0)	89 (3.2)	88 (3.2)
Sexual	65 (1.6)	58 (1.6)	52 (1.9)	51 (1.9)
Other/unknown	561 (13.4)	458 (12.9)	326 (11.8)	319 (11.8)
<i>Locus delicti</i>				
House	2110 (52.2)	1834 (53.4)	1453 (54.2)	1428 (54.2)
Street, public transportation	1006 (24.0)	804 (23.4)	626 (23.3)	614 (23.3)
Shop, restaurant, hotel	275 (6.6)	244 (7.1)	182 (6.8)	178 (6.8)
Park, forest, recreational area	226 (5.6)	187 (5.4)	149 (5.6)	147 (5.6)
Workplace	142 (3.5)	128 (3.7)	100 (3.7)	98 (3.7)
Other	284 (7.0)	238 (6.9)	173 (6.4)	169 (6.4)
Unknown	147	118	85	84
<i>Modus operandi</i>				
Firearm	1433 (35.4)	1156 (33.4)	889 (32.9)	875 (32.9)
Sharp object	1328 (32.8)	1182 (34.1)	1004 (37.1)	990 (37.2)
Strangulation	471 (11.6)	426 (12.3)	369 (13.6)	361 (13.6)
Physical violence	383 (9.4)	311 (9.0)	163 (6.0)	161 (6.1)
Blunt object	234 (5.8)	214 (6.2)	170 (6.3)	163 (6.1)
Other	204 (5.0)	173 (5.0)	111 (4.1)	108 (4.1)
Unknown	137	91	62	60
<i>Urban-rural</i>				
Urban	3068 (74.0)	2607 (73.7)	2022 (73.3)	1986 (73.3)
Rural	1080 (26.0)	932 (26.3)	736 (26.7)	722 (26.7)
Unknown	42	14	10	10

assessing individual involvement in a homicide, may explain why co-offenders were less likely to be prosecuted or convicted than solitary offenders. Second, Table 2 shows that more male perpetrators who killed a female victim were sentenced and sanctioned for homicide than female perpetrators who killed a male perpetrator. With regards to the type of homicide, we see an increase in perpetrators of domestic homicide in each of the phases of the criminal justice system. The number of perpetrators involved in criminal milieu homicides decreases throughout the four stages. No-snitching attitudes, lack of witness statements and other factors related to criminal homicides could explain why these homicides are often difficult to prosecute and lead to conviction, while domestic homicides are typically more straightforward to prosecute and convict.

Fourth and finally, with regards to the modus operandi, there are fewer perpetrators who used a firearm to kill the victim in the sentencing and sanctioning stage than in the arrest stage. The same observation can be made with physical violence. This could be ascribed to the lack of linkages between the firearm and the homicide. As for physical violence, the degree of intent and cause of death are arguably more difficult to determine than other modi operandi. This includes, for example, parental physical maltreatment, as an extreme result of which a child may die. There are

more perpetrators who used a sharp object or strangulation in the sentencing and sanctioning stage compared to the arrest stage. A similar logic can be applied to these types of *modus operandi*: These *modi* are often present at the crime scene (in the case of a sharp object) or easier to identify as the cause of death (in case of strangulation).

Discussion

How effective is a criminal justice system? The answer to this question is important to the people and their perception of fairness and to the state, as it is a measure of the ability of the state to act objectively and fairly. In the end, the perception of the criminal justice system influences how legitimately the state is perceived by its population. In the case of the aftermath of homicide, this means that justice systems make sure that all cases are investigated effectively, that cases are concluded in a timely manner, and that the outcomes of cases are not biased against certain groups of victims or perpetrators (Liem and Eisner 2020). In this contribution, we sought to describe the entire flow of homicide cases through the system based on nationwide data. With this study, we intend to make a first step in identifying gaps within the criminal justice system. Based on a national sample covering homicides in two decades, we described outflow at each stage of the criminal justice funnel in the Netherlands.

Our descriptive analysis highlights two main findings: First, most perpetrators does not flow out of the system. Once identified as a perpetrator by the police, 62 per cent of all perpetrators are sanctioned for homicide. The outflow, altogether, is about 31 per cent, and the remaining 7 per cent include unknowns (see Figure 2). We can only speculate on the reasons for this finding, but it is very likely that these explanations are related to the conditions that arise from our case selection. Recently, based on a large sample of homicides in Brazil, Ribeiro and Diniz (2020), showed that homicides between people who knew each other took less time to be cleared than homicides between unknown individuals. The fact that a large proportion of homicides in the Netherlands occur between family members, friends or acquaintances (Aarten *et al.* 2019) can provide an explanation for a relatively low degree of outflow. In addition, since most homicides occur behind closed doors, it can be argued that evidence to convict an offender is more easily found than when homicides occur on the streets.

Further, the Netherlands is a typical case for a democratic European country when considering the homicide rate and the accessibility and fairness of the legal system (Coppedge *et al.* 2019). One may argue that countries with a higher homicide rate and a less institutionalised justice system experience a much higher outflow. For example, police could arrest many more people based on incomplete evidence, which increases the likelihood that a larger number of perpetrators will outflow during the investigation process. Also, high homicide rates may result in overburdening the criminal justice system, potentially leading to a higher outflow because cases cannot be followed up on, in spite of the identification of a suspect. As the Netherlands has witnessed a homicide drop in the earlier years of analyses, we could argue that the criminal justice system has had more resources to clear the homicide cases – since investigation powers have remained unchanged (Boone *et al.* 2020).

One may also interpret the relatively low outflow in a rather skeptical way, arguing that once the police identify a suspect, this suspect gets stuck in the system due to investigator bias. Such bias is characterised by focusing on one suspect or one investigative approach, selecting and filtering information and evidence, while ignoring or suppressing information and evidence that could lead to another suspect (Salet and Terpstra 2013). Prior studies have further shown that tunnel vision may originate in cases with innocent suspects, where factors such as suspect's race, age, criminal history, relationship to the victim and cognitive/mental status were found to be associated with suspect innocence (Kinber *et al.* 2018). From this perspective, low outflow rates in the criminal justice process imply that such investigator bias – in extreme cases leading to tunnel vision – is widespread. Prior miscarriages of justice in the Netherlands (De Roos and Nijboer 2011) show that we

cannot rule out this factor completely, although our initial findings assessing the years prior to the implementation of the police critical review process, and the years following implementation, did not reveal a difference in outflow. Future studies may test this assumption empirically, by incorporating case decisions by higher courts, including cases that were dismissed as a result of such investigator bias.

Second, our findings indicate that even in a country with low homicide rates and high rule of law indices, at all stages of the criminal justice funnel, selection takes place. Reasons for outflow mostly centre around exceptional clearance (death of the perpetrator by suicide, suicide-by-cop or otherwise, or the perpetrator staying abroad). Here, perpetrator suicide typically takes the form of a so-called homicide-suicide, in which the suicide almost directly follows the homicide (Liem 2010). In the Netherlands, such cases amount to 4 per cent of all homicides annually, and mostly take place within the family sphere (Liem *et al.* 2009). Although some suicides following homicides may be triggered by a fear of judicial consequences (arrest, imprisonment), previous studies show that homicide-suicides are often premeditated (Rouchy *et al.* 2020).

Further, even though findings show that legal factors (prosecution and conviction of a lesser crime, or a dismissal or acquittal of the homicide charges) play a key role in selection in the first stages, we cannot rule out potential prejudices in the Dutch criminal justice system. Bias may be related to (i) deaths that are being investigated as possible homicides or (ii) the persons identified as suspects. Prior research on homicide clearance, for instance, suggests that homicides involving female victims with an ethnic majority background are more likely to be solved than cases involving male ethnic minority victims (Liem *et al.* 2018). Future studies should assess whether this bias may be a reflection of the criminal justice system and its actors, or whether these characteristics are associated with homicides that are generally hard to solve, i.e. homicides occurring in the criminal milieu (Welford and Cronin 1999, Jiao 2007, Rydberg and Pizarro 2014, Sturup *et al.* 2015, Pastia *et al.* 2017, Liem *et al.* 2018). Also, future work should examine to what extent this bias may operate in other steps of the criminal justice system.

Overall, results show that the clearance rate (84%) in the studied period is fairly high – although given a crime as serious as homicide, far from perfect, especially compared to other European countries such as Switzerland and Finland, that have shown clearance rates of 95 per cent and higher (Liem *et al.* 2018). While the study focuses on the Dutch system, evidence from other European democracies is needed to validate our findings. Further, prior research, largely based on Black's ideas (1976) on the behaviour of law, suggests that specific extralegal factors that may determine case outcome include gender, ethnicity, age, offending specialisation (Charette and van Koppen 2016), as well as victim precipitation and victim criminal involvement (Pizarro *et al.* 2020). As this contribution provides a first description of the flow of homicides through the system, in our future work, we would like to investigate the extent to which both discretionary and non-discretionary factors influence case loss at each step of the funnel in the future. Insight in these factors is important for unwarranted disparity harms the legitimacy of the criminal justice system.

Even though this is the first study to empirically assess the flow of homicide cases through various stages of the criminal justice system based on a nationwide sample, this study is not without limitations. First of all, we started our analyses from the point at which the police record a suspicious death as a homicide. This leaves a hypothetically important empirical vacuum, as we have been unable to map the reasons why some suspicious deaths which, upon discovery, were thought to be homicides, yet later classified as an accidental death, natural death, or a suicide instead (Neuilly *et al.* 2006, Timmermans 2007). A recent qualitative enquiry by Brookman and colleagues, for example, showed that actors' interpretations and decisions, particularly in the initial stages of the homicide investigation process that involve establishing the cause of death and mode of death, can lead to some cases that fail to be reported to the police, or fail to progress to the stage of investigation or charge (Brookman *et al.* 2020). Prior research has further shown that certain types of deaths are more susceptible than others to misinterpretation, such as homicide

of new-born children (Liem and Koenraadt 2018), older adults, and vulnerable victims (such as drug addicts, sex workers or homeless people) (Brookman and Nolan 2006, Quinet 2007).

Further, the total number of homicides may present an undercount, as long-term missing persons are excluded from the official statistics because no body was found. In addition, deaths resulting from police lethal use of force and/or deaths resulting from resisting police arrest are typically not included under the legal definition of homicide (Liem *et al.* 2020), and as a result may not be included in our dataset. Such differential classifications may not only contribute to a dark figure in overall homicide rates, but may also result in a biased registration of official homicide counts. Homicide, from a sociological constructivist point of view, constitutes a result of collective constructions: a result of consecutive administrative and discretionary decisions to classify a homicide as such (Bovenkerk and Hogewind 2004). Future research should recognise this discretionary process by gathering pre-police data on suspicious deaths, and following these cases not only through the criminal justice system, but expanding its scope to include the public health system, too. In addition to quantitative overviews, qualitative and ethnographic approaches should be used to further shed light on the collective and social nature of the homicide investigation and how they can explain whether and how homicide cases move from one stage to the next (Brookman *et al.* 2020). In such assessments, it will become increasingly important to better understand the role that technological advancements, surveillance data, and digital evidence play in identifying and investigating homicides (Liem and Eisner 2020).

Second, in this study we have approached homicide clearance, prosecution and sentencing as concrete endpoints, rather than assessing the time it takes for a homicide case to flow through the system. Leaving out this information may inhibit our understanding of the entire case flow, as previous research suggests time being a crucial factor in determining case outcome (Addington 2007, Ribeiro and Diniz 2020). Cases become more difficult to solve the more time passes without an arrest. Offenders have long fled the scene, witnesses have forgotten information, and physical evidence becomes tainted (Regoeczi *et al.* 2008). Future studies should aim to overcome only applying a categorical approach to case outcome, and consider the crucial role that time may play in case outcome. Similarly, as our data spans over two decades, future work may take a closer look at possible changes of outflow over time, and how this may relate to changes in the number of homicides, changes in the handling of cases at various stages of the criminal justice process, and changes in sentencing practices (see Boone *et al.* 2020).

Finally, in 20 per cent of the cases we could only rely on newspaper reports, as we were unable to retrieve these cases from the digitalised police records. This can largely be ascribed to the lack of a uniform homicide reporting system. Much can be learned from other Western countries that have well-developed monitoring systems in place, that include the United States National Violent Death Reporting System (NVDRS), FBI's Supplementary Homicide Reports (SHR), Australia's National Homicide monitoring Program (NHMP) or England and Wales' Home Office Homicide Index. Ultimately, the initial recording, by health or police authorities, of all cases that may be homicides constitutes the basis for all further actions taken in the system (Liem and Eisner 2020).

Notwithstanding these limitations, and in the absence of a nationwide reporting system, we were able to validate the majority of homicide cases with various sources. For example, prosecution data did not only allow us to determine which suspects were prosecuted for murder or manslaughter, it also gave us insight into homicide cases that the police had falsely classified as another crime. With the introduction of the Dutch Homicide Monitor (DHM) (Liem and Aarten 2020), we add to the growing research in the field of homicide investigations with a more detailed analysis of the functioning of criminal justice systems. This is the first study to map the entire flow of homicide cases through the criminal justice system, describing reasons for outflow at each stage. We hope that the presented data will provide an empirical backbone for applications in (i) investigating possible bias in the process, (ii) analysing the effects of case and perpetrator characteristics on the likelihood of outflow of cases/perpetrators, and (iii) developing policy recommendations to ensure the quality of criminal justice decision-making at every step.

Notes

1. According to the Dutch Penal Code, other sentences that can be imposed for murder or manslaughter are a fine (article 287 and 289 of the Dutch Penal Code) or community service in combination with an unconditional prison sentence (article 22b Dutch Penal Code). However, in the studied period no perpetrator received a fine or community service for homicide.
2. Since there were multiple perpetrators and/or multiple victims in 886 of the (exceptionally) cleared cases we calculated this variable based on the principal perpetrator and principal victim. The principal victim is defined as the victim with the closest relationship to the perpetrator. If each victim was equally close to the perpetrator, we chose the victim that died first. The principal perpetrator is defined as the perpetrator that has been prosecuted for homicide. If more than one perpetrator was prosecuted for homicide, then the principal perpetrator was the one with the most severe sanction. If the sanctions were equal, then the perpetrator with the closest relationship to the victim was identified as the principal perpetrator. If this information was not available, or if the perpetrators were equally close to the principal victim then the principal perpetrator was chosen at random.

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