

Homicide offenders 32 years later – A Swedish population-based study on recidivism

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ABSTRACT

Background *The literature on recidivism by homicide offenders is scarce despite its importance for individuals and for society.*

Aims *To establish the rate of seriously violent re-offending among homicide offenders and identify risk factors for such recidivism.*

Methods *A 1970s incident cohort of all homicide offenders, sane and insane, from two regions of Sweden (N = 153) was followed up until 2007 using data from the national crime register.*

Results *Ten per cent of the cohort (n = 15) re-offended. The mean time from index offence to recidivism was 9.4 years. Five people (3%) committed a further homicide, and it was established that another five (3%) offenders had killed before the index offence. Prospective risk factors for violent recidivism were young age, psychotic disorder, male victim, acquainted victim and intoxicated victim.*

Conclusions *The prevalence of repeated homicide is higher than previously reported. Victim variables and mental disorder in conjunction with substance abuse appear to be two domains of particular significance for recidivism. Copyright © 2013 John Wiley & Sons, Ltd.*

Background

Violent re-offending by homicide perpetrators has a pervasive effect on public opinion, legislative reforms and the management of all incarcerated violent prisoners and offender patients. Prevention of such recidivism is thus warranted not only for victims and their families but also in order to maintain confidence

in the justice system and to ensure that the rehabilitation of offenders is safe and effective. Such prevention requires data on recidivism, not the least for decisions on leave as well as on release from prisons and discharge from forensic hospitals (West and Greenall, 2011).

Literature on recidivism by homicide offenders is, however, scarce, especially on repeat homicide. A review from 2005 (Bjørkly and Waade) identified 11 studies on recidivistic single-victim homicide, excluding serial killing, mass killing and violent recidivism in general. Most of the studies had a short follow-up time and included biased populations, and too few studies conveyed a distinct definition of 'homicide'. In a more recent review on homicide offender recidivism (Liem, 2012), the paucity of follow-up studies of convicted homicide offenders is again emphasised. The author suggests that research should focus on theory development, comparisons of the trajectories of homicide versus other types of offenders, recidivism among specific offender groups and longer follow-up time, giving time at risk more consideration.

Reported rates of recidivism will depend on how homicide is defined and on the clear-up rate of crime, which, for homicide, is 87% in Sweden (National Council for Crime Prevention, 2011); elsewhere, it may be lower, for example 61% in the USA (Keel et al., 2009). The clear-up rate will also affect the composition of the group of re-offenders; it is likely that mentally ill perpetrators are more often apprehended than, for example, professional criminals. The method of a homicide study will also influence the apparent rate of recidivism, for example by the choice of base population (e.g. prisoners/psychiatrically assessed/offender patients), how time at risk is defined (including time in prison/hospital or not) and duration of follow-up.

Knowledge to date on rate of homicide recidivism

In a 3-year follow-up study of 272,111 prisoners released from US prisons in 1994, of whom 1.7% had been convicted of homicide, the rate of recidivism through a violent offence among the homicide offenders was 17%, of whom 1.2% had committed a new homicide (Langan and Levin, 2002). In a similar population from New Jersey, USA (Roberts et al., 2007), there was no homicide re-offending among 336 people during a 5- to 15-year follow-up.

Two studies based on psychiatrically examined homicide offenders from Nordic countries, where pre-trial psychiatric assessments are commonly requested in cases of homicide, found a recidivism rate of 4% over 9 years in Denmark (Gottlieb and Gabrielsen, 1990) and 2.3% over 13 years in Finland (Eronen et al., 1996).

McCarthy et al. (2001) studied repeat homicide by 124 mentally disordered parricide and stranger homicide offenders and found that no one had committed a further homicide during the mean follow-up time of 6.4 years. In a study from the Chuvash Republic of the Russian Federation of 133 homicide offenders with

schizophrenia, 15 (8%) had killed more than once during the 30-year study period ([Golenkov et al., 2011](#)).

Knowledge to date on risk factors for recidivism

A Canadian study (Cale et al., 2010) on 86 recidivist versus 84 non-recidivist homicide offenders revealed unemployment before first offence, substance abuse, and reduced family and community support after release as associated with recidivism. In a German study of 90 sexual homicide offenders ([Hill et al., 2008](#)), where three (3%) persons committed a new homicide, young age at the index offence emerged as the only significant risk factor. Three of 11 juvenile sexual murders from the USA (Meyers et al., 2010) committed a second sexual homicide after release, underscoring the significance of young age as a risk factor in this type of offending.

In the aforementioned Danish study (Gottlieb et al., 1990), the two re-offenders had substance use disorders, and most of the recidivists in the study by Eronen et al. (1996) suffered from alcoholism, personality disorder or both. A Dutch study (Baay et al., 2012) on recidivism among 621 released homicide offenders found that violent recidivism was linked to longer time in prison, although the most serious violent crimes were few and not separated from less severe crimes in the analysis.

Setting for recidivist homicide

Sweden has a low incidence of homicide, approximately 1 case per 100,000 inhabitants per year (National Council for Crime Prevention, 2011); this means that there are about 90 cases in any one year. Because the clear-up rate of homicide is high, the conditions for research are favourable. Suspicious deaths are autopsied by a forensic pathologist employed by the National Board of Forensic Medicine, and reported to the national cause-of-death register.

Swedish legislation does not allow mentally disordered persons accused of a severe crime to be diverted from the court process; such people are subject to a full trial resulting, with few exceptions, in a custodial sentence or with a court order for hospital-based forensic psychiatric care. The dominating legal reaction to offending has traditionally been that of treatment rather than an 'eye-for-an-eye' philosophy of retribution. Since the late 1980s, however, calls for 'get tough on crime' have become more dominant. Consequently, while one third of all homicide offenders received a hospital disposal in the late 1980s, the corresponding figure from mid-2000 is 15% (Sturup and Lindqvist, submitted).

By international standards, prison sentences in Sweden are rather short, and even life imprisonment has, in practice, meant release after, at the very most, 10 to 12 years. Likewise, for many years, the duration of in-patient forensic psychiatric care has been relatively short. According to the National Board of Health and Welfare (2005), the mean duration of compulsory psychiatric treatment in 1995, including periods of unsupervised leave, was 4.6 years for homicide offenders. This

has since then increased, and in 2005, 34% of all current forensic patients had been incarcerated more than 5 years, compared with 16% in 1995 (National Board of Health and Welfare, 2005).

This study is based on a cohort of homicide offenders from the 1970s, now followed up until the end of 2006. The cohort has previously been followed up in terms of mortality (Lindqvist et al., 2007) and risk for the offenders' suicide during or after detention (Jokinen et al., 2009).

Aims

Our aims were (1) to estimate the rate of re-offending through major violent crime by homicide offenders, and especially of repeat homicide, and (2) to identify the risk factors for re-offending, relevant for the management of homicide offenders in prisons and forensic hospitals.

Method

The sample

The original cohort comprised 174 offenders who committed homicide between 1970 and 1980 in the four northernmost police districts of Sweden (Lindqvist, 1986) and 1971 and 1980 in Stockholm, Sweden (Lindqvist, 1989). The northern, urban region comprised 902,000 people in 1975 and the urban area of the Stockholm Police district 671,000 people.

Homicide was defined as a final court ruling of murder, manslaughter or (aggravated) assault in combination with causing another's death. The definition can be illustrated by three typical cases: premeditated killing (murder), the person who in rage attacks a victim indifferent to the risk of a fatal outcome (manslaughter) and the person who hits a victim in a common brawl, accidentally resulting in death by intra-cranial haemorrhage (assault and causing another's death).

The original cohort did not include 13 cases (7%) where the offender was not identified, deceased (but not through homicide–suicide) or fugitive. Further, another 12 homicides were excluded because of a verdict of self-defence ($n = 6$), no intent ($n = 4$), infanticide ($n = 1$) and offender already in forensic psychiatric compulsory care ($n = 1$). The resulting cohort of 174 people comprised 21 cases where the offender committed suicide before trial; thus, the number of cases available for this follow-up was 153, including two individuals who killed twice on different occasions between 1970 and 1980.

Variables

Baseline data include demographic and clinical variables, previous violent criminality, social situation, place of disposal (prison/hospital), method of killing

and victim-related information. These data were extracted from medico-legal reports, police records, court documents and, in cases of mentally disordered offenders, medical records. Data on homicides committed before and after *the index offence* (i.e. the offence that led to inclusion in the cohort) are limited to date and type of offence.

Procedures

The victims of homicide from northern Sweden were found in a manual search of all death certificates issued by the State Institute of Forensic Medicine in Umeå (now called the Department of Forensic Medicine in Umeå), while the national cause-of-death register was consulted to identify victims from Stockholm and to double check the cases from northern Sweden. The identities of the offenders were traced through local police authorities, and final verdicts were retrieved from courts.

Follow-up data were firstly retrieved from the national cause-of-death register (www.socialstyrelsen.se/statistics), to identify individuals who had died after the trial for the index offence but before the end of the follow-up. The death certificates of the deceased were examined for possible cases of homicide–suicide, but no such case was found. Secondly, the National Register for Criminal Convictions (www.bra.se) was used to identify those who, according to a final court ruling, had committed a major crime of violence up until 31 December 2006. Criminal records of the deceased are not erased from this register.

A major violent crime was defined as an unlawful act posing a severe threat to the health and safety of another. Examples of excluded cases include minor assault, unlawful threat, indecent behaviour and harassment.

Analyses

Recidivism rate was measured by calculating the proportion of all offenders in the cohort who committed a major violent crime during follow-up. The time from index offence to re-offending is visually displayed in a Kaplan–Meier survival analysis.

Calculations on risk factors for recidivism are based on the baseline variables (Table 1) and firstly analysed by using the Chi-square test for categorical variables and *t*-test for continuous variables, with *p*-values below 0.05 considered significant. Secondly, an *ad-hoc* risk prediction variable, using all significant risk factors, was constructed by coding the factors into dummy variables, which were summarised and then tested using a receiver operating curve analysis and reporting area under the curve (AUC).

All analyses were conducted in SPSS version 20 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY, USA).

Ethics approval

The study was approved by the Regional Research Ethics Committee in Stockholm, Sweden (Dnr 2008/359-31/5).

Table 1: Characteristics of 153 Swedish homicide offenders from the 1970s related to recidivism into major violent crime up until 2007

	No recidivism (n = 138)	Recidivism (n = 15)	All offenders (153)	p-value
<i>Demographic</i>				
Mean age (SD)	36.4 (13.3)	29.2 (7.4)	35.7 (13.7)	$p < 0.05$
Gender				
Male	125 (91%)	14 (93%)	139 (91%)	ns ^a
Female	13 (9%)	1 (7%)	14 (9%)	
Country of birth				
Sweden	118 (86%)	14 (93%)	132 (86%)	ns ^a
Other	20 (15%)	1 (7%)	21 (14%)	
Marital status				
Married/cohabiting	50 (36%)	4 (27%)	54 (35%)	ns ^a
Single	88 (64%)	11 (73%)	99 (65%)	
Social beneficiary				
No	53 (38%)	4 (27%)	57 (37%)	ns ^a
Yes	85 (62%)	11 (73%)	96 (63%)	
<i>Criminological</i>				
Previous violent crime				
No	85 (61%)	6 (40%)	91 (60%)	ns
At least one	53 (38%)	9 (60%)	62 (40%)	
Method				
Blunt object	44 (32%)	4 (27%)	48 (31%)	ns ^a
Sharp object	56 (41%)	9 (60%)	65 (43%)	ns
Other	38 (28%)	2 (13%)	40 (26%)	ns ^a
Offender intoxicated				
No	38 (28%)	1 (7%)	39 (26%)	ns ^a
Yes	100 (73%)	14 (93%)	114 (75%)	
Co-offender				
None	135 (98%)	14 (93%)	149 (97%)	ns ^a
At least one	3 (2%)	1 (7%)	4 (3%)	
Legal outcome				
Prison	51 (37%)	4 (27%)	55 (36%)	ns ^a
Forensic psychiatric care	87 (63%)	11 (73%)	98 (64%)	
<i>Clinical</i>				
Diagnosis				
Psychosis	17 (12%)	5 (33%)	22 (14%)	$p < 0.05$
Personality disorder	62 (45%)	5 (33%)	67 (44%)	ns
Addiction	22 (16%)	3 (20%)	25 (16%)	ns ^a
Other	31 (23%)	2 (13%)	33 (22%)	ns ^a
None	6 (4%)	0 (0%)	6 (4%)	ns ^a
Substance abuse				
No	50 (36%)	2 (13%)	52 (34%)	ns ^a
Yes	88 (63%)	13 (87%)	101 (66%)	

(Continues)

Table 1: *Continued*

	No recidivism (n = 138)	Recidivism (n = 15)	All offenders (153)	p-value
<i>Victim characteristics</i>				
<i>Gender of victim</i>				
Female	63 (46%)	3 (20%)	66 (43%)	$p < 0.05^a$
Male	75 (54%)	12 (80%)	87 (57%)	
<i>Victim</i>				
Partner	49 (36%)	2 (13%)	51 (33%)	ns ^a
Family	18 (13%)	1 (7%)	19 (12%)	ns ^a
Acquaintance	46 (33%)	9 (60%)	55 (36%)	$p < 0.05^a$
Stranger	25 (18%)	3 (20%)	28 (18%)	ns ^a
<i>Victim intoxicated</i>				
No	54 (39%)	1 (7%)	55 (36%)	$p < 0.05^a$
Yes	84 (61%)	14 (93%)	98 (64%)	

^aFisher's exact test.

Results

Table 1 shows that the cohort was comprised of 153 people – 139 males (mean age 35.7 years) and 14 females (mean age 36.6 years). The majority were single, born in Sweden and received social benefits at the time of the index offence. Nearly half of all those included had previously been convicted of a violent crime. Seventy-two (47%) had died during follow-up; the youngest offender still alive at the end of follow-up was then 51 years old. The mean time from index offence to death or end of follow-up was 21.4 years (SD = 11.1; median 24 years).

Recidivism into major violence

Fifteen of the 153 subjects (10%) committed a major violent crime during the follow-up (Table 1). Five (3%) of them killed again: murder ($n = 2$), manslaughter ($n = 2$), aggravated assault and causing another's death ($n = 1$). The non-fatal cases were aggravated assault ($n = 4$), robbery ($n = 4$), gross arson ($n = 1$) and sexual molestation of a child ($n = 1$).

The mean time to re-offending for any major violent crime after the index offence was 9.4 years (range 1 to 27 years), in non-fatal violence 11.6 years (range 3 to 27 years) and in repeat homicide 5.0 years (range 1 to 11 years). Thirteen of the 15 cases of recidivism occurred within 15 years of the index offence (Figure 1). Of the 138 offenders who did not re-offend, 68 (49%) were dead at the end of the follow-up period compared with four (26%) of the 15 re-offenders.

As seen in Table 1, 14 of the 15 re-offenders were males. The mean age at the index offence was 29.2 years for recidivists compared with 36.4 years for

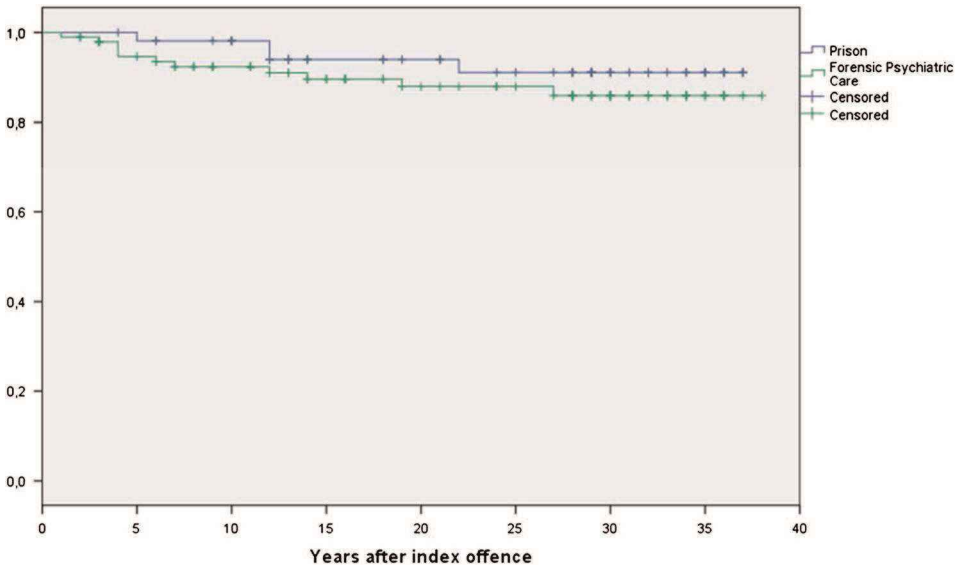


Figure 1: Recidivism into violent crime by 153 homicide offenders sentenced to prison sentence ($n = 55$) or forensic psychiatric care ($n = 98$) from Sweden, followed up for 27 to 37 years, presented as a survival curve

non-recidivists. Significant risk factors for recidivism were young age, having a psychotic disorder, male victim, a victim who was an acquaintance or an intoxicated victim (Table 1). Predicting risk for recidivism from these five risk factors alone yielded an AUC of 0.78 (CI 0.64–0.92).

All but one of the five re-offenders with psychosis had a co-morbid substance abuse disorder, compared with six of the 17 (35%) non-re-offenders ($p = 0.078$). In the 92 cases where both offender and victim were intoxicated at the index offence, 13 (14%) offenders re-offended compared with no case of re-offending among the 33 cases where neither the offender nor the victim was intoxicated ($p < .05$).

Repeat homicide offending

Five offenders (3%) had committed a homicide before the index offence, of whom two completed suicide before the trial for their second homicide. Adding all cases of homicide re-offending, before ($n = 5$) and after ($n = 5$) the index offence, 10 offenders (6%) of the original cohort of 174 individuals (including cases of homicide–suicide at the index offence), all males, had committed two homicides on different occasions during their life span. There were no cases of serial killing. The mean time between the first and second homicide was 3.5 years (range: 2 months to 11 years).

One offender was ascribed a diagnosis of schizophrenia, and the other nine had a diagnosis of personality disorder, of whom eight had a co-morbid substance disorder. An analysis of prospective risk factors for repeat homicide offence displayed a trend towards previous criminality (7% vs 1%; $p = 0.07$) and an intoxicated victim (5% vs 0%; $p = 0.09$).

Discussion

Recidivism

Our study was designed to estimate recidivism after homicide, and we found that 7% had committed a further non-fatal and 3% fatal violent crime. Including the five people who had committed a homicide before the index offence, 6% of the cohort had killed twice. This is twice the usually reported rate (Liem, 2012). This may be due to the design and lengthy follow-up period, which stresses the need of a long follow-up time in studies on recidivism among homicide offenders.

We do not know of any robust data that suggest that Swedish offenders in general are different from those of other nationalities in terms of recidivism, although it is possible to expect that the lower the national rate of homicide, the lower the recidivism rate. Thus, the relatively high rate of serious violent re-offending, including repeat homicide, which we found, is unsettling, even from an international perspective. The mean time from index offence to re-offending was not that long – for non-fatal violent crime 12 years and for a new homicide 5 years. This implies that too early release or discharge may be unwise. More time behind bars is not, however, automatically conducive to a better outcome (see Baay et al., 2012). Instead, prognosis may be improved by better social and mental rehabilitation, as suggested in an Australian report (Ong et al., 2009), where a new rehabilitation philosophy, promoted by the forensic mental health services, was implemented in 1998.

Determination of the most appropriate length of time in prison/hospital is not, however, only a scientific issue. Legal authorities have to base their decisions on what society believes is just and morally right. This ethical code is determined by an easily understood wish for retribution as well as the risk for re-offending. Studies like ours may assist in decision making about risk but cannot determine what is fair.

Risk factors

Identification of offenders at risk of re-offending is crucial because such offenders are potential candidates for special management programmes. How well these offenders are looked after may play a significant role in recidivism (Golenkov et al., 2011). The development of better and efficient management programmes is also needed from a public spending perspective. A proper risk assessment of incarcerated

homicide offenders should improve treatment and management, not only comprising a yes/no response to a request for leave or release/discharge. The potential ethical problem of too many false positives will in this respect be negligible should it result in individualised and safe rehabilitation.

Three of the five identified risk factors for recidivism in this study concerned the status of the victim. This is compatible with findings from England and Wales ([McCarthy et al., 2001](#)), where recidivism was more likely among offenders who killed a stranger rather than a spouse. Consequently, our results lend support for the argument that an offence and victim analysis is an important component of a risk and need assessment of homicide offenders (see also [West and Greenall, 2011](#)).

A second area of special concern for re-offending is substance misuse in conjunction with psychosis and personality disorder. This has been a well-documented risk factor in criminal and violent behaviour in general for a long time but not convincingly shown in recidivism by homicide offenders. Eight of the 10 repeat homicide offenders in this study had a co-morbid substance disorder. We also found that alcohol intoxication of the offender alone or of both parties at the time of the offence was overrepresented, as in other studies ([Tiihonen et al., 1995](#); [Eronen et al., 1996](#)), but the importance of addiction may be gender-related. A Finnish study ([Putkonen et al., 2003](#)), based on convicted female homicide offenders, showed that the four women who committed another homicide were all suffering from personality disorder, not substance disorder.

Methodological issues

We believe that a longitudinal study like this, following a well-defined cohort of homicide offenders, yields useful information. It is the most inclusive of all studies in the field so far and also the study with by far the longest follow-up time. We were not, however, able to access data to estimate time at risk in the community; the follow-up period of 27–37 years from index offence to end of follow-up will in most cases in Sweden include time both in custody and living in the community. Further, new violent crimes can occur while institutionalised, as demonstrated in a Swedish follow-up study of 100 pre-trial psychiatrically assessed offenders, where violent crimes, including one murder, were committed while institutionalised ([Nilsson et al., 2011](#)). Thus, time in custodial detention should not be excluded in follow-up studies, although adding data on leave and on release/discharge may reveal important information.

We neither report on less serious recidivism nor the number of crimes committed during follow-up. Had minor crimes been included, other external factors such as clear-up rate, unreported criminality and technical problems inherent in official crime statistics would probably have distorted the overall picture. We have, for example, not defined assault and arson as major violent crimes. The former cannot be disentangled in the crime register from minor assault (e.g. a slap on the cheek), and in Swedish law, arson denotes an unlawful act that does not present a tangible

danger to the life of others. Aggravated assault and gross arson are more severe offences, and categories of their own in the criminal register were therefore included.

The inherent problem of any long-term study is that old data may be less relevant for the present situation; significant risk factors may, for example, change over time. On the other hand, a shorter follow-up time would not capture all cases of re-offending, including repeat homicide. A major drawback for our study was the paucity of data on the nature of the felonies committed during follow-up. Finally, the cohort was not collected with the purpose of setting up a follow-up study on recidivism 35 years later. Had this been the case, complementary data, relevant to the issue of re-offending as known at that time, would have been retrieved from the start.

There is a statistical problem, as there were 20 comparisons in the categorical factors and the outcome variable (recidivism). With a significance level set at 5%, the analysis should be true 19 out of 20 times. As 20 analyses were conducted, whereof the majority were non-significant, the reader should consider that there is a risk of a type 1 error, where one of the non-significant tests actually was significant.

Conclusions

The prevalence of homicide re-offending was higher than previously reported, suggesting that the problem of recidivism may be more serious than generally acknowledged. This finding calls for more studies of how homicide offenders are managed during incarceration and in terms of its length and their rehabilitation.

Risk factors for recidivism appear to be related to index offence variables. Offenders with psychosis and personality disorder with concomitant substance misuse at the time of the offence present a particular challenge for therapeutic efforts before release and discharge into the community. These and other risk factors need further examination in longitudinal research, where access to data about the re-offending is pivotal. The rehabilitative potential of institutions that keep homicide offenders needs further research, preferably in international multicentre studies, where national differences can be controlled.

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