

Trends in rates of mental illness in homicide perpetrators

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Background

The rise in homicides by those with serious mental illness is of concern, although this increase may not be continuing.

Aims

To examine rates of mental illness among homicide perpetrators.

Method

A national consecutive case series of homicide perpetrators in England and Wales from 1997 to 2006. Rates of mental disorder were based on data from psychiatric reports, contact with psychiatric services, diminished responsibility verdict and hospital disposal.

Results

Of the 5884 homicides notified to the National Confidential Inquiry into Suicide and Homicide by People with Mental Illness between 1997 and 2006, the number of homicide perpetrators with schizophrenia increased at a rate of 4% per year, those with psychotic symptoms at the time of the offence increased by 6% per year. The number of verdicts of diminished responsibility decreased but no change was found in the number of perpetrators receiving a hospital order disposal. The likeliest explanation for the rise in

homicide by people with psychosis is the misuse of drugs and/or alcohol, which our data show increased at a similar magnitude to homicides by those with psychotic symptoms. However, we are unable to demonstrate a causal association. Although the Poisson regression provides evidence of an upward trend in homicide by people with serious mental illness between 1997 and 2006, the number of homicides fell in the final 2 years of data collection, so these findings should be treated with caution.

Conclusions

There appears to be a concomitant increase in drug misuse over the period, which may account for this rise in homicide. However, an increase in the number of people in contact with mental health services may suggest that access to mental health services is improving. Previous studies have used court verdicts such as diminished responsibility as a proxy measure of mental disorder. Our data indicate that this does not reflect accurately the prevalence of mental disorder in this population.

Declaration of interest

L.A. is the National Clinical Director for Health and Criminal Justice, England.

Homicide rates in the general population in England and Wales have been steadily increasing over the past three decades.¹ There are several ways of estimating the contribution to homicide rates by the mentally ill. 'Abnormal homicide' is a criminal justice system definition of homicide by someone with mental illness and includes those receiving verdicts of diminished responsibility, not guilty by reason of insanity, unfit to plead owing to an incapacity to comprehend the court proceedings or infanticide (only applicable to women who kill an infant as a result of 'the balance of her mind being disturbed by childbirth'²). Using this definition of abnormal homicide, the contribution to homicide by the mentally ill has decreased over time, both in the UK and other countries,^{3–5} with some exceptions reported.⁶ Conversely, findings from the National Confidential Inquiry into Suicide and Homicide by People with Mental Illness (NCI)⁷ showed that the number of homicides by people experiencing symptoms of mental illness, particularly psychosis, at the time of offence had increased. This study aims to estimate the proportion of homicide perpetrators with mental illness using various definitions and to examine factors associated with a rise in homicide by people with psychotic symptoms at the time of offence.⁷

Method

Data collection

The NCI compiles a unique database comprised of a national case series of all perpetrators of homicide in the UK, with particular focus on perpetrators with a history of mental illness and/or

contact with mental health services. A more detailed description of the NCI methodology can be found in a previous publication.⁸

This study incorporated NCI data on convicted homicide perpetrators (murder, manslaughter or infanticide) in England and Wales, January 1997 to December 2006. Details of the perpetrator, victim and offence method along with verdict and disposal were provided by the Home Office Homicide Index database. Antecedent data (previous offences) were obtained from the Police National Computer. The sample does not include cases of homicide–suicide. A previous study of homicide–suicide by the NCI⁹ established the number of perpetrators with serious mental illness to be small. Therefore the exclusion of homicide–suicide cases does not affect the overall rate of people with schizophrenia or psychosis committing homicide.

To identify those with a history of contact with mental health services, identifying details of perpetrators were submitted to National Health Service (NHS) trusts and independent hospitals in the perpetrator's district of residence and neighbouring districts. If contact with mental health services was established, a questionnaire was sent to the supervising clinician for each patient. Annual data completeness was high overall (98%) in the study period. We therefore expect a small number of cases to be added to the study period, which may increase the numbers in the final year. This is due to the period of processing from time of notification of data to the NCI by the Home Office to receipt of clinical data from the trust.

Irrespective of mental health history, psychiatric reports prepared for court were requested on all perpetrators from the

courts, forensic mental health units and psychiatrists. Data extracted from these reports included the perpetrator's psychiatric history, mental state at the time of the offence (including psychotic symptoms), alcohol and substance misuse and recommendations made by the report's author with regard to receiving a verdict of diminished responsibility at trial. Diagnoses were established from either the questionnaire completed by the perpetrator's consultant psychiatrist or from the psychiatric report. Any discrepancies between diagnoses in the court report and the questionnaire were resolved by consensus agreement between senior clinical members of the Inquiry team.¹⁰

The data-set was then used to explore reasons for the rise in homicide by people with psychosis over the study period. Additional cases have been identified since the publication of the NCI report in 2010.¹¹ People with psychosis were chosen, as this group showed the greatest proportionate change. The quality of psychiatric reports was explored by analysing a sample of reports, looking at information collected, the comprehensive nature of the interview and expertise of the author.¹¹ Cases with recent migration by the perpetrator (within 5 years of the homicide), with shorter durations of illness, urban homicides and those with a lifetime history of drug or alcohol misuse were identified. These variables were analysed to ascertain whether there were changes of a similar magnitude during the period of the sharpest rise in homicides (an increase of about 20 cases annually between 2003 and 2005) by those with psychotic symptoms. Drug and alcohol misuse in cases with schizophrenia was also examined.¹² Schizophrenia cases of homicide committed by people are defined as perpetrators with a primary diagnosis of schizophrenia or other delusional disorder (ICD-10 F20–F29).¹³

Ethical approval

The NCI received Multi-centre Research Ethics Committee approval on 1 October 1996 and is registered under the Data Protection Act. The Inquiry also obtained exemption under Section 251 of the National Health Service Act 2006 (formerly Section 60 of the Health and Social Care Act 2001) enabling access to confidential and identifiable information without informed consent in the interest of improving patient care.

Statistical analysis

Stata version 10 for Windows was used to fit Poisson regression models to examine trends over time. The number of homicides per year was defined as the outcome and year as a linear predictor. Rates of people convicted of homicide by measure of mental illness were calculated using mid-year population estimates as the denominator obtained from the Office for National Statistics (for those aged 10 or over). For each model, the likelihood-ratio-test *P*-value and the predictor (and 95% CI) for year were examined. An incidence rate ratio (IRR) was obtained to assess temporal trend. A significant trend was reported if the addition of year improved the model fit at the 5% level (using the likelihood ratio test) and the 95% confidence interval around the IRR estimate for year did not include 1.00. An IRR of less than 1.00 indicates a decrease in the homicide rate over time and an IRR greater than 1.00 indicates an increase over time. For example, a significant IRR of 1.05 indicates a 5% increase in the rate per year whereas a significant IRR of 0.95 indicates a 5% decrease in the rate per year.

Percentages are expressed as valid per cents throughout.

Results

Homicides and mental illness

From 1997 to 2006, 5884 general population homicide convictions were notified to the NCI. There was a significant rise in homicides

in the general population; 2% per year, during this period. There was an overall increase in the numbers of those with schizophrenia and those with psychotic symptoms at the time of the offence, although the most recent figures for 2005–2006 show a fall in numbers. There was an increase in the number in contacts with mental health services in the 12 months prior to the offence. There was a significant decrease over time in the number receiving a verdict of diminished responsibility. There was no change in the number with any symptoms of mental illness at the time of the offence, or in the number receiving a hospital order disposal from court. The rise in homicides by people with schizophrenia or psychotic symptoms is larger than the rise in the general population (Fig. 1 and Table 1).

Schizophrenia

There was a significant increase in the number of homicides by people with schizophrenia, 4% per year over the study period. The number of these individuals with a psychiatric report did not change significantly over time, although there was an increase in the number receiving a psychiatric recommendation for diminished responsibility. However, the number receiving an outcome of diminished responsibility significantly decreased over time by 11% per year (Table 1).

Psychosis at the time of the offence

There was a significant increase of 6% per year in the number of people with psychosis at the time of the offence. There was also a significant increase in the number for whom there was a psychiatric recommendation for diminished responsibility. However, the number receiving an outcome of diminished responsibility significantly decreased over time, by 9% per year (Table 1).

In those who were psychotic at the time of the offence and in those with a diagnosis of schizophrenia there was a significant increase in rates of lifetime alcohol and drug misuse over time (Table 2). In particular, the increase in drug misuse was of a similar magnitude (around 20 cases per year) between 2003 and 2005 as the increase in homicides by those with psychotic symptoms at the time of the offence. The main drugs used by perpetrators with psychosis were cannabis ($n = 121$), cocaine ($n = 43$) and amphetamines ($n = 39$).

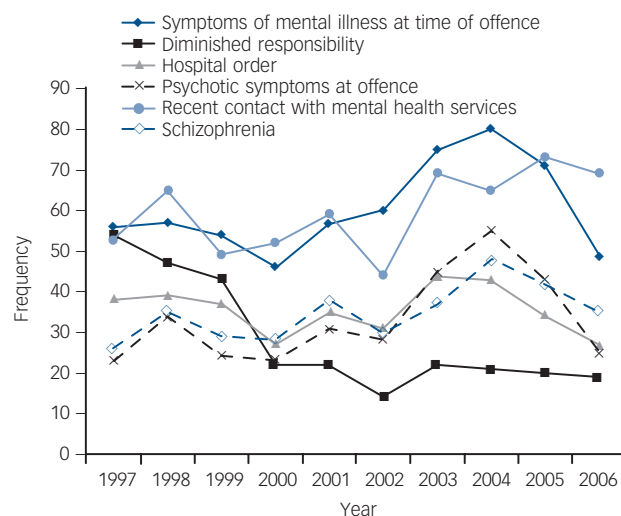


Fig. 1 Number of homicide perpetrators with mental illness by different definitions, 1997–2006.

Table 1 Number, rate and trend over time of people convicted of homicide, by measure of mental illness (England and Wales, 1997–2006)

Measure of mental illness	Number, rate and trend (1997–2006)				
	<i>n</i> (%)	Rate	IRR	95% CI	<i>P</i>
Perpetrators convicted of homicide	5884 (100)	1.28	1.02	1.01–1.03	<0.01
Mental illness at offence	605 (10)	0.13	1.03	1.00–1.05	0.07
Recent contact with mental health services	598 (10)	0.13	1.03	1.00–1.06	0.02
Hospital order disposal (with or without restriction)	355 (6)	0.08	0.99	0.96–1.03	0.60
Manslaughter (Section 2) diminished responsibility	286 (5)	0.06	0.87	0.84–0.91	<0.01
Manslaughter (Section 2) diminished responsibility recommended	698 (12)	0.15	0.98	0.95–1.00	0.11
Schizophrenia	348 (6)	0.08	1.04	1.01–1.08	0.02
With psychiatric report	335 (96)	n/a	1.04	1.00–1.08	0.06
Diminished responsibility recommended	264 (89)	n/a	1.05	1.00–1.09	0.03
Diminished responsibility received	109 (31)	n/a	0.89	0.83–0.95	<0.01
Psychotic symptoms at offence	331 (6)	0.07	1.06	1.02–1.10	<0.01
Diminished responsibility recommended	273 (90)	n/a	1.06	1.02–1.11	<0.01
Diminished responsibility received	116 (35)	n/a	0.91	0.85–0.97	<0.01

IRR, incidence rate ratio; n/a, not applicable.
a. Rate per 100 000 population.

There was no change in the quality of reports over time or in the number with a short duration of illness. There was a small increase in homicides by people who were recent immigrants who had psychotic symptoms at the time of the offence but this was not significant, nor sufficient to explain the magnitude of the increase in homicides by those with psychotic symptoms. Homicides by people with psychosis in urban areas increased but a similar rise was seen in homicides in rural areas, resulting in no increase in the urban/rural homicide ratio (Table 2).

Discussion

This study indicates a significant increase in homicides by those with mental illness from 1997 to 2006, as defined by those with schizophrenia or with symptoms of psychosis at the time of the homicide. A rise in the number of homicide perpetrators in recent contact with mental health services was also found. The number receiving a hospital order disposal has not changed over time and there has been a decrease in the number receiving a verdict of diminished responsibility.

To explore the rise in homicides by people with psychosis further, we examined factors which increased at the same time and by the same amount. The increase does not appear to be accounted for by increasing prevalence of psychosis in the general

population^{14–16} nor an improvement in the quality of psychiatric reports resulting in better detection of psychotic symptoms.¹¹ Although there is a higher prevalence of psychosis within certain migrant communities,¹⁷ a small, but non-significant rise in recent immigration in our psychotic cases could not account for the overall increase. There is a greater prevalence of psychosis in urban areas¹⁸ but we found no evidence that the overall increase had been driven by an increase in urban homicides, or homicides by people with short duration of illness in which contact with services could not be established in time.

Drug and alcohol misuse can trigger or exacerbate symptoms of psychosis and the most probable explanation appears to be a significant increase in drug misuse in those with psychotic symptoms at the time of the offence. The increase in homicides by those with a history of drug misuse is of the same magnitude, about 20 cases annually, and over the same time period, 2003–2005, as the increase in homicides by those with psychotic symptoms. There was a similar rise in drug and alcohol misuse among people with schizophrenia who committed homicide over the same time period. We cannot establish causality from these data, although from the available data, this would appear to be the most likely explanation.

To explore the seemingly contradictory findings of increasing numbers of perpetrators with schizophrenia and psychotic symptoms yet a decrease in those receiving diminished

Table 2 Number and trend over time of people with schizophrenia and psychotic symptoms at the time of offence (England and Wales, 1997–2006)

	Number and trend (1997–2006)			
	<i>n</i> (%)	IRR	95% CI	<i>P</i>
Schizophrenia at time of offence	348 (6)	1.04	1.01–1.08	0.02
Alcohol misuse	132 (43)	1.07	1.01–1.14	0.02
Drug misuse	205 (63)	1.09	1.04–1.15	<0.01
Psychosis at time of offence	331 (6)	1.06	1.02–1.10	<0.01
Duration of illness (onset <1 year before the offence)	62 (21)	1.05	0.96–1.14	0.31
Recent immigration ^a (<5 years before the offence)	11 (3)	1.20	0.94–1.54	0.12
Homicide in urban areas	164 (50)	1.05	1.00–1.11	0.07
Homicide in rural areas	167 (50)	1.06	1.01–1.12	0.02
Alcohol misuse	132 (43)	1.11	1.04–1.18	<0.01
Drug misuse	196 (62)	1.11	1.06–1.17	<0.01

IRR, incidence rate ratio.
a. Data period for this variable 1997–2005.

responsibility verdicts, we focused on those with schizophrenia and those with symptoms of psychosis at the time of the offence, as those with severe mental illness should be more likely to receive a verdict of diminished responsibility.¹⁰ For both of these groups there was an increase in psychiatrists recommending a verdict of diminished responsibility in court reports yet a significant decrease in those receiving this verdict at trial. This suggests that the decrease in diminished responsibility verdicts is more likely to be a result of a change in the manner in which the criminal justice system deals with mentally ill offenders or interprets psychiatric recommendations, rather than a real decrease in homicides by those with severe mental illness, as previously considered.⁵

Studies examining trends in mental disorder among perpetrators of homicide in the UK have used criminal justice definitions of mentally abnormal homicides (those receiving verdicts of diminished responsibility, infanticide, not guilty by reason of insanity and unfit to plead and stand trial) as a proxy measure of mental disorder.^{3,5} Our data show that this measure does not accurately represent patterns of mental illness in homicide perpetrators. However, the relationship between the presence of mental illness and outcome in court is important to study in its own right. Our previous study suggested that co-existing substance misuse in people with mental illness made a verdict of diminished responsibility or a hospital disposal less likely.¹⁰

Limitations

Information on diagnosis from court reports and questionnaires were based on clinical judgement not standardised assessments. However, the reliability of this information has been shown to be good.¹⁹ There has been a decrease in psychiatric reports received by the NCI over the study period. Since 2001, homicide perpetrators are no longer required to undergo psychiatric assessment; consequently, there has been a fall in the number of reports produced annually. However, we do not believe that this has biased the results. Although some individuals with mental disorder may be missed, no significant change was observed in the proportion of reports in those with schizophrenia, where there has been a marked decrease in diminished responsibility verdicts.

In this paper we report the rise in the rate of homicide by people with schizophrenia and psychosis for the period 1997–2006. Data for the latter years show that this upward trend may not be continuing. Therefore care should be taken in the interpretation of these results.

Clinical Implications

The increase in homicides by those with schizophrenia and by those with psychotic symptoms at the time of the homicide is most likely to be related to increased drug misuse. There was a significant increase in the proportion of perpetrators in recent or current contact with mental health services. This may suggest improved accessibility of mental health services and pathways into care for individuals not previously in contact with mental health services. Increasing the accessibility of dual diagnosis services could be beneficial in improving both recognition and treatment in cases in which mental illness is exacerbated by alcohol or drug misuse. Health education initiatives to encourage individuals with these problems to access services are necessary.¹²

We do not have data on contact with other medical services such as emergency departments or general practitioners, or other agencies such as those within the criminal justice system. However, moves towards regular training of all professionals in identifying signs of mental illness and improving access to mental

health services could be beneficial in helping to provide early treatment.

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First received 2 Aug 2010, final revision 25 Nov 2010, accepted 18 Jan 2011

Funding

This study was funded by the National Patient Safety Agency (NPSA).

Acknowledgements

The study was carried out as part of the National Confidential Inquiry into Suicide and Homicide by People with Mental Illness.⁷ We thank the other members of the research team: Kirsten Windfuhr, Alyson Williams, Rebecca Lowe, Isabelle M Hunt, Harriet Bickley, Cathryn Rodway, Pauline Turnbull, Jimmy Burns, Phil Stones, Kelly Hadfield, Danielle Matthews and Paul Clarke. We acknowledge the help of district directors of public health, health authority and trust contacts, and consultant psychiatrists for completing the questionnaires.

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psychiatry in the movies

The good psychiatrist in film: *Vincere* (dir. Marco Bellocchio)

Larry Culliford

This historical drama concerning the life of Mussolini's first wife, Ida Dalsler, the mother of his first-born son Benito, shows an early double example of the abuse of psychiatry. In this account, Dalsler loved passionately the young man who would become dictator. She sold her jewels, her house and her successful beautician business to enable him to found *Il Popolo d'Italia*, the newspaper that became his springboard to power. He became prime minister of Italy in 1922.

Mussolini married Ida in a church ceremony, and formally acknowledged his son. The relationship soured, but Ida rebelled at the estrangement. Nevertheless, her existence threatened his security and popularity. In 1926, fascist Blackshirts took her away to an asylum run by nuns. Her son was sent to a religious boarding school, never to see his mother again. The asylum scenes are touchingly played out, both the ensemble moments when Ida is among her fellow inmates, and when she is alone. The most lyrical scene has her climbing the high lattice preventing her escape, silently watching snow fall through the bars. It is Christmas. She is pining for her missing son.

Psychiatrists in film are usually portrayed as crazy or evil or both. It is refreshing to meet here someone with genuine compassion. Insisting on her claim to be the true wife of 'Il Duce', Ida struggles and rails against her incarceration at every opportunity; until the doctor takes her aside and counsels a different approach. Doctor Cappelletti reminds her that fascism will not last forever. His advice is to become an actress, put aside her anger and act normal, even pious. That way, he assures her, he will find a way to release her in time. Unfortunately, she is transferred to another hospital before he can restore her to freedom. Later, with the help of a young nun, she escapes, only to be returned to captivity once again.

As the credits roll, we are told that Ida Dalsler died of a brain haemorrhage in the psychiatric institution on the Venetian island of San Clemente in 1937. She was 57. Suspicions have been voiced that she was in fact murdered. A similar fate seems to have befallen her son. In the film, young Benito, apparently aping his father, goes realistically mad. According to published facts, he died in a psychiatric hospital near Milan in 1942 at the age of 27 after receiving excessive amounts of insulin coma therapy. Could this have been another murder? As history, the film is incomplete, fictional in parts, and highly conjectural. As cinema, however, it is blessed by a stunning performance from Giovanna Mezzogiorno as Ida, and some remarkable cinematography. As an example of film portraying such a kind and insightful psychiatrist, it may well be unique.

The British Journal of Psychiatry (2011)
198, 489. doi: 10.1192/198.6.489