

A DEMOGRAPHIC PROFILE OF DEATHS DUE TO INTERPERSONAL VIOLENCE IN NEW SOUTH WALES

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When one person or a small group of people intentionally inflicts an injury on another person or persons, an act of interpersonal violence is committed.^{1,2} Each act of interpersonal violence has many different factors associated with it. These include the type of relationship between the persons involved (for example, partners, caretaker-child), the nature of the act (for example, physical violence), the demographics of the people involved, the method or means used to commit the act, the events leading up to the act and the environment or location the act took place in.¹

Interpersonal violence can result in a range of outcomes, including emergency department visits, hospitalisations and even death.^{1,3-6} Information about different factors related to interpersonal violence can be obtained using a number of data sources¹, including death records. This article presents annual age-standardised death rates in NSW due to interpersonal violence for the period 1986–2003 and a demographic profile of these deaths for the years 1999–2003.

METHOD

Death data were obtained from the Australian Bureau of Statistics (ABS) for all NSW death records coded with an external cause of injury (Ecode) during 1986–2003. Deaths registered in NSW from 1986 to 1998 were coded using the International Classification of Diseases (ICD) version 9 (ICD-9) and deaths registered in NSW from 1999 to 2003 were coded using ICD-10.^{7,8}

Cases were identified as those records where the underlying cause of death was determined to be interpersonal violence and the state of residence of the deceased person was NSW. The interpersonal violence Ecodes used were E960–E968.9 and X85–Y09 for ICD-9 and ICD-10 coded death data, respectively. Deaths attributed to the late effects of injury caused by interpersonal violence were also included in this analysis (Ecodes E969, Y87.1). Interpersonal violence death records were selected and analysed according to the year that the event occurred rather than the year that the death was registered with the ABS. Records for deaths that occurred in NSW from 1986 to 2003 but which have not yet been registered are not included in this analysis. The number of deaths excluded, however, is likely to be small. For example, 11 of the deaths registered in 2003 in NSW occurred in a previous year(s). In the case of the registration year 2003, all 11 of these deaths occurred in 2002.

Annual age- and sex-specific population estimates for NSW as at 30 June were obtained from the ABS for the years

1986–2003.⁹ All age-standardised rates were calculated using the direct method of standardisation. The standard population was the estimated Australian residential population as at 30 June 2001.⁹

Death data from 1986 to 2003 were used to calculate annual age-standardised interpersonal violence death rates for males and females. Negative binomial regression analyses were performed to determine the statistical significance of changes in the male and female death rates from 1986 to 2003, and to calculate the annual percentage change in the rate of death.

Data from 1999 to 2003 were also grouped and used to calculate age-standardised interpersonal violence death rates for all people, males and females, as well as age-specific interpersonal violence death rates for males and females. Age-standardised death rates and frequencies for all people, males and females were also calculated for different methods of interpersonal violence, including:

- use of a sharp or blunt object to hit, cut or stab another person causing bleeding or other type of injury (X99, Y00)
- shooting by firearm (gun)(X93–X95)
- bodily force (Y04–Y05, Y07)
- hanging, strangulation or suffocation (X91); and
- poisoning (X85, X87–X90).

Interpersonal violence methods do not include any deaths due to self-harm or unintentional injury.

All analyses were performed using SAS statistical software.¹⁰ Ninety-five per cent confidence intervals (95 per cent CI) were calculated for rates assuming a Poisson distribution.¹¹

RESULTS

Interpersonal violence was the fifth leading cause of injury death in NSW from 1999–2003 and accounted for 4 per cent of all injury deaths. Over this period, 507 people died from interpersonal violence, an overall rate of 1.5/100,000 population. Seventy per cent of these people were male. Approximately 101 people died each year from 1999 to 2003 as the result of interpersonal violence.

Figure 1 shows the yearly trend in interpersonal violence death rates during 1986–2003 for males and females. A negative binomial regression of the trends for each sex showed that there were statistically significant declines from 1986 to 2003 in both sexes. For males, interpersonal violence death rates decreased by 2.6 per cent per year (95 per cent CI 1.7 to 3.5), while for females interpersonal violence death rates decreased by 4.6 per cent per year (95 per cent CI 3.2 to 6.0).

Figure 2 shows the age-specific death rates for interpersonal violence in NSW between 1999 and 2003 for males and females. Death rates for interpersonal violence were higher in males than females for all age groups except for males aged 75 years and over for this period. Males aged 30–34 years had the highest rate of death due to interpersonal violence and this group accounted for 10 per cent of all interpersonal violence deaths. Children under five years of age also experienced high rates of interpersonal violence.

Deaths in this age group accounted for 6 per cent of interpersonal violence deaths between 1999 and 2003.

Table 1 shows the number of deaths caused by interpersonal violence and the death rates for the different methods used, for the period 1999–2003. Male interpersonal violence death rates significantly exceeded the corresponding rate for females for the methods ‘sharp or blunt object’; ‘firearm’; and ‘bodily force’. The female death rates for interpersonal violence exceeded the male rates for ‘poisoning’ and

FIGURE 1

DEATH RATES FOR INJURY DUE TO INTERPERSONAL VIOLENCE FOR MALES AND FEMALES, ADJUSTED FOR AGE: NEW SOUTH WALES, 1986–2003

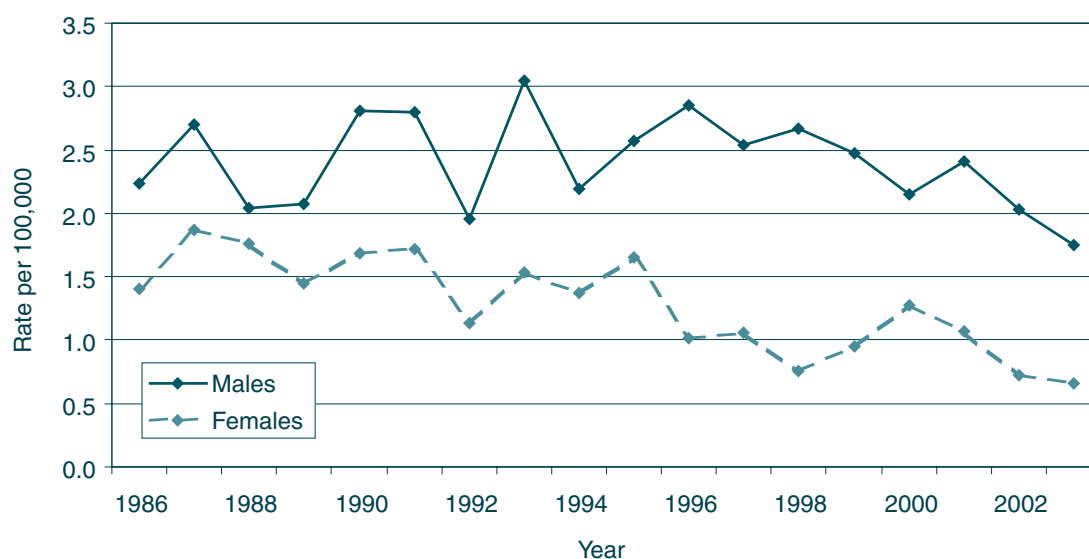


FIGURE 2

AGE-SPECIFIC DEATH RATES FOR INTERPERSONAL VIOLENCE FOR MALES AND FEMALES: NEW SOUTH WALES, 1999–2003

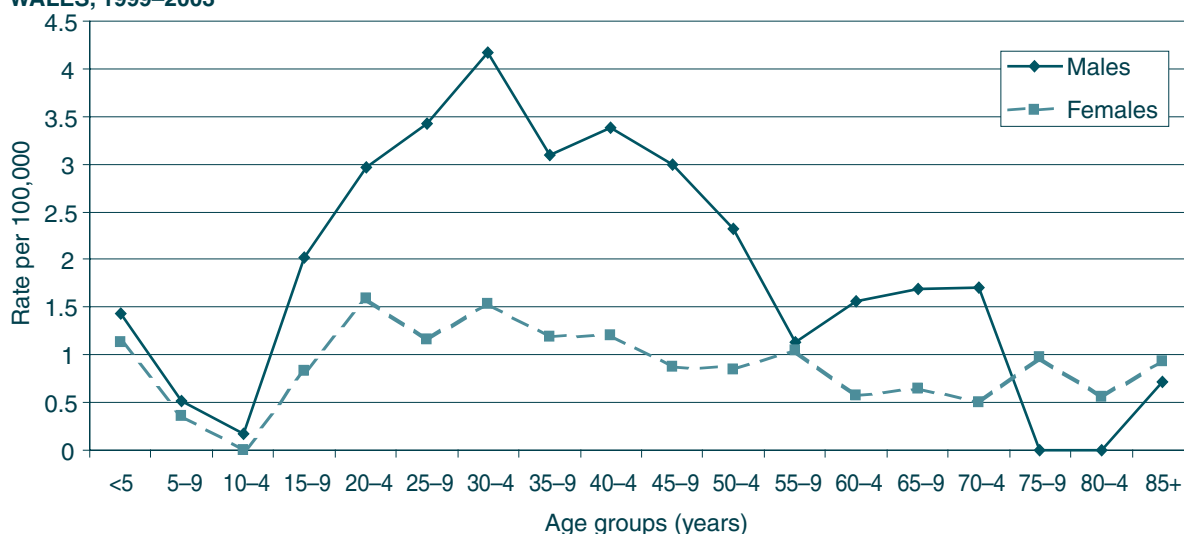


TABLE 1

**NUMBER OF DEATHS DUE TO INTERPERSONAL VIOLENCE AND DEATH RATES, BY METHOD USED:
NEW SOUTH WALES, 1999–2003**

Interpersonal violence method (Ecode)	All persons		Males			Females			Ratio‡
	n	Rate†	n	Rate†	95% CI	n	Rate†	95% CI	
Sharp or blunt object (X99, Y00)	201	0.61	137	0.84	0.70–0.98	64	0.39	0.29–0.48	2.15
Firearm (X93–X95)	118	0.36	95	0.58	0.46–0.70	23	0.14	0.08–0.20	4.10
Bodily force (Y04–Y05, Y07)	64	0.20	54	0.33	0.24–0.42	10	0.06	0.02–0.10	5.42
Hanging, strangulation or suffocation (X91)	38	0.12	11	0.07	0.03–0.11	27	0.16	0.10–0.23	0.41
Poisoning (X85, X87–X90)	13	0.04	6	0.04	0.01–0.07	7	0.04	0.01–0.07	0.87
Other and unspecified means (X86, X92, X96–X98, Y01–Y03, Y06, Y08–Y09)	61	0.19	41	0.25	0.17–0.33	20	0.12	0.07–0.18	2.03
All interpersonal violence (X85–Y09)	507	1.51	353	2.16	1.93–2.38	154	0.93	0.79–1.08	2.31

*Death rates have been age-adjusted using the 2001 Australian estimated residency population (ERP).

† Rate per 100,000 population

‡ Mortality ratio for male/female

for ‘hanging, strangulation or suffocation’, but these differences were not significant.

The interpersonal violence methods that most often led to a death were ‘sharp or blunt object’ and ‘firearms’, which accounted for 40 per cent (n=201) and 23 per cent (n=118) of all interpersonal violence deaths, respectively. The leading method of interpersonal violence death for both males and females was ‘sharp or blunt object’, accounting for 39 per cent of all male deaths and 42 per cent of all female deaths during 1999–2003.

DISCUSSION

The results of our analyses show that interpersonal violence deaths have decreased over time for both males and females. However, interpersonal violence still remains a leading cause of fatal injury in NSW, with males accounting for approximately 70 per cent of these deaths.

The reasons for the disparity between the sexes cannot be identified using death record data, but the large differences between the methods used may indicate that males are being fatally injured in situations where the presence of sharp or blunt objects and firearms is common. These methods are potentially more lethal than other methods of intentional violence.¹²

The results also showed that three populations are particularly at risk—children aged under five, men aged 15–44 years and people over 60. Although the information provided by the death records is limited, it is conceivable that deaths in children and people aged 60 and over are due to child and elderly abuse and maltreatment, respectively.¹

For men aged 15–44 years, it is more difficult to speculate on the types of violence that may be occurring. For example, the violence could be youth violence, gang violence, workplace violence or bar fights.

Although information regarding the factors that put men and certain age groups at increased risk of interpersonal violence is not obtainable from death record data, this information may be obtained from other sources.¹³ For example, a report on deaths due to assault in children and young people found that factors such as having a parent with a mental illness, family breakdowns and recurrent abuse put children and young people in NSW at risk of fatal assault.¹⁴ Other data sources include coroner’s data and police records.^{15,16}

These supplemental data sources can be used to explore other aspects of interpersonal violence that need to be understood before prevention policies and practices can be designed. These aspects include information about the events leading up to the incident of interpersonal violence, where it occurred and the persons involved. For example, information about the perpetrator of the violence and the location in which it occurred can be obtained using interpersonal violence hospitalisation records coded since July 2002.¹⁶

Given the current ICD coding system, death record data is only able to provide information about the demographics of the victims and the methods used to cause their deaths. Other sources of data identified above should be analysed in conjunction with death records to provide a more complete picture of the patterns of interpersonal violence in NSW.

ACKNOWLEDGEMENTS

The authors were supported by the NSW Injury Risk Management Research Centre, with core funding provided by the NSW Department of Health, the NSW Roads and Traffic Authority and the Motor Accidents Authority. Professor Caroline Finch is also supported by a Principal Research Fellowship from the National Health and Medical Research Council.

The authors wish to thank the Centre for Epidemiology and Research at the NSW Department of Health for providing the ABS death data from the Health Outcomes and Information Statistical Toolkit (HOIST) for analysis in this study.

The authors also wish to thank Dr Andrew Hayen, also of the NSW Risk Management Research Centre, for his help with the statistical analyses presented in this paper.

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