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A demographic study of homicide–suicide in the Pretoria region over a 5 year period

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ABSTRACT

A study was undertaken to research the occurrence of homicide–suicide events in the Pretoria region from January 1997 until October 2001. It is important to attempt understanding this tragic phenomenon from psychiatric and forensic perspectives. This uncommon phenomenon has attracted widespread and sensational media coverage, but little is known about the causal factors and demographic profile of perpetrators and victims, and possible sites of intervention. Case files of the Pretoria Medico-Legal Laboratory (where all cases of unnatural death in Pretoria are investigated) were reviewed and information collected from relevant investigating officers of the South African Police Services.

The average annual incidence of homicide–suicide in Pretoria over the period studied was found to be 1 per 100,000 of the population. Two profiles of typical perpetrators seem to emerge: a younger, single, black male shooting his girlfriend and himself at home; and an older, married, Caucasian male shooting his wife and himself at home.

Employment in peace forces and unemployment are shown to play significant roles, suggesting need for the availability of psychological support systems to members of peace forces and for intervention regarding unemployment.

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1. Introduction

An 18 year old apprentice, bricklayer shoots his 16 year old wife in the head following an after dinner argument. Dazed, he cries: 'Oh my God, what did I do? 'and proceeds to place the same revolver to his temple and pulls the trigger".[1]

Examples of homicide–suicide are mentioned in the Ming dynasty and earlier, in Greek mythology. As events of multiple deaths, they seem particularly tragic, especially when children are victimized either by direct involvement or as survivors.

The South African media has reported extensively on homicide–suicide events, a considerable number of which involve family murders and intimate femicide. Multiple possible explanations presented by the media were quoted, in a study on family murders by Graser, including the following: "At least 55 South Africans have been slaughtered by members of their families in little more than a year, for motives ranging from jealousy to summer heat" (Weekend Argus, 10/11/1984); "Sexual problems trigger family murders" (Sunday Star, 17/1/1988); "Apartheid 'major factor in regard to family murders' " (The Star, 17/8/1987).[2]

In a study of intimate femicide, defined as the killing of women by intimate partners, a total of 118 publications were drawn from the three largest newspapers within the Gauteng region: *The Sowetan, The Citizen* and *The Star* during the 2-year period between 1993 and 1994. This study, however, did not specify whether any of these incidents were followed by suicide of the perpetrator, thus constituting a homicide–suicide event.[3]

A murder–suicide event as defined by Marzuk et al. is a homicide followed by the perpetrator's suicide. There is however, no standardized operational definition.[4]

The Hanzlick–Koponen typology has the following special classifications, which can be divided into two broad categories: single victim and multiple victim events. In single victim events (dyadic deaths), a second victim acts in consent with, is associated with, or is killed by a person who contemporaneous with the first death then commits suicide. Dyadic deaths thus include both homicide–suicides and suicide pacts.[5]

In a study on murder–suicides in Central Virginia, it was found that single victim events were more common and that shooting was the method used in the majority of cases (94%). In the same study 91% of perpetrators were revealed to be male with a mean age of 41.0 years.[6]

An earlier study done in Los Angeles for the period 1970–1979 showed remarkably similar results, with 93% of perpetrators being male and 80% of victims being female. This study clearly shows that the majority (71%) of perpetrators were husbands or boyfriends of the victims. Again shooting was the most common method of murder (88%). Twelve percent of the victims, and 21% of the offenders had blood alcohol levels of 0.10 g% and higher.[7]

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In the majority of cases, the aggressor will use the same method or weapon to attempt suicide.[8,22] A study done by Milroy in 1993 again showed that most of the killers were married men who killed their wives, their wives and children or only their children.[9] Couples in strained relationships are frequently involved, and the predominant tool is the firearm.[10]

According to Felthous et al. depression is one of the most common disorders in homicide–suicides, especially in those who kill members of their nuclear family.[11] In a South African study on family murderers, Roos et al. found that 50% of perpetrators committed suicide.[12] Lecomte et al. did a study in Paris (1991–1996), which revealed that suicide notes were found near the victims in 50% of events, and that 75% of the offenders were severely depressed.[13]

Murder–suicide, as described by Felthous and Hemple, is a relatively uncommon event. This rarity has led to a wealth of epidemiological studies on this violent crime. However, the catastrophic natures of these events, as well as anecdotal reports suggesting an increase in the number of incidents, justify further studies of this rare phenomenon.[11]

2. Materials and methods

All cases in Pretoria seen from January 1997 to October 2001 were studied. Records from the Pretoria MLL (Medico-Legal Laboratory) were used, leading to the relevant investigating officers from the SAPS (South African Police Service).

Post mortem lists were reviewed, in order to obtain the Pretoria MLL death register number of the deceased, and identify relevant deaths. The correlating mortuary files, which contain autopsy reports and relevant SAPS documentation, were retrieved to gather information regarding the demographic profiles of the perpetrators and victims. Outstanding information was gathered by contacting investigating officers as mentioned above.

Consent for perusal of mortuary records and appropriate data retrieval was obtained from the Officer Commanding of the Pretoria MLL and the Director: Medico-Legal Services (Gauteng Department of Health). Confidentiality regarding individuals' identities was maintained by exclusive use of death register numbers, for retrieval of all information.

3. Results

Forty-six homicide–suicide cases were identified from 1 January 1997 to 31 October 2001. The distribution over the 5-year period studied was as follows (Fig. 1): 1997–1998 episodes; 1998–1912 episodes; 1999–2007 episodes; 2000–2011 episodes; 2001–2008 episodes. The annual incidence of homicide–suicide events in the Pretoria region ranged between 0.8 per 100,000 and 1, 3 per 100,000 of the total population, with an average annual incidence of 1 per 100,000 over the period studied.[26,27]

A total of 28 municipal areas drain cases to the Pretoria MLL. Seventeen areas recorded homicide–suicide events reported in this study. The municipal area where the most cases occurred was Mamelodi, with 26% (12). Atteridgeville recorded 13% (6) and other areas ranged from 2.0% (1) to 8.6% (4). The location of deaths was studied and 78.2% (36) of the episodes occurred in residential areas, 10.9% (5) in public areas, and 10.9% (5) in hospitals. Of the 46 cases, information regarding suicide notes was available in 17, of which 23.5% (4) had suicide notes present. Single victim events accounted for 91.3% (42) of the cases and multiple victim events 8.7% (4).

3.1. Perpetrators

There were 45 male perpetrators and 1 female perpetrator. The mean age of the perpetrators was 35, 1 years and the median 31 years. Of the perpetrators 78.2% (36) were black Africans, and 21.7% (10) were Caucasian. No cases were identified in the other ethnic groups (see Fig. 2). Almost half (22) of the perpetrators were married, 43.8% (21) single, 4% (2) divorced, and in a single case marital status was unknown.

Information regarding psychiatric history of perpetrators was available in only 15% (7) of cases. In these cases 42.9% (3) had a positive psychiatric history. Employment history was known in 78.2% (36) of the perpetrators, and 61% (22) of which were unemployed. Occupational status of perpetrators was known in 41.3% (19) of cases thereof 31.5% (6) were in the peace forces (this includes SAPS, Correctional Services, and private security companies). Alcohol was detected in 32.6% (15) of perpetrators' blood samples.

Shooting accounted for 95.7% (44) of the perpetrators' method of suicide (see Fig. 3) and hanging for the remaining 4.3% (2). Hand weapons were used in 93.1% (41) of the shootings, rifles in 4.5% (2) and in 2.3% (1) the gun types were unknown. Sites of wounds pertaining to gunshots were as follows: head 93.2% (41); thorax 2.3% (1); multiple sites 4.5% (2).

3.2. Victims

A total of 50 victims were identified, 90% (45) were female and 10% (5) male. The mean age of the victims was 30.5 years and the median age 27 years. The youngest victims were aged 1 and 7 years respectively. Black Africans represented 80% (40) and Caucasians 20% (10) of the victims. No other ethnic groups were represented.

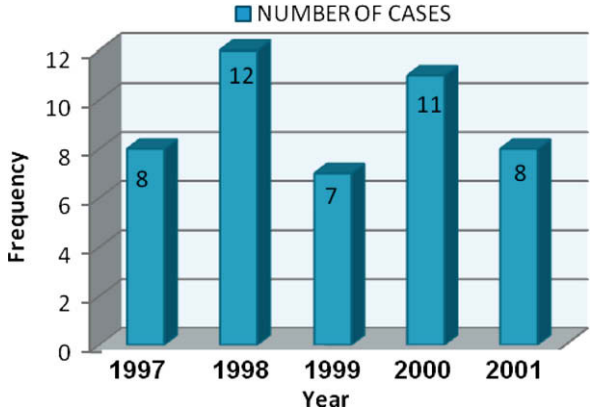

Fig. 1. Yearly distribution of cases.

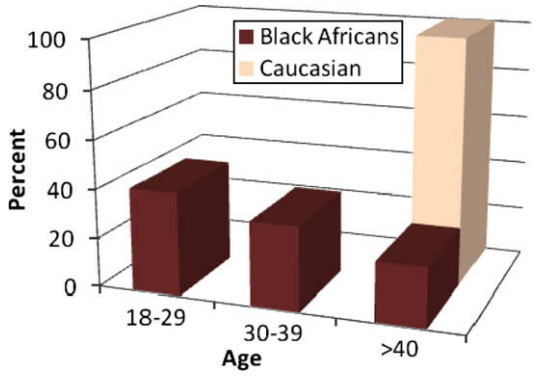

Fig. 2. Age and ethnic distribution of preparators.

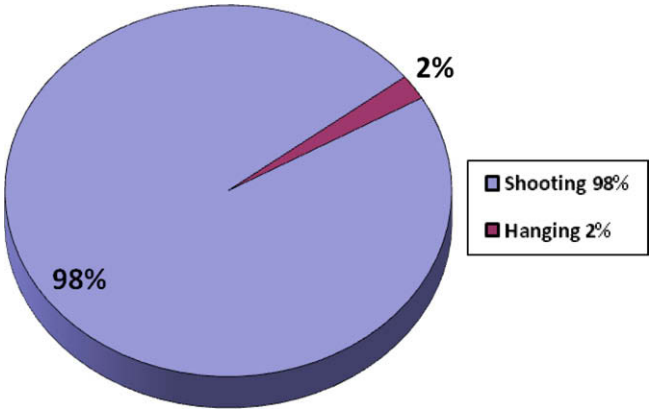

Fig. 3. Method of suicide.

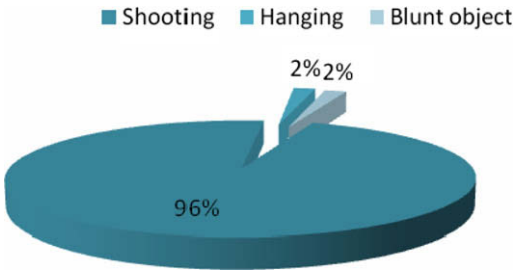

Fig. 4. Method of homicide.

Fifty four percent (27) of the victims were single, 4% (2) divorced, and 36% (18) married.

Employment status was available in 70% (35) of victims, of which 45.7% (16) were unemployed and 54.3% (19) were employed. Occupational status of 40.4% (21) of the victims was known, 33.3% (7) of these were scholars (this includes pupils and tertiary students). Shooting accounted for 96% (48); blunt object 2% (1) and strangulation 2% (1) as method of homicide (see Fig. 4). Sites of gunshot wounds were: head 54.3% (25); thorax 10.9% (5); multiple sites 34.8% (16).

No alcohol was detected in the blood samples of 84% (42) of the victims, but alcohol was detected in the remaining 16% (8). Regarding the relationship of the victim to the perpetrator, information was available in half (23) of the cases. Of the latter, 47.8% (11) were married, 17.3% (4) related, 30.4% (7) romantically involved, and 4% (1) otherwise acquainted to the perpetrator.

4. Discussion

The average annual incidence of homicide–suicide in Pretoria over the period studied was found to be 1 per 100,000 as compared to its overall homicide rate of 29.6 per 100,000 in 2001. Respective international rates of homicide–suicide compared to homicide have been reported as follows: Kentucky (1985–1990) 0.3 per 10,000, and 5 per 100,000; Australia (1989–1991) 0.16 per 100,000 and 2 per 100,000; Scotland (1986–1990) 0,05 per 100,000 and 1.75 per 100,000; England and Wales (1980–1990) 0.07 per 100,000 and 1.11 per 100,000.[14] It has been found that in countries with higher homicide rates, homicide–suicide events accounted for a relatively lower proportion of the total number of homicides, the number of homicide–suicide events being inversely proportional to that of the number of homicides.[17,18,20]

A study of intimate femicide–suicide by Matthews et al. covering 25 South African Medico-legal laboratories, reports a intimate femicide–suicide rate of 1.7 per 100,000.[15] Although most of the victims in this study are female, the lack of information with regard to victim perpetrator relationship in our study compromises assessment with regard to the actual rate of intimate femicide–suicide in Pretoria.

The annual frequency of cases remained relatively constant, with little variation between different years. A seasonal variation was observed, with peaks in autumn and winter. This might be correlated to the seasonal trend observed in some psychiatric disorders, especially those pertaining to mood. The frequency of episodes remained stable during different days of the week, but a distinct peak was noted on Sundays (see Fig. 5).

4.1. Sex

An epidemiological study of homicide–suicides in Kentucky from 1985 to 1990 revealed that nearly all offenders were male (97%).[19] That finding was replicated in this study. In a given society the male–female ratio of perpetrators can change over time. In an earlier British study by West (1946–1962) only 60% of the offenders were male, yet the more recent study by Milroy (1975–1992) found over 90% of offenders to be male.[9] If men in general are given to more lethal and violent means of dealing with frustration and disappointment, the higher rate of homicide–suicide among men should be of no surprise. Is there something innate to maleness that enhances the likelihood of all violent acts?[11]

The high incidence of male perpetrators tends to overshadow any distinctive characteristics of a female subgroup. The literature suggests, however, that women kill their children.[11,16] The single female perpetrator in this study also followed that pattern.

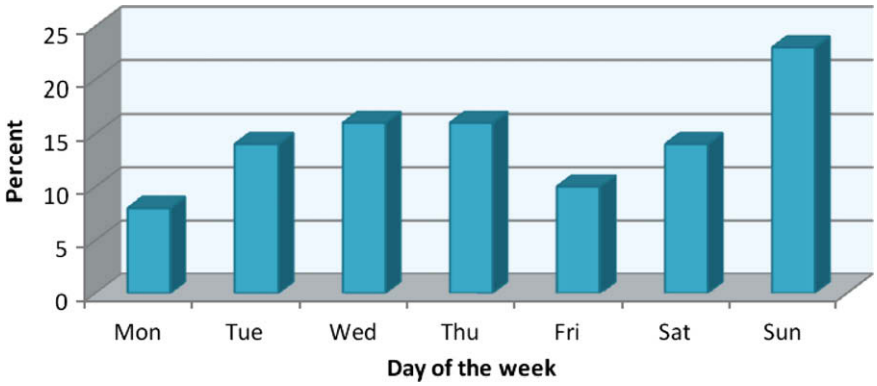

Fig. 5. Dialy distribution of cases.

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In the Kentucky study 73% of the victims were female, whereas this study showed a higher incidence of female victims (90%). This may reflect the prevalence of violence directed towards females of all age groups in our society. A romantic partner killed almost 80% of victims. Of this group nearly two-thirds were married to their killers.

4.2. Age

In this study perpetrators tended to be older than their victims are, the median ages being 31 and 27, respectively. In five British and American studies the median age of perpetrators ranged from 36–49 years, with a mean of 42.3 years. The younger age group in this study could reflect a group of people exposed to violence from an early age. Interestingly, there is a strong correlation between age and ethnicity. Black African perpetrators represent a younger age group (18–29), and there is pre-dominance of Caucasian perpetrators in the older age group (>40).

4.3. Ethnicity

The Pretoria population of black African males more than doubled from 117,146 in 1996 to 236,885 in 2001, that of Caucasian males only marginally increasing from 188,867 to 190,305 over the same time period.[26,27] Our study showed a predominance of black African perpetrators, the rate of homicide–suicide in this population between three and six times higher than that of the Caucasian population, ranging from 30.7 per 100,000 to 15.2 per 100,000 over the period studied, as compared to a constant rate of 5.3 per 100,000 in the Caucasian population. Surprisingly there was an absence of both Asian or Coloured perpetrators and victims in our study as compared to the study by Matthews et al. who reported 10% of the perpetrators and victims in their study to be from the latter two ethnic groups.[15]

In only one case was an ethnic difference noted between perpetrator and victim (perpetrator Caucasian; victim black African). All other cases were of a corresponding ethnicity. This may reflect the amount of interracial relationships in this area and correlates with a study of homicide–suicides done in Oklahoma, where the victims tended to be the same race as their killer.[28]

Among black African perpetrators 57.1% were single compared to 10% of Caucasian perpetrators. In contrast, 80% of Caucasian perpetrators were married, but black African perpetrators were married in 40% of cases. No correlation was found between ethnicity and employment status.

4.4. The act

In accordance with most other studies the majority of homicide–suicides took place in places of residence.

Shooting was by far the most common method used both in the homicide and suicide. This is also born out in the literature, a recent media publication stating that more than 90% of South Africa's domestic murder–suicides are committed by men who own licensed firearms.[23] Handguns were used most often. Presumably this relates to the availability of firearms in the area studied.

4.5. Alcohol intoxication

Approximately a third of perpetrators used alcohol prior to the act, with the highest frequency occurring in the 0.06–0.09 g% group.[24] The highest blood alcohol level among the perpetrators was 0.22-g%. When the blood alcohol was positive in the Caucasian sub-group, it was more frequent in the 0.1–0.2-g% range, but it was negative in 80% of these cases.

Among the black African sub-group 63.9% had a negative blood alcohol level, but if positive it tended to be in lower ranges than in Caucasian perpetrators. There was a slightly higher frequency of positive blood alcohol levels among employed perpetrators compared to unemployed perpetrators.

4.6. Typology

By far the majority of cases were single victim events. The causal factors in most single victim events were unspecified (66.7%), but there seems to be a predominance of social/financial stressors (16.7%) and amorous jealousy (13.9%).

Multiple victim events were rare. In the four multiple victim events all cases had no more than two victims. Two of the second victims were aged less than 8 years. Wilson and Daly define familicide as a kind of multiple victim homicide event in which the killers spouse or ex-spouse and one or more children are slain, reporting most of these incidents to have been perpetrated by males, as reflected in our study. The average age of familicide child victims and non-familicidal filicide victims in Canada was reported by them to be 7 years.[25] A review of homicide–suicides involving children by Byard et al., reported the average age of child victims in Australia to be 6 years.[14]

4.7. Practical considerations

Two profiles of typical perpetrators seem to emerge: A younger, single, black African male shooting his girlfriend and himself at home; and an older, married, Caucasian male shooting his wife and himself at home. Common characteristics include being unemployed, or employment in peace forces. Alcohol intoxication does not seem to play a significant role.

Since employment in peace forces was identified as a possible risk, there might be need for psychological support systems and possible interventions made available to members of this group.

4.8. Critique on the study

The method of record keeping at the Pretoria MLL tends to be inconsistent. A suggestion would be specifically noting possible homicide–suicide cases in the mortuary files. It is understood that this might be difficult due the constraints by the South African legal system.

Difficulty was experienced accessing the SAPS dockets, since the majority of files were being processes in the legal system. The SAPS rarely investigated information pertaining to psychiatric and social history. Due to ethical considerations the relevant family members could not be contacted. Virtually no information was available on criminal records, since the need to prosecute an offender was absent.

The relatively small number of available cases makes generalization of data statistically difficult.

Karl Menninger once wrote that suicide is motivated by desire to kill, desire to be killed, and desire to die: corresponding to anger and hostility, guilt and shame, hopelessness and despair.[11] Does homicide–suicide represent a social derailment or a mental derangement, or is combined homicide–suicide the result of both individual psychopathology and social factors? Wilson et al. describe two scenarios, the first variety in which the killer professes a grievance against his wife, usually with respect to alleged infidelities and/or her intending or acting to terminate the marriage, and the other in which the killer is a depressed and brooding man, who may apprehend impending disaster for himself and his family.[25,29] The latter is demonstrated by the case of a South African businessman who, facing bankruptcy and a probable prison term, shot his sleeping wife and children with a crossbow, set fire to his house,

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and then shot himself with a pistol. An excerpt published from his suicide note read as follows: "I lost the business due to a legal technicality, but, in the process, lost my house, my cars-just everything...I have summonses, judgements and attachment notices to the value of R2 million*...I cannot let my family suffer the degradation of losing everything we possess and being thrown penniless onto the street.[2] *(South African Rands).

Men who kill wives are typically moved by jealous, angry concern about the alienation of "their" women, whereas men who kill their children often appear to have acted more in sorrow than in anger (unless the victims were stepchildren). Men sometimes kill their wives in response to actual or suspected sexual infidelity, in response to the woman's efforts (and/or cues of intent) to leave, in order to discipline an "overly independent" wife, and in response to other factors (perhaps his own infidelity or paranoid delusions) that activate male sexual jealousy. Homicide may be viewed as an unusually extreme manifestation of conflicts that are not usually lethal.[25]

The despondent non-hostile killer appears to constitute a distinct category from the hostile accusatory killer.[25] A case report describing a homicide–suicide event involving Huntington's disease is described by Cina et al. This study describes a 60 year old victim father of the perpetrator, who suffered from advanced Huntington's disease, an autosomal dominant hereditary neurodegenerative disorder, characterized by personality changes including depression. The perpetrator, the son, a 30 year old man, had a history of depression, although at the time was not diagnosed with the disease. The father had allegedly asked his son to "end his suffering" in the weeks before his death.[30]

Milroy established breakdown of relationships and mental illness to be the leading reasons for homicide–suicide.[21] Graser identified a number of precipitating factors in perpetrators of family murders including marital and financial problems, unemployment, depression and social isolation, alcohol abuse, physical and mental illness and, particularly in the murder–suicide type of family murder, stated that victim precipitation in the form of the behavior of the spouse often provides a "trigger" for the family murder. Furthermore, it is usually a combination of several factors that precipitate family murder. A number of problems are usually related in a cause–effect relationship. The personalities of the perpetrators and their victims, the prevailing circumstances, and the manner in which the latter are experienced and defined, interact, possibly ending in tragedy.[2]

Notorious tragedies pull on the hearts of everyone. For health professionals, homicide–suicide reminds us both of our limitations and challenges us to extend our efforts to understand and heal.

Conflict of interest statement

None declared.

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Ethical approval

No ethical approval is needed.

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