The incidence and epidemiology of eldercide in the city of Johannesburg, South Africa

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ABSTRACT

The current study describes the incidence and epidemiological characteristics of eldercide (homicides among victims aged 60 years and older) in Johannesburg for the period 2001 to 2010. A retrospective population-based study was conducted on cases drawn from the National Injury Mortality Surveillance System. A total of 557 eldercides were recorded by NIMSS for the study period with an average annual rate of 23.1 per 100 000. The average annual rate for males was 42.4 per 100 000 and 8.9 per 100 000 for females. There was little variation in the rates by race. Eldercide victims were predominantly male (77.4%), black (48.3%) or white (43.2%), and were mainly killed by firearms (44.8%) or the use of blunt force (27.8%), in a private residence (66.0%), on a week day (53.8%) and during the day (56.1%). The study also found that the characteristics of eldercide varied across males and females, and across black and white race groups. The high incidence of eldercides points to the need for interventions that give special attention to the risk configurations and circumstances associated with these violent deaths.

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1. Introduction

Levels of interpersonal violence are exceptionally high in South Africa. South Africa's homicide rate of 31 per 100 000 reported in the *Global Study on Homicide 2013* is five times greater than the global average homicide rate of 6.2 per 100 000.[1] A number of studies have documented the incidence and epidemiological characteristics of homicide for specific vulnerable groups, including women,[2–4] children[5] and adolescents.[6] In contrast, little attention has been given to victims of homicide aged 60 years and older who also constitute a vulnerable group.

In South Africa, the percentage of the population aged 60 years and above has increased from 7.1% in 1996 to 8.0% in 2011, representing an increase from 2.8 million to 4.1 million older persons.[7] It is projected that by 2030 there will be approximately seven million elderly persons in South Africa.[7] Poverty and deprivation are among the main challenges faced by elderly persons in South Africa, particularly those among the black population.[7] High unemployment and the HIV/AIDS epidemic have also limited the support and care that the family can provide the elderly and has contributed to changes in household living arrangements. There is an upward trend in the prevalence of elderly single-member households (from 14.6% in 1996 to 20.2% in 2011).[7] There has also been an increase in the number of households headed by elderly persons from 1.7 million in 1996 to 2.9 million households in 2011 (19.9% of all households). A third (32.5%) of households headed by the elderly have five or more members, reflecting the degree of economic and social responsibilities that elderly persons assume in their families.[7]

The precarious status of the elderly is also evident in their exposure to violence in South Africa. Violence toward the elderly appears to be widespread and takes on a range of forms including physical abuse; verbal abuse; sexual abuse; financial abuse (mainly extortion and control of pension money and assets; neglect and a lack of respect); accusations of witchcraft (resulting in ostracism, physical danger, and seizure of assets); and systemic abuse (dehumanizing treatment at health clinics, pension pay points, and government offices).[8,9] Violence is also a leading cause of non-natural death among the those aged 60 years and older in South Africa.[10] Eldercide, the death of an elder person due to intentional injuries inflicted by another person,[11] forms part of South Africa's homicide burden with a rate of 25.2 per 100 000 population for people aged 60 years or older.[10] Like other forms of violence, eldercide negatively impacts families and communities, and places a

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significant economic burden on a country's health care, social support and criminal justice systems[12] undermining economic growth and social development.[13] Furthermore, as the population ages, the frequency of violence toward the elderly, and eldercides in particular, is also likely to increase as a public health and social problem in South Africa.

Therefore, in order to gain an understanding of the incidence and epidemiological characteristics of eldercide, for the purposes of informing prevention, the current study examined eldercide in the city of Johannesburg for the period from 2001 to 2010. The City of Johannesburg is one of eight metropolitan municipalities in South Africa and with an estimated 4.4 million population in 2011, Johannesburg has the largest population of all the cities in the country.[14] The majority of Johannesburg's population is younger than 30 years (54.5%), with adults between the ages of 30–59 years making up 38.9% and the elderly aged 60 years and older making up 6.6% of the population.[15] With respect to race, the population is mostly black (76.4%), followed by white (12.3%), coloured[1] (5.6%), and Indian (4.9%).[15] Although Johannesburg is the economic centre of South Africa, the city is also marked by high levels of poverty, unemployment, and socioeconomic inequalities which are possible risk factors for crime and violence. While recognising that there is no universal definition of the elderly, this study focused on elderly victims 60 years and older as this corresponds to the age group recognised by the South African government and is consistent with the World Health Organization's (WHO) definition of elderly persons.[16,17] The specific objectives of the study were: 1) to determine the incidence rates of eldercide for the city of Johannesburg for the period 2001 to 2010, and to establish the distribution of eldercide across sex, age and race; and 2) to describe the epidemiological profile of eldercide with specific reference to victim demographics (sex, age and race) and incident characteristics (weapon or method used, scene, and day and time), and to determine whether the epidemiological profile differs across sex, age and race.

2. Materials and methods

This retrospective cross sectional study analysed National Injury Mortality Surveillance System (NIMSS) data on eldercide victims (aged ≥60 years) that occurred in Johannesburg during the period from 2001 to 2010.

2.1. Study site

The City of Johannesburg was selected for the study as interpersonal violence repeatedly ranks among the top causes of non-natural death each year in the city,[18,19] and it is the only city for which NIMSS had full coverage of all injury deaths, including homicide, for the period 2001 to 2010.

2.2. Data

Data on all homicide deaths occurring among the elderly in Johannesburg, between the years 2001 and 2010, were drawn from NIMSS. NIMSS uses medico-forensic investigative procedures at participating state medico-legal laboratories to collect epidemiological information on injury deaths.[18] Medical practitioners or forensic officers complete a one-page data collection form after the medico-legal examination that is then captured onsite into a computerized database by designated staff. NIMSS records 21 items of information on victim demographics (age, sex and race), scene and geographical place of injury, time of death, external cause and apparent manner of death. The external cause of death refers to the mechanism or circumstance that preceded the death and is classified based on the International Classification of Diseases (ICD).[18] In the case of homicide, the external cause refers to the weapon or method used that resulted in death. The NIMSS only records the apparent manner of death as determined by the medical practitioner as the final manner of death is only determined after police investigations and court proceedings. All the captured data from the participating medico-legal laboratories are sent to the Violence, Injury and Peace Research Unit (VIPRU) (which is co-directed by the South African Medical Research Council [SAMRC] and the University of South Africa [Unisa]) at the end of each year, where it is cleaned and merged into a single dataset. As a collaboration between the SAMRC, Unisa, and the Department of Health, the NIMSS maintains the ethical standards prescribed by these agencies, and accordingly, the data analysed does not contain any identifying information regarding the victims. Ethical approval for the study was obtained from the Psychology Department's Ethics Committee at Unisa.

2.3. Data analysis

Age-specific rates for all eldercides were calculated to examine the incidence over the study period. The rates were calculated for each year from 2001 to 2010 by dividing the number of eldercides by the population aged 60 years and older estimated for the City of Johannesburg, and multiplied by 100 000. Population data for the elderly in Johannesburg were obtained from Statistics South Africa's 2001 and 2011 Census. The difference between the population figures for Census 2001 and Census 2011 were distributed across the years 2002–2010 to account for the growth in population numbers over the 10 year period. Eldercide rates were also calculated separately for males and females, and for the different race groups. Where relevant, 95% confidence intervals (CI) were computed directly for the difference between male and female rates to determine whether a significant difference exists. CIs not containing the value 0 indicate that the difference between the rates for males and females is significantly different with 95% confidence.

Frequency counts and percentages were used to describe the selected demographic characteristics of eldercide victims and incident characteristics, including the weapon or method used, homicide scene or location, and day and time of occurrence. Differences in eldercide characteristics between male and female victims, and between black and white victims, were assessed using Pearson's chi-square test (χ^2). A p-value smaller or equal to 0.05 was considered significant. Data were analysed using the IBM Statistical Package for Social Sciences (SPSS) for Windows, version 22.

3. Results

3.1. Epidemiological characteristics of eldercide

3.1.1. Incidence rates and trends of eldercide

A total of 557 eldercides were registered by NIMSS for Johannesburg during the 10-year period from 2001 to 2010. Table 1 shows that the highest eldercide rate was recorded in 2001 (29.6 per 100 000) while the lowest rate was recorded in 2003 (17.7 per 100 000). Although the eldercide rates showed some fluctuation

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[1] In South Africa, the terms 'black', 'coloured' (referring to mixed heritage), 'Indian', and 'white' were created through apartheid laws to refer to various population groups. The use of these terms does not imply that genetically distinct racial groups exist. The terms are used because of their significance as a result of the differential manner in which apartheid laws impacted, and continue to impact, on the lives of various South Africans.