

## Domestic homicide in Maputo Province, Mozambique

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### ABSTRACT

**Background:** Domestic Homicide is the most extreme form of domestic violence reported worldwide. Although in Mozambique there are public reports of domestic homicide, no research has been published that describes its pattern.

**Aim:** This study aims to describe the pattern of domestic homicides in Maputo Province, Mozambique.

**Method:** A cross-sectional descriptive and quantitative approach study was applied using autopsy report data from 2016 to 2017 at the Forensic Medicine Services at Maputo Central Hospital. All cases of domestic homicide were captured in an Excel database and exported to Stata software for analysis. Descriptive statistics was performed for victim's age, sex, education level, relation to the offender, place of occurrence, and means of killing. Logistic regression was applied to investigate associations of intimate partner homicide with these independent variables.

**Results:** From a total of 689 autopsies of homicide over the two years, 96 (13.9%) were victims of domestic homicide. Among them, 62 (64.6%) were males and 34 (35.4%) females, with the median age of 38.9 years (range 0–92). Forty (41.7%) victims had primary level education. The residence was the place of the homicide in 45 (46.9%) of the cases. As a means of killing, suffocation was used in 26 cases (27.1%), use of a blunt instrument in 24 (25.0%), and poisoning in 16 (16.7%) cases. Twenty-three (24.0%) cases were victims of intimate partner homicide. From 73 (76.0%) cases of non-intimate partner homicide, 32 (43.8%) were siblicide, 27 (40.0%) were filicide, and 14 (19.2%) parricide. From a multivariable logistic regression, intimate partner homicide was only found to be positively associated to the victim being female (OR = 6.17, 95% CI 1.28–29.79, p-value 0.024).

**Conclusion:** This research contributes to the understanding of the pattern of domestic homicide, which will be useful for the identification of preventive measures. More research is necessary to understand the social contexts that lead to domestic homicide.

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### 1. Background

Domestic violence is a pattern of behaviour that involves violence or abuse against a family member, either children, parents, sibling, current or former spouse or any other family member [1]. Domestic violence can take several forms, from verbal, psychological, sexual, physical abuse and in most cases can tragically result in death of the victim which is named domestic homicide (DH) [2–4]. Domestic homicide represents a significant public health problem reported worldwide affecting the lives of individuals, families and

communities [5].

When a domestic homicide is committed by a current or former spouse or by an intimate partner it is named intimate partner homicide (IPH). Non-intimate partner homicide (non-IPH) includes filicide (parents killing their children), siblicide (an individual killing a brother or sister) and parricide (children killing their parents).

A global study on homicide by the United Nations Office on Drugs and Crime revealed that in Europe in 2008, 35% of women were victims of IPH while 5% of all male victims were killed by spouses or ex-spouses [6]. In the United Kingdom, 37% of killed women were victims of IPH compared to males who constituted 6% of victims of IPH [7]. Fox et al. (2006) [8], found that approximately four to five women were killed by an intimate partner for every one male killed by an intimate partner.

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Gebo (2002), examining Supplemental Homicide Report data in US (1976–1994), found that approximately 2% of all known homicides were siblicide and Holt (2017), analysing thirty years of parricide in England and Wales (1977–2012) found a total of 693 cases. From 1970 to 1994 in Finland, a total of 292 child homicides occurred, 69% of the cases were filicide [11]. In Australia, four to five per cent of homicides are classified as filicides, representing approximately 20 cases each year [12].

In relation to DH, literature describes several means of killing according to the type of domestic homicide (IPH or non-IPH). These means could be strangulation, suffocation, firearms, blunt instruments, poisoning and burning [13].

As domestic homicide, it is expected that the Victim's or partner's residence be the commonplace of occurrence for many of the cases, even though it could happen in others places [2,10,14,15].

As it is a global public health problem, dedicated research attention on the causes and consequences of DH has been warranted. However, research on DH in Sub-Saharan Africa is still limited, and Mozambique falls in this group were having lack of information regarding death occurred as a result of domestic violence.

For the implementation of effective prevention measures to domestic violence, understanding of the magnitude, pattern and associated factors of the problem is required. This study aims to describe the pattern of domestic homicides in Maputo Province, Mozambique.

## 2. Methods

### 2.1. Study design

We conducted a descriptive, cross-sectional study type of research. The population was identified from the database of autopsy reports at the Forensic Services in Maputo Central Hospital. From the database in Excel format, all the cases of autopsies performed on victims of DH from January 1st, 2016 to December 31st, 2017 were extracted and included in the study. Victims of DH were identified by the relation of the victim to the perpetrator, which could be a former or current intimate partner or a relative. The data in the database was captured by administrative clerks from a handwritten report produced by the forensic doctor who performed the autopsy. Besides the relation of the victim to the perpetrator, the database contained information of the victim's sex, age, level of education, date and place of the homicide and description of the lesions found and the causes of death.

### 2.2. Data analysis

The data was exported from the Excel database to Stata software for cleaning and analysis. No identification of the victims was included on the data made available for analysis. Descriptive statistical analysis was performed for production of absolute and relative frequencies, stratified by type of DH, whether intimate partner homicide (IPH) or non-intimate partner homicide (non-IPH). Uni- and multivariate logistic regression was performed to investigate associations of intimate partner homicide in victims aged 20 years or more. Victims below the age of 20 years were excluded from the model as no case of intimate partner homicide was recorded in this group. Initial categories of the place of the homicide and means of killing were merged for the model of logistic regression analysis.

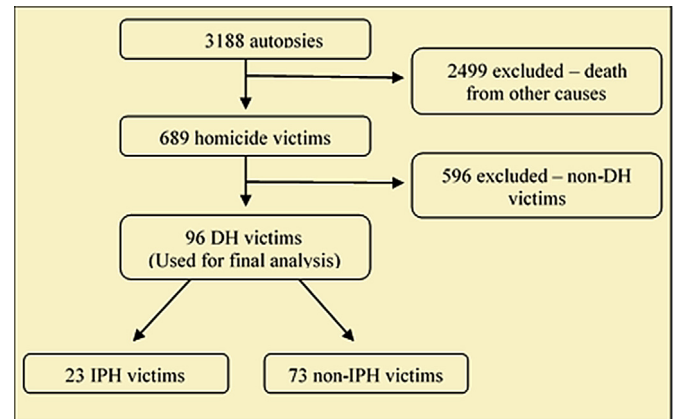


Fig. 1. Study participants flowchart.

## 3. Results

### 3.1. Basic characteristics

From a total of 3188 autopsies performed in 2016 and 2017, 689 (21.6%) were victims of homicide, and among them, 96 (13.9%) were victims of DH (see Fig. 1). Overall, 62 (64.6%) of the victims were male and 34 (35.4%) were female. The mean age (standard deviation) was 38.9 years (20.4) and 64 (66.7%) of victims had either no school or had just concluded the primary level. The victims' residence was the place of homicide in 45 (46.9%) of the cases, and the remaining homicides occurred at public or open spaces in isolated areas. In regard to the means used for the homicide, suffocation and use of a blunt instrument together occurred in more than just half of the cases, 27.1% and 25.0%, respectively. Other means of killing were poisoning, use of a firearm or cold weapon, burning and strangulation – Table 1.

Intimate partner homicide constituted 23 (24.0%) of cases, among them 11 (47.8%) were male, 12 (52.2%) were female and 15 (65.2%) aged 20–39 years old. Victims' residence was the place of IPH in 9 (39.1%) of cases. Use of a blunt instrument, strangulation, and burning occurred in 19 (82.6%) cases of IPH.

Non-intimate partner homicides comprised 73 (76.0%) cases, among them 32 (43.8%) were siblicide, 27 (40.0%) were filicide, and 14 (19.2%) were parricide. Male victims of non-IPH were 51 (69.9%) and female were 22 (30.1%) The residence of the victims was the place of homicide in 36 (49.3%) of the cases. Suffocation, use of a blunt instrument, and poisoning were the means of killing in 54 (74.0%) cases of non-IPH.

### 3.2. Factors associated with intimate partner homicide

From the multivariate logistic regression, the victim being female was the only factor found to be positively associated with intimate partner homicide (OR = 5.35, 95% CI 1.37–20.83, p-value 0.016). Though not statistically significant, older age groups tend to have reduced association to intimate partner homicide. School-level, place and means of killing were found not to be associated with intimate partner homicide (see Table 2 and Fig. 2).

## 4. Discussion

The present study described the patterns of domestic homicide in the Province and Maputo City, relying on routine data from Forensic Services. The Forensic Services performs autopsies of all cases of a violent or suspicious death in all geographical areas of Maputo

**Table 1**  
Other characteristics, frequencies, by type of domestic homicide.

	Domestic Homicide					Total N (%)
	IPH N (%)	Non-IPH			Subtotal N (%)	
		Sibilicide N (%)	Filicide N (%)	Parricide N (%)		
<b>Total</b>	23 (100.0)	32 (100.0)	27 (100.0)	14 (100.0)	73 (100.0)	96 (100.0)
<b>Victims' sex</b>						
Male	11 (47.8)	27 (84.4)	18 (66.7)	6 (42.9)	51 (69.9)	62 (64.6)
Female	12 (52.2)	5 (15.6)	9 (33.3)	8 (57.1)	22 (30.1)	34 (35.4)
<b>Victims' age</b>						
Median (p25–p75)	34 (29–50)	39 (31–47.5)	19 (6–35)	67.5 (56–73)	36 (27–53)	35.5 (28–53)
Min–Max	22–66	17–88	0–70	29–92	0–92	0–92
Mean (SD)	38.4 (12.9)	40.7 (14.4)	23.8 (20.4)	64.6 (15.5)	39.0 (22.3)	38.9 (20.4)
<b>Victims' age groups</b>						
0–19 years old	0 (0.0)	2 (6.3)	14 (51.9)	0 (0.0)	16 (21.9)	16 (16.7)
20–39 years old	15 (65.2)	14 (43.8)	8 (29.6)	1 (7.1)	23 (31.5)	38 (39.6)
40–59 years old	6 (26.1)	13 (40.6)	4 (14.8)	4 (28.6)	21 (28.8)	27 (28.1)
60+ years old	2 (8.7)	3 (9.4)	1 (3.7)	9 (64.3)	13 (17.8)	15 (15.6)
<b>Victims' school level</b>						
No school/minor age	5 (21.7)	5 (15.6)	7 (25.9)	7 (50)	19 (26)	24 (25.0)
Primary level	10 (43.5)	15 (46.9)	11 (40.7)	4 (28.6)	30 (41.1)	40 (41.7)
Above primary	8 (34.8)	12 (37.5)	9 (33.3)	3 (21.4)	24 (32.9)	32 (33.3)
<b>Place of homicide</b>						
Residence	9 (39.1)	12 (37.5)	15 (55.6)	9 (64.3)	36 (49.3)	45 (46.9)
Open space	10 (43.5)	10 (31.3)	3 (11.1)	3 (21.4)	16 (21.9)	26 (27.1)
Public place	4 (17.4)	10 (31.3)	9 (33.3)	2 (14.3)	21 (28.8)	25 (26.0)
<b>Means of killing</b>						
Suffocation	2 (8.7)	10 (31.3)	11 (40.7)	3 (21.4)	24 (32.9)	26 (27.1)
Blunt instrument	9 (39.1)	8 (25.0)	2 (7.4)	5 (35.7)	15 (20.5)	24 (25.0)
Poisoning	1 (4.3)	8 (25.0)	7 (25.9)	0 (0.0)	15 (20.5)	16 (16.7)
Burning	4 (17.4)	1 (3.1)	4 (14.8)	2 (14.3)	7 (9.6)	11 (11.5)
Firearms/cold weapon	1 (4.3)	4 (12.5)	2 (7.4)	4 (28.6)	10 (13.7)	11 (11.5)
Strangulation	6 (26.1)	1 (3.1)	1 (3.7)	0 (0.0)	2 (2.7)	8 (8.3)

IPH – Intimate partner homicide, SD – standard deviation.

**Table 2**  
Associations of intimate partner homicide in 20+ years old victims from logistic regression.

	Univariable logistic regression			Multivariable logistic regression		
	OR	95% CI	p-value	OR	95% CI	p-value
<b>Victims' sex</b>						
Male	Ref.			Ref.		
Female	3.35	(1.21–9.26)	0.020	5.35	(1.37–20.83)	0.016
<b>Victims' age group</b>						
20–39	Ref.			Ref.		
40–59	0.44	(0.14–1.34)	0.147	0.54	(0.15–1.90)	0.337
60+	0.24	(0.05–1.20)	0.081	0.22	(0.04–1.27)	0.091
<b>Victims' school level</b>						
No school	Ref.			Ref.		
Primary level	1.04	(0.29–3.69)	0.952	0.78	(0.19–3.2)	0.733
Above primary	1.09	(0.29–4.10)	0.893	1.18	(0.24–5.76)	0.836
<b>Place of homicide</b>						
Open/public space	Ref.			Ref.		
Residence	0.82	(0.31–2.21)	0.699	0.48	(0.14–1.64)	0.243
<b>Means of killing</b>						
Suffocation or strangulation	Ref.			Ref.		
Blunt instrument, firearm or cold weapon	4.80	(0.89–25.92)	0.068	1.07	(0.31–3.67)	0.913
Poisoning or burning	0.62	(0.05–7.57)	0.705	1.01	(0.23–4.39)	0.990

OR – odds ratio, Ref. – reference group.

Province. Generalization of the findings to the entire country is limited due to diversified socio-economic and cultural characteristics in different provinces. For example, in the southern region of the country where Maputo province is located the society lineage is

patrilineal in contrast to central and northern regions where the society lineage is matrilineal. These differences in familiar lineage may affect the domestic violence pattern in general; especially intimate partner violence or non-intimate violence including homicide.

Given this conditions of Mozambique, as a vast country with a multicultural environment, the generalization of the results to the entire country is limited.

The majority of literature refers that females are preferential victims of DH in comparison to males [7,16,17]. In contrast, the proportion of males who were killed in the present study was twice as high as the proportion of female victims, which is the opposite of what is described in the literature. Victims' average ages are comparatively similar to many studies published [14,18].

The fact that most victims have low education level may reflect the population education level in Mozambique, rather than hypothesising that lower education level is associated with being a victim of DH. Mozambique, as a developing country, has very high illiteracy rates of around 50.4% [19]. High illiteracy could be reflected in some way in the findings of the victims of DH, where two-thirds have equal to or lower than the primary level (7th grade).

Our findings that the victim's or partner's residence is the preferred place to commit homicide is corroborated by studies such as Kovačević and Pobutsky. Both Kovačević and Pobutsky found that majority of domestic homicides take place in a residence (59.9%) and (74.2%) respectively. Comparable to Pobutsky et al. 2014 [20] and Kovačević et al. (2010), our study supports the hypothesis that a residence is the preferred place to commit homicide. The values found by them fall approximately within those found in this study.

Studies have shown that there are a variety of means of committing DH. The common means of killing for most authors is strangulation, suffocation, firearms and the use of a blunt instruments [5,13,21]. Those means described are similar to those described in this study for general domestic homicide.

#### 4.1. Intimate partner homicide

Cases of IPH constitute an area of significant research worldwide. Contrary to general findings in IPH, where the victims are mostly female [7,22–24]. Our study found no tendency for who is most affected by IPH [25].

There are no significant differences regarding the age between this study and the others published [14]. A wide range of instruments used to commit IPH can be found, and according to the region or country where the study was conducted could be different. For Bows (2019), the most common form of IPH was stabbing, followed by strangulation, while for Velopulos et al. (2019) was the use of firearms and stabbing. Rude (1999), observed that it was the use of a blunt instrument, axes and firearms. In Maputo, a mix of different means of killing was observed. The victim's or partner's residence is the consensual place of almost all studies conducted for the IPH event [2,10,14,22].

#### 4.2. Non-intimate partner homicide

Cases of non-intimate partner homicide in the present study show correlation with what has been described by several authors [9,10,22,26], were males are by far the victims that are more affected.

The sibiicide is found in half of all cases of non-IPH and is observed in individuals below the average age of the present study [9]. Despite little attention paid to studies related to parricides, they do happen. Our findings are similar to those of Bows (2019) and Benbow et al. (2019), where both described in their studies that the victims were over sixty. Velopulos et al. (2019), Holt (2017) and

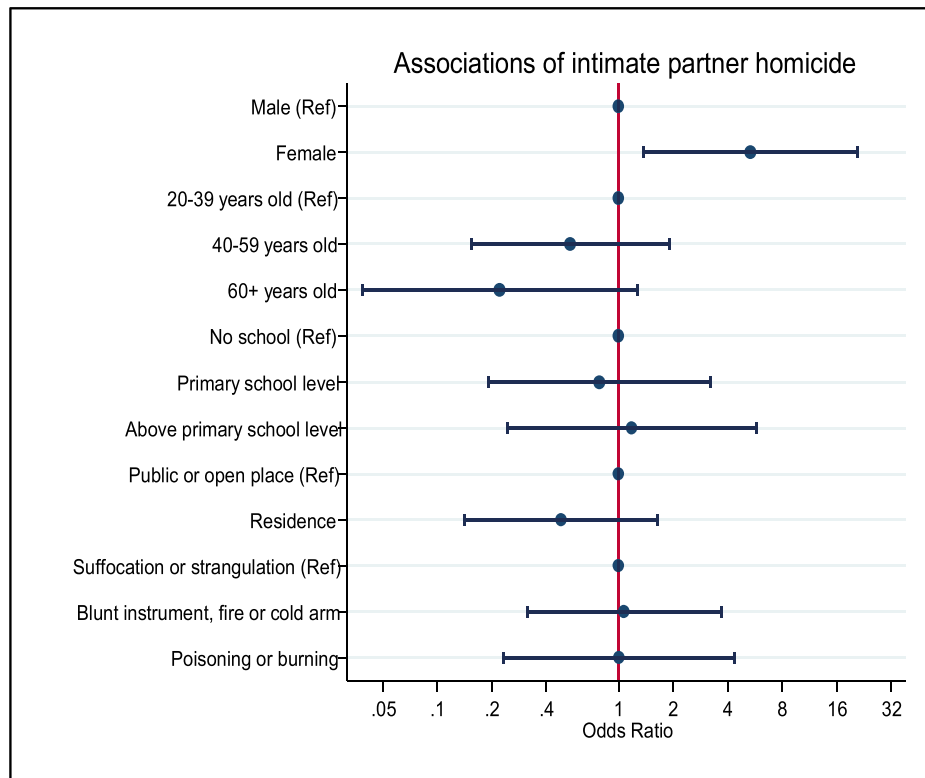


Fig. 2. Associations of domestic violence intimate partner homicide.

Stöckl et al. (2013), described that for the vast majority a non-intimate partner homicide tend to occur in the victim's or partner's residence and sometimes in public spaces, similarly to that shown in this study.

Small differences in the means of killing in non-IPH were described in the literature. In parricides and siblicide, stabbing was more often used [22,27], while in filicides it was strangulation [13,28]. The present study found that as means of killing, strangulation was used for siblicide and filicides, and blunt instrument used for parricides.

## 5. Conclusions

Domestic homicides constitute a problem that requires effective measures for preventing premature deaths among economically active people. Additional measures and policies should be implemented to prevent DH in general. Fatality review studies should be done for better understanding of factors and causes contributing to DH.

### Ethical approval

The Institutional Committee on Bioethics in Health Faculty of Medicine & Central Hospital Maputo approved this study.

### Declaration of competing interest

The content is the entire responsibility of the authors and does not represent the official views of the Committee on Bioethics. There are no conflicts of interest to declare.

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