

A retrospective study of murder–suicide at the Forensic Institute of Ghent University, Belgium: 1935–2010

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Abstract

Murder followed by suicide (M–S) is a rare phenomenon that has been studied in several countries. Previous studies show that offenders of M–S are predominately men who live in an intimate relationship. Amorous jealousy is often the trigger to commit M–S. Shooting is the most common way to kill a partner and/or children. In general, women are likely to become victims. The aim of this study was to identify M–S and detect patterns of M–S in the district of Ghent and the surrounding areas, since no research on this event was conducted in Belgium. Over a period of 75 years, a total of 80 M–S incidents was recorded involving 176 individuals. Eighty-six percent of the offenders were males and 14% were females. Murder–suicides were mostly completed with firearms. The main motive for offenders to execute M–S is amorous jealousy (56%), followed by familial, financial, or social stressors (27%). In addition, three types of M–S were selected (e.g., spousal murder–suicides, filicide–suicides, and familicide–suicides). Our results suggest differences in these types of M–S in which younger couples' intentions were amorous jealousy; as for older couples the prominent motive was mercy killing; most likely women killed their children and only men committed familicides. Finally a study of the evolution during this period was carried out.

Keywords

murder-suicide, Belgium, retrospective study, amorous jealousy, mercy killing, familicide, filicide

Introduction^a

Murder followed by suicide (henceforth referred to as M–S) is a rare phenomenon that has been studied worldwide.^{1–8} Murder–suicide can be described as a dyadic act where a perpetrator kills at least one victim and shortly afterwards commits suicide. This incident has a severe impact on both the offender's and the victim's family, their close friends, and society in general.^{9,10} Several terms are used in literature to describe this phenomenon such as homicide–suicide,¹¹ dyadic death,⁹ and extended suicide.^{12–14} However, there is no universal definition for this relatively uncommon event.^{10,15} In the United States, the overall incidence shows a rate of 0.2–0.3/100,000 per year.^{6,15–17}

The most important typology concerning murder–suicide is a classification by Marzuk et al.,¹⁵ which was later modified by Hanzlick and Koponen.¹⁸ M–S cases were categorized into five types according to the victim–offender relationships and the principal motives of the offenders.¹⁵ Most M–S occur within a spousal relationship, where amorous jealousy is the principal motive. In this group concerning marital relationships, a subgroup was designed for elderly partners. These older persons may be confronted

with illness and are therefore at great risk of being killed out of mercy.^{15,19} A third common form of M–S is filicide–suicide, where a parent kills his/her children. A reason why parents commit filicide can be found in depression or “deluded altruism.”^{20–22} A fourth category involves familicide–suicide, where multiple family members are killed by usually a male family member.²³ In this case, the perpetrator's motive is triggered by familial, financial, or social stressors, and therefore the act may seem an altruistic M–S.²⁴ Extra-familial murder–suicide can be seen as a kind of vengeance because the perpetrator feels misunderstood by society. This last type may occur in work-related environments and is rather uncommon.¹⁰

We designed a sample for M–S incidents in the district of Ghent and the surrounding areas. Ghent is the capital of the province of East

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Flanders, part of the Flanders region. The province East Flanders is 2982 km², and consists mostly of mixed populated areas.^{b,c} The purpose of this study is to identify M–S and to detect certain patterns in M–S events. In order to better understand these events, we will study the characteristics of victims and perpetrators, and focus on their motives to make precautionary suggestions for future research.

Data and methods

In Belgium, it is a legal requirement for any case involving a violent death or a potentially suspected death to be investigated by a medical expert commissioned by the Court.²⁵ From the end of World War II until the mid-1990s, the Department of Legal Medicine at Ghent University collaborated with the nearby province of West Flanders in setting up a database covering violent or unexpected deaths in West and East Flanders. Overall, seven legal districts (Ghent, Dendermonde, Oudenaarde, Bruges, Courtray, Veurne, and Ypres) were included in this study.

Information about the M–S cases was gathered from the medico-legal archive of the Department of Legal Medicine at Ghent University for the 75-year period from 1935 to 2010. Belgium has no National Violent Death Reporting System (NVDRS)^d yet.²⁶ Therefore, M–S cases were manually matched: the corresponding perpetrator file was identified via the victim file. We have chosen for a 24-hour time frame in which the murder, and suicide must occur.¹⁹ The following parameters in the M–S records were examined: age, marital status, medical history, relationship between victim(s) and perpetrator, manner and cause of death, autopsy findings (including toxicology), existence of a suicide note, and latent motive. When the records were incomplete, an update of these missing variables was done via the State archive, where the files of East and West Flanders are saved. Furthermore, the files were completed with newspaper clippings from the Liberal newspaper archive located in Ghent. Because some data still remain unattainable, in particular on parents who kill their children and on older offenders who murder their partner, there might be an underestimation of certain parameters in this study such as latent motives. We note that cases concerning mass murders, suicide-pacts, attempted suicides, and suicide-by-cop²⁷ were excluded. Statistical analysis was performed using IBM SPSS Statistics 19.

Results

All offenders and victims

Between 1 January 1935 and 31 December 2010, a total of 80 M–S incidents involving 176 individuals

were recorded in Ghent and surroundings. All individuals involved in these cases were divided into two main categories: offenders and victims. First, we will focus on general findings in murder–suicide for these two groups. In addition, Marzuk et al.'s classification in type of relationships will be taken into account namely, (i) Spousal or consortial and (ii) Familial. No further consideration was given to extra-familial M–S since there was no such case in our study. Finally, an evolutionary view of M–S recorded at the Forensic Institute of Ghent University will be given.

Offenders

Eighty-six percent of the 80 offenders were males and 14% were females. Their mean age is 45 years with the youngest and oldest offenders being 17 and 86 years old, respectively. In only one-third of the cases, individuals' socioeconomic status (SES) was accessible. Twelve offenders were assigned to lower social class, while 15 offenders were allocated to middle class. Thirteen of the 22 offenders (59%) who had a medical history suffered from a mental disease, specifically depression. Six of the 22 offenders (27%) suffered from a physical disease. We must note that three offenders had a combination of both a mental and physical disease (14%). More specifically, these three offenders have also suffered from a depression. So, slightly less than three-fourths of the 22 perpetrators experienced a depression of whom a quarter of the offenders were females. Unfortunately, we do not know if their physical disease has led to the actual depression.

Of all 80 offenders, 33% were under the influence of alcohol. The mean B.A.C. for offenders was 1.22 g/L (range, 0.07–2.80). Most suicides were completed with firearms (55%), followed by asphyxia (35%) (Table 1). More specifically, 23 of the 28 offenders (82%) who committed suicide by asphyxia, killed themselves by hanging, two killed themselves by carbon monoxide poisoning, and three offenders drowned themselves.

Offenders were more likely to be found in the sleeping room and in public places (both 20%). A suicide note was found in 34% of the identified cases. Of 28 of the 80 offenders the motive remained missing. The most important motive for offenders to execute M–S was amorous jealousy (56%), followed by familial, financial, or social stressors (27%). Adding up mercy killing and altruistic suicide indicated that 15% have chosen these motives to perform M–S. One person's intention was unspecified. The overall incidence of M–S showed that a lot of events occurred in the 1990s (Figure 1). The highest frequency of all M–S was found in 1993. Unfortunately, no patterns were detected. Between 1935 and 1940 no cases of M–S were found.

Victims

Eighty of the 96 victims (83%) were females, while 17% were male homicide victims. Mean age was

Table 1. Distribution cause of death of offenders ($N=80$) and victims ($N=96$) in all M-S incidents.

Cause of death		Frequency	%	
Offender	Valid	Asphyxia ^a	28	35.0
		Sharp injury	2	2.5
		Gunshot wounds	44	55.0
		Poisoning	1	1.3
		Rail accident	2	2.5
		Other ^b	3	3.8
		Total	80	100.0
Victim	Valid	Asphyxia ^a	17	17.7
		Sharp injury	9	9.4
		Gunshot wounds	52	54.2
		Rail accident	3	3.1
		Blunt force	12	12.5
		Other ^b	3	3.1
		Total	96	100.0

^aAsphyxiating techniques included hanging; strangulation (by hand or by an instrument); carbon monoxide poisoning (CO); drowning; traumatic injury.

^bOther includes combined causes of death such as strangulation (by hand) and sharp injury; hanging and sharp injury; blunt force and sharp injury; fire and sharp injury.

35 years (range, 2 months–82 years). Accessible data on victims' SES showed a total of 22%. Fourteen victims (67%) were consigned to middle class and seven (33%) to lower class. Thirteen percent of the victims were intoxicated by alcohol. The mean B.A.C. for the victims was 0.47 g/L (range, 0.04–0.97). Victims were mainly murdered by firearms (54%) (Table 1). Regarding the asphyxiating techniques, seven of the 17 victims (47%) were strangled, three victims were killed by carbon monoxide poisoning, and two persons were hanged, while two others were strangled manually. Three victims were drowned. Over the years, the most important cause of death of victims was firearm related (Figure 2). The two most common places the bodies of the victims ($N=86$) were to be found, were in the sleeping room (37%) and the kitchen (22%). Both in the living room as well as in public places, 13% of the bodies were found. Six percent were discovered in the hallway, 4% of the victims in the bathroom, 2% in the attic, and one victim in the garage. Two percent of the bodies were found at the house estate. Of 10 bodies no place was indicated.

Types of M-S

Forty-seven offenders (60%) of the cases had spousal or consortial bonds. Marital status of seven couples was missing.

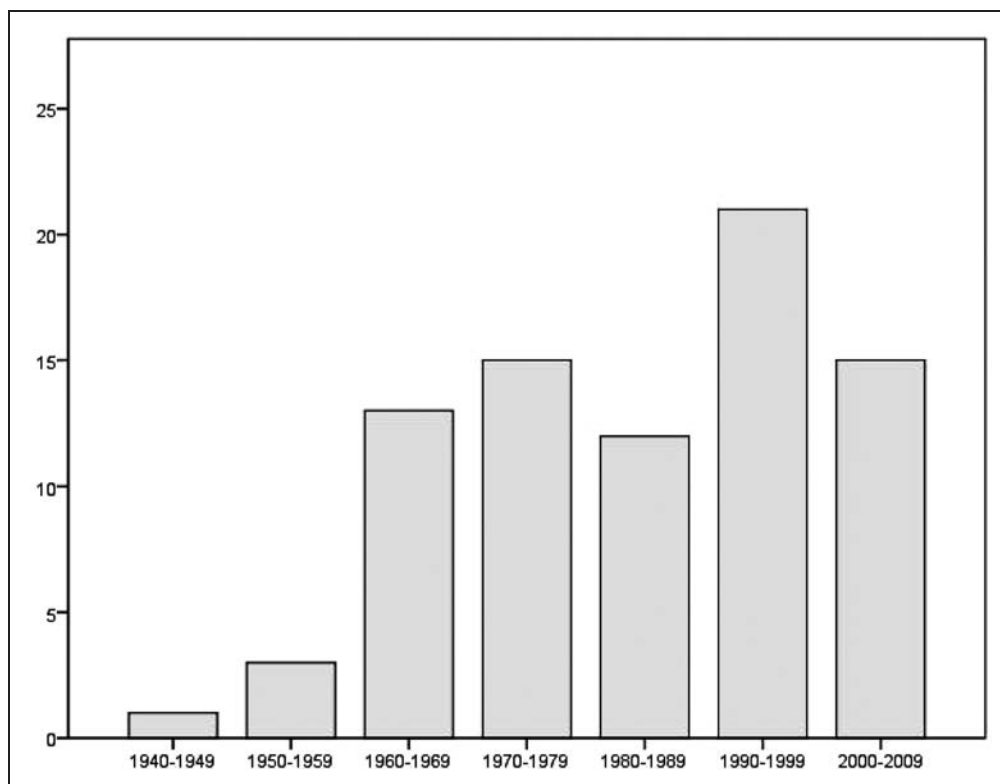


Figure 1. Temporal distribution of all M-S incidents ($N=80$).

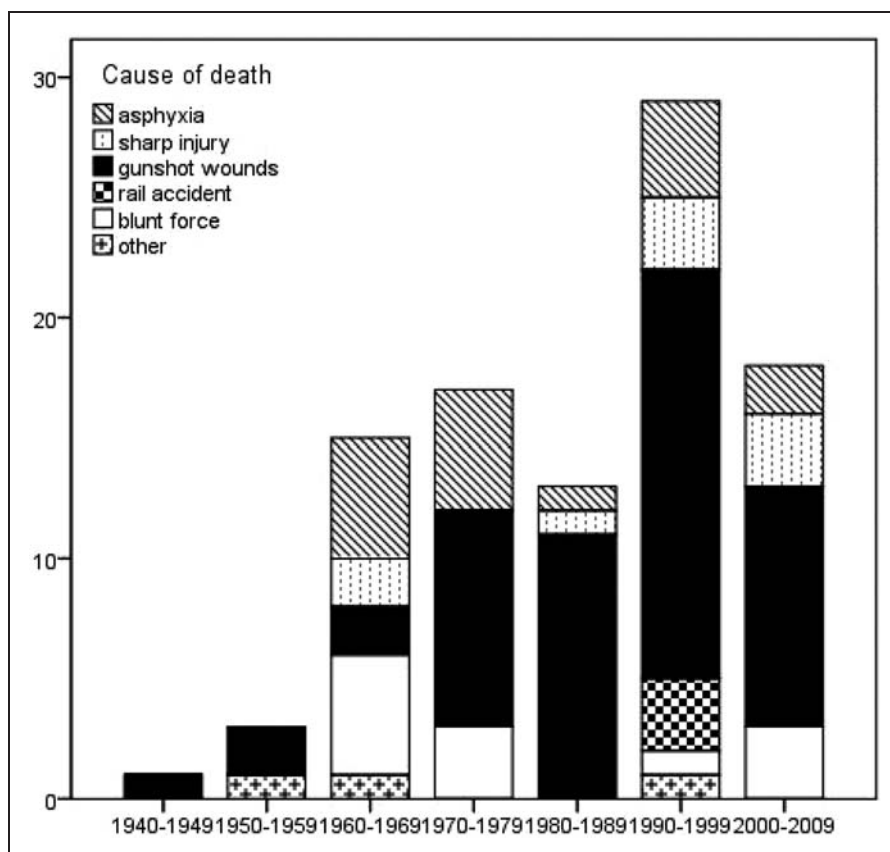


Figure 2. Temporal distribution of all M-S incidents ($N = 80$) and cause of death of victims ($N = 96$).

Spousal or consortial

According to Cohen and Eisdorfer,²⁸ we divided this group into two categories. On the one hand, a group in which individuals were younger than 55 years, or at least one partner was younger than 55 years, and had a spousal or consortial relationship ($N = 28$). On the other hand, an elder spousal/consortial group, both offender and victim were at least 55 years ($N = 19$).

Offenders younger than 55 years: Hence, 28 offenders, younger than 55 years, had an average age of 40 years (range, 21–68). Ninety-six percent of the offenders were men. Only two offenders suffered from depression. Slightly more than one-third of the offenders had used alcohol. Mean B.A.C. was 1.25 g/L (range, 0.60–2.80). None of the offenders had taken medication. Most offenders carried out their suicide with firearms (71%) (Table 2). In the majority of the cases, the bodies of offenders were found in the sleeping room (27%), followed by the living room (19%), and in public spaces (15%). Only two offenders had left a suicide note at the crime scene. No suicide notes were left behind by 14 offenders. Unfortunately, in the remaining 12 M-S incidents, it remained unclear whether suicide notes were found at the crime scene, since it was not recorded in police reports. M-S is mostly driven by amorous jealousy (80%), although the motive of eight couples was missing.

Table 2. Distribution cause of death of offenders ($N = 28$) and victims ($N = 28$) in spousal/consortial relationships (<55 years).

Cause of death		Frequency	%
Offender	Valid		
	Asphyxia ^a	7	25.0
	Sharp injury	1	3.6
	Gunshot wounds	20	71.4
	Total	28	100.0
Victim	Valid		
	Asphyxia ^a	2	7.1
	Sharp injury	1	3.6
	Gunshot wounds	20	71.4
	Blunt force	3	10.7
	Other ^b	2	7.1
	Total	28	100.0

^aAsphyxiating techniques included hanging; strangulation (by hand or by an instrument); carbon monoxide poisoning (CO); drowning; traumatic injury.

^bOther includes combined causes of death such as strangulation (by hand) and sharp injury; hanging and sharp injury; blunt force and sharp injury; fire and sharp injury.

Regarding the 28 victims, younger than 55 years, mean age was 37 (range, 20–52). The results showed that 96% of the victims were females. Likewise of the offenders, only two victims had a disease; however, these illnesses were physical related. The majority of

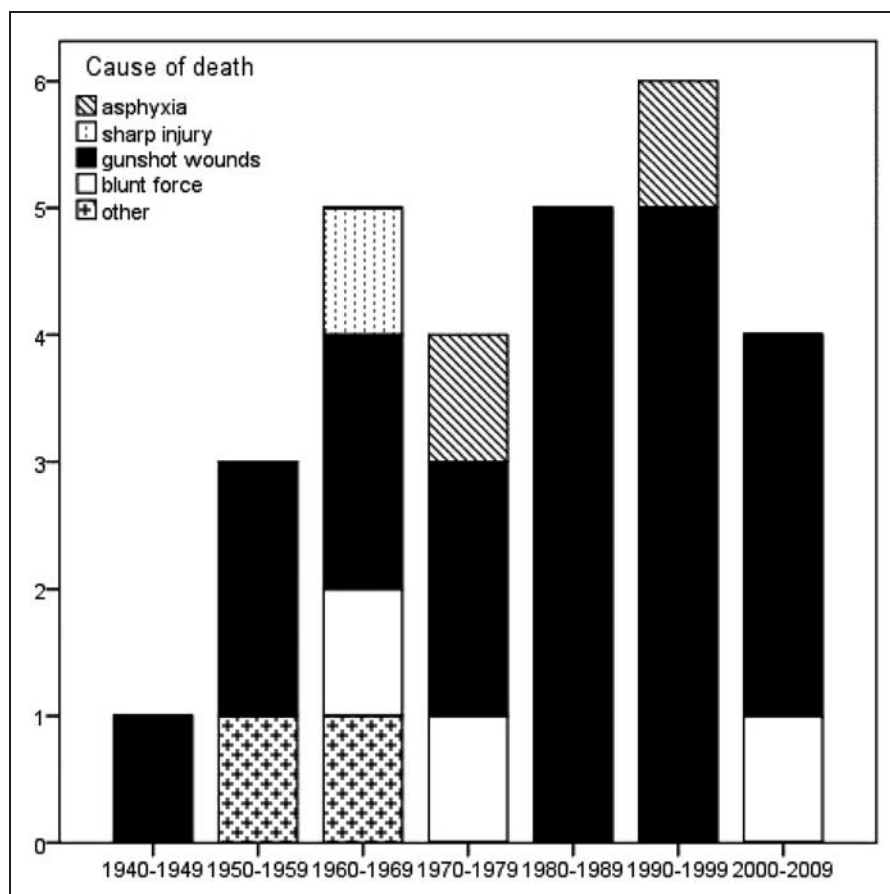


Figure 3. Temporal distribution of M-S in spousal couples and cause of death of victims in couples < 55 years ($N = 28$).

the victims did not use alcohol, and similar to the offenders, none of the victims had taken medication. Gunshot wounds were the main cause of death in victims (Table 2). Two victims had combined causes of death: sharp injuries in combination with fire and sharp injuries in combination with blunt force. Most victims were found in the sleeping room (39%). The second most common place victims were found was in the kitchen (27%).

In all decades, spousal M-S, between younger couples, was observed. Only one M-S was noted in the 40s, while in the 90s a peak of six M-S incidents was reached (Figure 3). An overview of all causes of deaths of victims younger than 55 years, showed a general usage of firearms that was more pronounced in the three last decades (Figure 3).

Elderly offenders (55 years and older): Nineteen older offenders were assigned to this group. This group showed that the older offender had a mean age of 63 years (range, 58–81). Ninety-five percent of them were males. Nine of the 19 offenders (47%) had a medical history of whom four have been suffering from depression (Table 3).

Alcohol intoxication was detected in 27% of older offenders. Mean B.A.C. was 1.41 g/L (range, 0.60–2.62). One female offender had taken medication

Table 3. Distribution subdivision of diseases of older offenders ($N = 19$) and older victims ($N = 19$) in spousal M-S.

Subdivision of diseases			Frequency	%
Offender	Valid	Mental disease	4	21.1
		Physical disease	5	26.3
		N/a	10	52.6
		Total	19	100.0
Victim	Valid	Mental disease	1	5.3
		Physical disease	5	26.3
		N/a	13	68.4
		Total	19	100.0

N/a: no diseases were detected.

(Vesparax). The most common suicide methods were asphyxiating techniques (53%), with hanging as the leading method. Firearms were used in 37% of the suicides (Table 4). Offender's bodies were found either in the garage (22%) or in the sleeping room (22%). In half of the cases, a suicide note was found at the scene. In six of the 14 older offenders (43%), mercy killing was the leading motive, followed by amorous jealousy (36%). Three offenders committed M-S based on familial, financial, or social stressors. There were five missing motives.

Table 4. Distribution cause of death of older offenders ($N = 19$) and older victims ($N = 19$) in spousal M–S.

Cause of death		Frequency	%	
Offender	Valid	Asphyxia ^a	10	52.6
		Sharp injury	1	5.3
		Gunshot wounds	7	36.8
		Poisoning	1	5.3
		Total	19	100.0
Victim	Valid	Asphyxia ^a	4	21.1
		Sharp injury	1	5.3
		Gunshot wounds	8	42.1
		Blunt force	6	31.6
		Total	19	100.0

^aAsphyxiating techniques included hanging; strangulation (by hand or by an instrument); carbon monoxide poisoning (CO); drowning; traumatic injury.

Focusing on the 19 victims in their later life, results showed a mean age of 62 years (range, 55–82). Ninety-five percent were female victims. Medical problems were seen in six cases (32%), which was generally physical related (Table 3). Two victims had used alcohol before they were killed. A cocktail of barbiturates (e.g., Rohypnol, Phenergan, and Luminal) was administered to a woman who had been strangulated. Eight victims (42%) were shot. Six victims (32%) were murdered through blunt force (Table 4). Twenty-eight percent of the victims were found in the sleeping room. Both the living room and kitchen were the second most common places, where the victims were discovered. Our study showed that spousal M–S in older persons did not occur in the first two decades, 40s and 50s, respectively. A decline of M–S in this subgroup was seen in the 80s (Figure 4). In the 60s, it seemed that offenders were triggered by financial stressors to kill their spouses. Unfortunately, five motives remained unclear. Initially, victims have the tendency to get killed by blunt force. However, in the year 2000, the use of firearms became predominant (Figure 4).

Familial

Filicide–suicide: Twelve filicide–suicide incidents, in which children were younger than 16 years of age, were identified in our study. The offender's mean age was 36 years (range, 28–55). Mothers (75%) were more likely to kill their children than fathers. In half of the cases, offenders suffered from depression. Toxicological screenings showed two offenders who had used alcohol (respectively, 1.40 and 2.59 g/L). Medication had been detected in two perpetrators. Of three offenders, no toxicological data was accessible.

In more than half of the cases, asphyxiating techniques such as hanging, drowning, and carbon

monoxide poisoning were used to commit suicide. One-fourth of the perpetrators shot themselves (Table 5).

In 33% of the filicide cases, the offender's body was found in a public place. Forty-six percent of the offenders had left a suicide note. The most important reason for filicide–suicide was amorous jealousy which accounted for 56%. We must note that three motives could not be retrieved.

As previously mentioned, this subgroup included 12 incidents. Two adults of 23 and 56 years old, killed by their father, were excluded because the focus of this subgroup was on children younger than 16. Fifteen juvenile victims of whom 10 girls (67%), were murdered by one of their parents. The children's mean age was nine years (range, 2 months–15 years). Firearms were less used (20%); one mother killed both her daughter and herself with a gun. No sharp or blunt force was used in filicide–suicide (Table 5). One child was sedated with Lendormin, before she was shot by her father.

According to Marzuk et al.'s classification of filicide, three infants (between 1 day and 1 year old) were killed in these events while 12 pedicides (range, 1 year–16 years old) had occurred. As similar as in older couples, our results showed that filicide–suicide seems to begin in the 60s. However, the incidence of filicide followed by suicide appears to remain stable throughout the years. Offenders who kill their children seemed to prefer asphyxiating techniques to kill themselves afterwards. A similar pattern was shown in the cause of death of juvenile victims (Figure 5). Four of the 15 children were killed in the 60s, and all of them were asphyxiated, while in the further years other causes of death occurred. In the 90s, three juvenile victims were killed in railway deaths.

Familicide–suicide: In this study, eight familicide–suicide events were identified. All familicides occurred within the core of the family, however in one case, one triadic lover was killed as well. All perpetrators of familicide were men. None of the offenders had taken medication. Only one offender had a B.A.C. of 1.85%. In three cases, a suicide note was found in which the intentions were explained. Amorous jealousy and financial/social stressors were the most important motives in familicide–suicide, respectively, 60% and 40%. Three motives remained missing.

Sixty-four percent of the children got murdered with firearms whereas 56% of the adults were shot (Table 6). Eleven children were murdered of whom eight girls. All but one were pedicides. Guns were also the most favorable suicide weapons. Our findings suggest that familicides–suicide s occurred more frequently in the last two decades, respectively, four M–S incidents in the 90s and three in the first decade of the 21st century. Only one M–S incident occurred in the 70s.

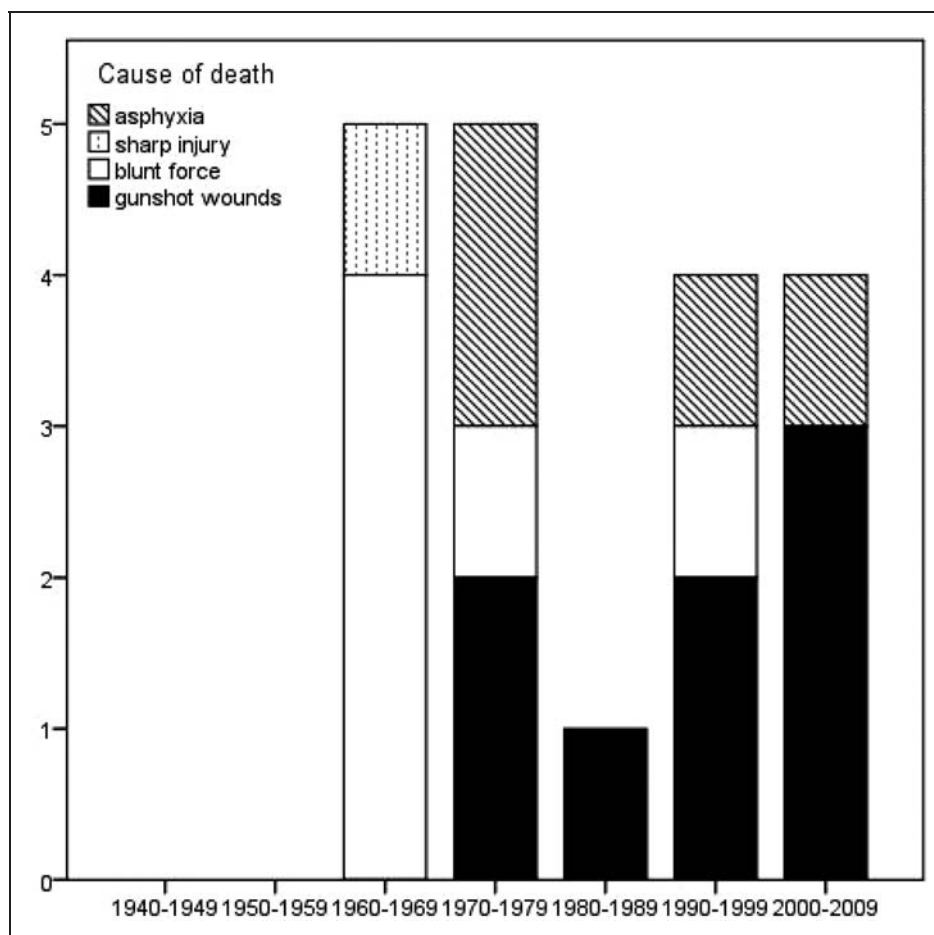


Figure 4. Temporal distribution of M-S in spousal couples and cause of death of victims in couples > 55 years ($N = 19$).

Table 5. Distribution cause of death of parental offenders ($N = 12$) and juvenile victims ($N = 15$) in filicide-suicide.

Cause of death		Frequency	%
Offender	Valid		
	Gunshot wounds	3	25.0
	Railway death	2	16.7
	Asphyxia ^a	7	58.3
	Total	12	100.0
Victim	Valid		
	Gunshot wounds	3	20.0
	Railway death	3	20.0
	Asphyxia ^a	9	60.0
	Total	15	100.0

^aAsphyxiating techniques included hanging; strangulation (by hand or by an instrument); carbon monoxide poisoning (CO); drowning; traumatic injury.

So far, we have studied two familial subgroups in detail: filicides and familicides, respectively. Further, we note that a nephew was killed by his uncle and also a case where a lover murdered both parents and their daughter before committing suicide. Finally, it is to mention that two remarkable cases were identified in our database. In one event, an uncommon type of M-S was committed, namely parricide-suicide. An adolescent 17-year-old boy

killed his 43-year-old mother with a gun and committed suicide in a similar way. Another event was a unique case of fratricide-suicide, killing one's brother, arising from a dispute. The youngest, aged 19 years, killed his older brother from jealousy since he had better marks at university than his younger brother. In this specific case, for both murder and suicide, a firearm was used.

Discussion

The purpose of this study was to detect certain patterns in M-S. This research reveals several findings that merit further discussion.

Offenders and victims

Researchers have stated that depression frequently occurs in persons who commit M-S.^{12,29} In our study, 59% ($N = 22$) suffered from depression. Unless depression is clearly stated by their medical doctor, which was accessible in the police files, we have no guaranties that the offender was feeling depressed. Depression is experienced differently in men than in women. Literature indicates that depression occurs more in women.³⁰ Our study showed that

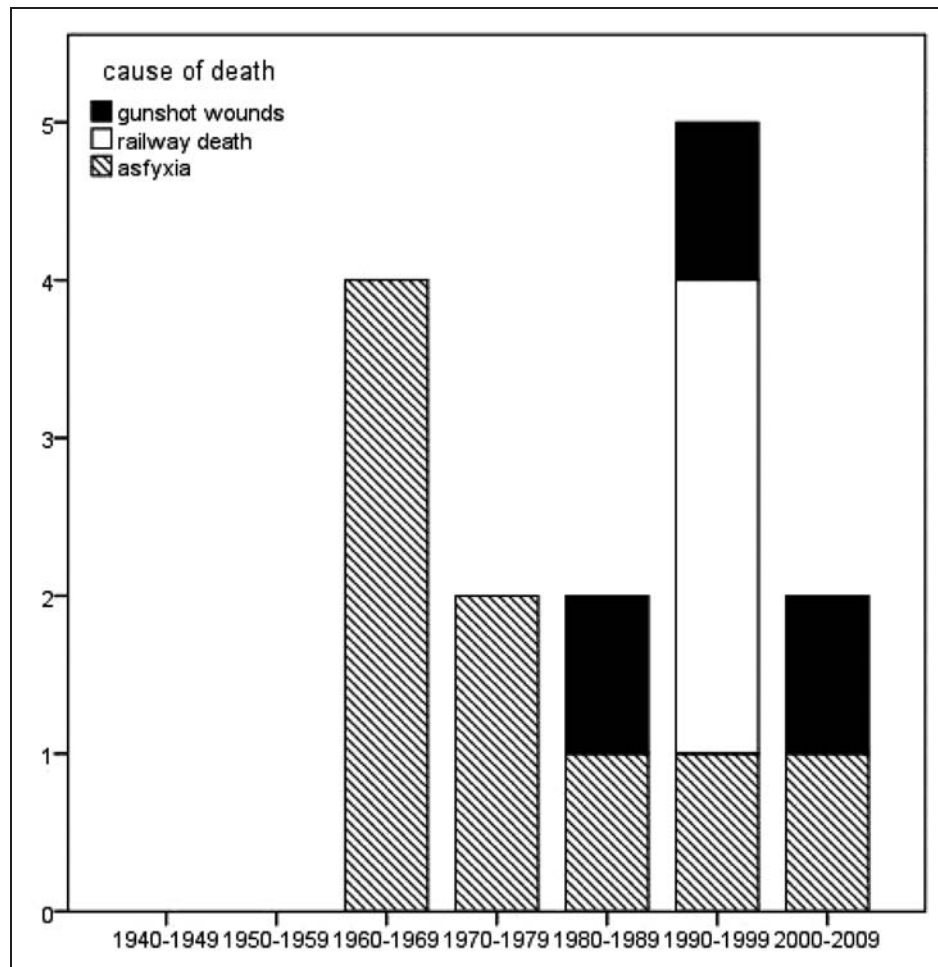


Figure 5. Temporal distribution of M-S in filicide-suicide and cause of death of juvenile victims ($N=15$).

Table 6. Distribution cause of death of offenders ($N=8$), adult victims ($N=9$) and juvenile victims ($N=11$) in familicide-suicide.

Cause of death		Frequency	%	
Offender	Valid	Gunshot wounds	6	75.0
		Asphyxia ^a	1	12.5
		Other ^b	1	12.5
		Total	8	100.0
Adult victim	Valid	Blunt force	1	11.1
		Gunshot wounds	5	55.6
		Other ^b	1	11.1
		Sharp injury	2	22.2
		Total	9	100.0
Juvenile victim	Valid	Blunt force	1	9.1
		Gunshot wounds	7	63.6
		Sharp injury	3	27.3
		Total	11	100.0

^aAsphyxiating techniques included hanging; strangulation (by hand or by an instrument); carbon monoxide poisoning (CO); drowning; traumatic injury.

^bOther includes combined causes of death such as strangulation (by hand) and sharp injury; hanging and sharp injury; blunt force and sharp injury; fire and sharp injury.

one-fourth of the female offenders was identified with a depression. Thomas³¹ states that family members were the most frequently cited triggers of women's anger. In contradiction with men who externalize their hostility, it is well-known that women introject their anger. Some women are not capable to use appropriate coping skills in stressful situations, and might feel the urge of suppressing anger in order to continue the harmony in the family.³² This chronic, suppressed hostility may lead to depression, which can be expressed in violent behavior such as murder-suicide. Connell³³ note that hegemonic masculinity within the context of the family must be recognized. Men are anxious in losing their honor, which is associated with masculinity. Loss of work means for most men also loss in status. These men think they can no longer provide their families, and they are depressed. Therefore, a minority of men have delusional thoughts regarding their wife and/or children and commit M-S.²² Polk³⁴ points out that some men find that the partner is their possession. Unfortunately, men generally have fewer coping strategies than women. If a relationship comes to an end, it has been suggested that some men become violent for losing control of their family.^{33,35} In domestic

disputes, some men might easily grab a weapon in order to make their grievances clear. According to other researchers, a history of domestic violence is often present within spousal murder–suicide.^{14,17} Unfortunately, in our study none of the selected files gave notice of previous domestic violence, which implicates an undercount of any history of intimate violence. Our study shows that the most common method of committing homicide has shifted from asphyxiating techniques to the usage of firearms, which may be the result of the easy accessibility to guns as stated in Brock.³⁶ Our data show that the highest frequency of M–S events appeared in the 1990s. More specifically, in 1993, a peak of M–S was detected. Remarkably, in that particular year, Belgium suffered from a financial crisis. In the family, a lot of disputes arise over money which might lead to an increase of M–S.

Types of M–S

Spousal/consortial. In 60% of our cases, the offender was married or lived together with the victim. Amorous jealousy was the most important trigger for younger offenders to carry out spousal M–S. Literature shows that in most M–S cases, the victims were acquainted with the offender,^{17,37–40} and the most common type of M–S is between two intimate partners.^{15,40} As mentioned above, a number of circumstances may contribute to this event such as estrangement, triadic liaison, financial stressors, and health problems.^{13,16,17,28,39,41} We agree with the findings of Felthous et al. that female perpetrators are less likely to commit M–S out of jealousy.⁴² Our data show that jealousy/possessiveness was mostly detected in men (43%), whereas in only one case a women committed M–S due to morbid jealousy. In elderly couples, the prominent motive was mercy killing. Older people can suffer from declining health. On the one hand, an offender might choose to stop the endless suffering of his spouse by carry out M–S. On the other hand, the offender can have delusional thoughts, in a way that he may find that life, without his partner, is meaningless.^{19,29} Finally, it must be noted that we combined mercy killing and altruistic suicide, because in some cases the difference between these two motives remained unclear. Our study showed that M–S in couples older than 55 years, in the first two decades, did not occur, while M–S incidents in couples of under 55 years were identified in every decade. The ageing of our population since the 60s could be an explanation.

Family. Filicide–suicide: Fifteen children were killed by a parent (other than familicide which will be discussed further). It is in keeping with previous findings that filicide–suicide is the second most common type of M–S, following spousal M–S,^{15,37,40,43,44} although the occurrence of filicide–suicide remained stable

throughout the years in our study. In the first two decades, however, no cases occurred. Of the 15 juveniles, 75% were killed by the mother. Focusing on causes of death, asphyxiating techniques such as hanging, were frequently used methods for both mother and children.^{21,45} Byard et al.²⁰ reported that mothers mostly use non-violent methods to kill their children rather than using firearms. No evidence of child abuse was reported.

Familicide–suicide: In our study, all of the eight familicide–suicide cases were typically predominated by male offenders, which is consistent with other studies.^{23,24,42,46} Family annihilators were often triggered by amorous jealousy or financial/social problems. Wilson et al.²³ suggested that these two motives can be categorized in what they referred to as “hostile, accusatory” versus “non-hostile, despondent” familicides, respectively. In our findings, we identified that three accusatory offenders clearly handled out of morbid jealousy. In contrast, two despondent offenders thought their household could not cope in their absence. In considering offenders’ intentions, some can be combined, such as financial stressors, which can lead to relational problems. Given these motives, one might presume that these deadly events were premeditated.⁴⁶ Surprisingly, in our records, no detailed plans (such as the purchase of weapons or the place where the incident might happen) were found at the crime scene. A suicide note was left behind in three cases in which their motive was openly stated. Our study shows that over the last two decades, the majority of familicide–suicide was detected. Assuming that the global financial crisis will continue, further research regarding familicide–suicide might be necessary to prevent other similar events.

Parricide–suicide: A remarkable finding in our dataset, involved a case of parricide–suicide that is children who kill their parents. This type of murder–suicide is very rare.⁴⁷ Matricide (i.e., a mother killed by her son) is the most common parricidal type. Our illustration is comparable to the findings in literature that matricide is most likely committed by juvenile sons by making use of firearms.^{48,49}

Fratricide–suicide: One case of fratricide–suicide was identified. The age-specific likelihood is typical in M–S by adult siblings according to Daly et al.⁵⁰ The youngest brother killed his older brother. In contrast, juvenile siblings who commit M–S the older brother is more likely the offender rather than the youngest brother.⁵¹ Concerning our fratricide–suicide case, the killing can be seen as a form of jealousy resulting from a privileged status. The youngest brother could not get the same recognitions as his older brother, which ended in M–S. In most fratricides, however, disputes over property and money results in M–S.⁵²

Conclusion

Over the past 75 years, the phenomenon “murder-suicide” seems to have escalated in the area of Ghent. In general, we note that the usage of firearms, instead of other weapons, has increased in all M–S incidents. With multiple factors such as the increasing ageing population, accompanied by a progression of depressions and the global financial crisis, more attention should be given to adequate prevention of spousal M–S incidents. Clinicians must be aware of personal, relational, and familial problems in their patients. Therefore, thorough training and multidisciplinary follow-up is required, which might contribute to early detection of risk factors in the context of M–S. Further research is necessary to understand the risk of this unpredictable phenomenon which has a severe impact on the community.

Notes

- a The Forensic Institute of Ghent University (FI – UGent) was founded in 2007. FI – UGent is a multidisciplinary collaboration that emerged after years of cooperation between four laboratories: the Laboratory of Forensic Medicine, the Laboratory for Forensic Toxicology, the Forensic DNA Laboratory, and the Laboratory of Food Analysis and Food Safety.
- b Source: European Commission. Eurostat. Regions: annual statistics 2006. http://statbel.fgov.be/nl/binaries/Eurostat_NL_tcm325-106850.pdf (last checked 28 May 2012).
- c Following the urbanization in the 20th century, it is no longer possible in Belgium to determine the true extent of cities in the municipal framework, not even after the unification of the municipalities in 1977. Therefore, we chose to follow the model proposed by Eurostat which classifies Belgium into three areas according to the degree of urbanization: sparsely populated areas (<100 inhabitants/km²), mixed populated areas (>100 inhabitants/km²), and densely populated areas (>500 inhabitants/km²).
- d NVDRS is an American state-based surveillance system that collects facts from different sources about the same incident. The information – from death certificates, police reports, and coroner or medical examiner reports – is pooled into a useable, anonymous database. <http://www.cdc.gov/ViolencePrevention/NVDRS/> (last checked 28 May 2012).

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The authors declare that they do not have any conflict of interest.

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