

Homicide–Suicide Cases in Switzerland and Their Impact on the Swiss Weapon Law

Silke Grabherr, MD,*† Stephan Johner, MSc,‡ Carine Dilitz, MSc,‡ Ursula Buck, BSc,† Martin Killias, PhD,§ Patrice Mangin, PhD,* and Thomas Plattner, MD†

Abstract: Homicide followed by the suicide of the offender is a well-known phenomenon. In most cases, it takes place in the context of the so-called “family tragedies.” A recent series of such family tragedies in Switzerland prompted an intensive debate in the media and the Swiss government concerning the Swiss Weapon Law, in particular the requirement to keep personal army weapons at home.

The present study of Homicide–Suicide cases in Switzerland, thus focuses on the role played by guns, especially military weapons, in such crimes.

We investigated retrospectively 75 cases of Homicide–Suicide, comprising 172 individuals and spanning a period of 23 years in western and central Switzerland.

Our results show that if guns were used in 76% of the cases, army weapons were the cause of death in 25% of the total. In 28% of the deaths caused by a gunshot, the exact type of the gun and its origin could not be determined.

Thus, the majority of Homicide–Suicide cases in Switzerland involve the use of guns. The exact percentage of cases where military weapons were involved could not be defined. In our opinion, a stricter weapons law, restricting access to firearms, would be a factor of prevention of Homicide–Suicide cases in Switzerland.

Key Words: homicide-suicide, family tragedies, weapon law, extended suicide, dyadic death

(*Am J Forensic Med Pathol* 2010;31: 000–000)

In 2005 and 2006, 3 particularly tragic homicide cases with the killer's subsequent suicide shocked the Swiss population.

In May 2005, a man jumped off a bridge. His 7-year-old daughter, 6-year-old son, and wife were all found dead in his home. Their deaths resulted from extensive head injuries: the man had shattered their skulls with a hammer before committing suicide. Although the family of 4 was described by neighbors as “happy and normal,” the police discovered that the offender had been facing great problems at his workplace.

In June 2005, a family man killed his 2 little daughters and his wife by shooting them with a handgun and then turned the weapon on himself. Soon after the incident, the police investigation revealed that the assailant's wife had been having a liaison with another man.

In April 2006, a popular Swiss female ski champion and her brother were shot by her husband with whom she had broken up 2 days before. The man committed suicide shortly thereafter.

These so-called “family tragedies” received massive media coverage, well beyond the nation's borders. They also triggered a political debate on the Swiss weapons law, especially as it regards military weapons. As a rule, every Swiss male citizen has to perform military service. It starts approximately at the age of 20 with basic training that lasts for 21 weeks. This basic training is followed by yearly 3 week-long trainings until the age of about 30 years. As an alternative, it is possible to complete one's military duty in one block of time, but this option is rarely chosen by the recruits. In addition to military service, every soldier participates in mandatory yearly shooting trainings. Swiss women are not required to serve for the Army, but may choose to do so under the same conditions. By law, every Swiss citizen subjected to military service in the Swiss Army keeps his personal military weapon at home in between the trainings. At the completion of the mandatory service, the army weapons (handgun and assault rifle) can be kept or returned. At the time of the study, every Swiss soldier also kept a limited amount of personal ammunition at home. This specific clause in the Swiss weapon law has now been changed as a direct and first consequence of the recent political debate. At the same time, shooting as a sport has a long tradition in Switzerland. Therefore, any person without a criminal record can purchase a weapon as well as ammunition, store it at home and use it for shooting sport.¹ All together, an estimated 2.2 million modern weapons are owned by approximately 7.4 million Swiss citizens, with a weapon present in almost 1 in every 3 Swiss households.^{2,3}

In the light of the above facts, different stakeholders, including political left groups and women's rights organizations, have demanded a revision of the Swiss weapon law to integrate more restrictive regulations, including the obligation to store military weapons in military arsenals rather than at one's home.

The problem of homicide followed by the perpetrator's suicide in Western countries has been investigated by a number of authors throughout the world. At the same time, the definition of what is a “Murder–Suicide” is not unique. Thus, in some studies, an interval between homicide and suicide of 1 day to 3 months can be taken into account.^{4–6} For most authors, however, Homicide–Suicide implies that the perpetrator has committed homicide followed by suicide within 1 week of the homicide.⁷ Homicide–Suicide incidence has been estimated to range between 0.19 and 0.5 per 100,000 inhabitants. In 85% to over 90% of cases, the perpetrators are men and in the great majority of cases, the victims include women.^{8,9} In all of the cases investigated in a US study, the victims were family members of the perpetrator.⁸ Homicide–Suicide cases are difficult to investigate because they rarely have legal consequences and official records simply lack in most countries.¹⁰ Nevertheless, high rates of Homicide–Suicide cases in certain countries have been attributed to easy access to firearms. Certain studies indicate that strict gun control laws may be an important preventive factor of such events.^{11,12} To date, no systematic study has addressed the issue of Homicide–Suicide in Switzerland. Indeed, as

Manuscript received March 7, 2009; accepted July 5, 2009.

From the *Department of Medicine Lausanne, University Center of Legal Medicine, Geneva and Lausanne, Lausanne, Switzerland; †Department of Forensic Medicine, Institute of Forensic Medicine, University of Bern, Bern, Switzerland; ‡Institute of Criminology, University of Lausanne, Lausanne, Switzerland; and §Institute of Criminology Zürich, Zürich, Switzerland.

Reprints: Silke Grabherr, MD, University Center of Legal Medicine, Geneva and Lausanne, Rue du Bugnon 21, CH–1011 Lausanne, Switzerland. E-mail: silke.grabherr@irm.chuv.ch.

Copyright © 2010 by Lippincott Williams & Wilkins

ISSN: 0195-7910/10/3101-0001

DOI: 10.1097/PAF.0b013e3181ce9f3e

described by Haenel and Elsässer,¹³ it is difficult to obtain data about such cases in this country.

In this work, we wished to elucidate the role of guns, especially military weapons, in Homicide-Suicide cases in Switzerland. To this aim, we retrospectively analyzed all homicide cases in the western and central parts of Switzerland that occurred from 1981 until 2004 (including Swiss cantons of Bern, Basel, Solothurn, Aargau, Neuchâtel, Fribourg, Wallis, Jura, Geneva and Vaud). Additionally, we compared the cases that occurred in Switzerland to those in other countries.

MATERIALS AND METHODS

The retrospective study examined all cases of homicide followed by the perpetrator's suicide that have occurred in Switzerland between 1981 and 2004 and have been investigated by 4 different forensic institutes in Switzerland (Institutes of Forensic Medicine of Bern, Basel, Lausanne and Geneva), leading to written autopsy and death scene investigation reports. The 4 institutes above cover the western and central parts of Switzerland (Fig. 1). In general, in case of homicide, the forensic pathologist on duty is called in to perform a death scene investigation on site. Written reports were therefore available in most cases. In one of the 4 institutes, data prior to 1991 could not be collected because they are systematically destroyed 10 years after the closure of the case. In addition to the data available at the institutes of forensic medicine, information about the cases was also collected whenever possible by analyzing police reports found at local police departments.

In accordance with the most frequently used definition of Homicide-Suicide found in the literature,⁷ our study included all cases in which the suicide act occurred up to 1 week after the homicide. We also included 5 cases in which homicide was followed by attempted, but failed suicide in this lapse of time. In these suicide attempts, the offender suffered self-inflicted life-threatening lesions. A total of 75 cases were investigated, involving 172 individuals. The collective consists of 75 offenders and 97 victims.

Table 1 summarizes the age and sex of the offenders and the victims, the causes of death including the type of the weapon involved and the lapse of time between the homicide and the (attempted) suicide of the offender. Collateral injuries and particularities of the case, such as killing pets, setting the home on fire, etc. are also indicated.

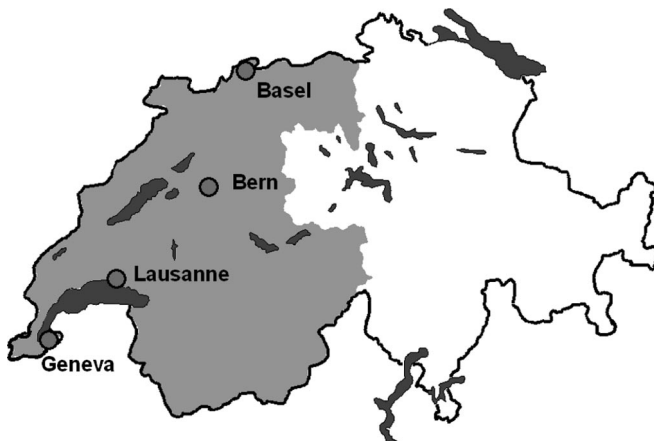


FIGURE 1. Geographical map of Switzerland. The cities marked in the map (Basel, Bern, Lausanne, and Geneva) are locations of the 4 institutes of forensic medicine which participated in the study. The areas for which they serve are marked in grey.

The results of our study were subjected to descriptive statistical analyses. Quantitative data were visualized by histograms and pertained to the number of victims implicated in the cases, the cause of death, the sex and age of the victims and offenders, the origin of the guns used, and the relation between victims and offenders. Because we were particularly interested in the role played by the weapons in homicide-suicide cases in Switzerland, special attention was given to the cause of death of the victim and of the offender. Cases in which guns were implicated were further investigated to determine whether the gun was a military weapon.

RESULTS

Number of Victims

Analyses of the cases showed that in 61 of the 75 cases (~81%), the offender killed only 1 victim before committing suicide (Fig. 2). In 9 cases (~7%), 2 victims were implicated. There were only 3 cases with 3 victims (~2%). We found only 1 case with 4 and 1 case with 5 victims (~1%).

Cause of Death of the Victims

Death of the victim (~69%) was by far most often caused by one or more gunshots (Fig. 3). Other causes of death were less frequent, the most common being strangulation, showing an incidence of ~12%.

Cause of Death of the Offenders

The majority (63%) of the offenders killed themselves using firearms (Fig. 4). Other causes of death such as hanging (~7%) were much less frequent. The cause of death of the offender was not documented in ~11% of the cases. In ~7% of the cases, suicide was attempted without success. Guns were used in 60% of such attempts.

Cases Involving Guns

Because one of the main interests of our study was to determine whether military weapons are used regularly in Homicide-Suicide, cases involving guns were investigated in more detail (Fig. 5). In 76% of all cases, a firearm was used at least once as the lethal weapon, and in 25% the firearm was a military weapon. In ~47% of the cases, it was established that the gun was definitely not an army weapon. Unfortunately, these results are not predicative because in ~28% of the cases, the documents failed to indicate whether the gun was military or not. In cases where the type of the weapon was indicated ($n = 41$), 34% of the weapons could be identified with certitude as military weapons.

Gender of Victims

The majority of the victims in our study were women, with ~66% of all victims being female, and only 34% being male (Fig. 6).

Gender of Offenders

If men were a minority as victims, they were mostly offenders. In 88% of all cases, the murder was carried out by males and only in 12%, by females (Fig. 7).

Age of Victims

The age of the victim varied from 1 to 86 years (mean age, 33 years) (Fig. 8). The largest age group was children aged 1 to 10 years (25%). In the different age groups ranging from 11 to 20 years up to 61 to 70 years, the proportions of victims ranged from 8% to 15%.

Age of Offenders

The age of the offender varied from 19 to 94 years (mean age, 47) (Fig. 9). Offenders were mostly found in the following age groups: 31 to 40 years (~25%), 41 to 50 years (~21%), and 51 to

60 years (~19%). Other age groups were less represented (~1%–~12%). The youngest offender was 19 years old. Unfortunately, in ~5% of the cases, the age of the offender was not documented.

Relation to Offender

In nearly half of the cases, the victim was the wife of the offender (~41%) (Fig. 10). In the second most frequent case, the victims were children of the offender (sons in ~21% of all cases and daughters in ~11% of all cases). In ~7%, the victim was the girlfriend of the offender. Other relations were seen less frequently (in ~1%–~3%). In all cases the victim knew the offender.

Relation to Victim

In ~41% of the cases, the offender was the husband of the victim, in ~26% of the cases he was the father (Fig. 11). Other relations between the offender and the victims were seen much less frequently (between ~8% and ~1%). In all cases the offender knew the victim.

Collateral Injuries

In ~29% of the cases, the victim had suffered injuries in addition to those which were fatal (Table 1). Most of these nonfatal injuries were caused by another mechanism than that which caused the death. Therefore, they can be considered as attempted homicide. For example, a wife killed by her husband with a knife also showed signs of strangulation on her neck (case 12 in Table 1). In other cases, chemical analysis revealed toxic levels of drugs or medications in victims, leading to the assumption that the victim had been made defenseless or even unconscious before being killed. Certain aggressors (~8%) also suffered collateral injuries indicating possible attempted suicide before suicide was performed by other means.

Particularities

All the details that we considered particular in the specific case was noted as particularities (Table 1). In some cases, the offender performed other aggressive acts in addition to the killing, for example setting the home of the family he had murdered on fire or killing their pets. We also indicated cases where other persons were injured during an attempted killing and the presence of farewell letters. In 2 cases, a farewell letter was signed by the offender and the victim.

DISCUSSION

The purpose of our study was to determine the importance of firearms in cases of homicide followed by suicide and our attention was therefore focused on the crime weapon. Our results show that the death of victims and offenders was indeed caused by gunshot lesions in the majority of cases (~69% of the victims and ~63% of the offenders).

The high percentage of guns as killing weapons is in accordance with the results of other published studies. According to Milroy,^{10,12} the number of Homicide–Suicide cases increase with the availability of firearms. This author points out that, in general, countries with greater access to firearms have a higher rate of homicide-suicide.¹⁰ As already described in the Introduction, Switzerland offers easy access to firearms. Furthermore, our results show that in 57 of the 75 investigated cases (76%) guns were used as the killing weapon. As already described in the literature, strict gun control laws may be an important factor in the prevention of Homicide–Suicide.^{11,12,14}

The Swiss weapon law does much more than simply allowing easy access to weapons. At the time of this study, it actually forces every Swiss citizen subjected to military service to keep his personal military weapons as well as his personal ammunition at home, whether this is liked or not. We attempted to determine the propor-

tion of cases involving firearms where a military weapon was used. Unfortunately, our results are not predictive, because in almost the third of all cases, records fail to indicate whether the gun was military. However, in a quarter of the cases such a weapon was indeed used. It is likely that this was also true in many of the uncertain cases: Indeed, if the military origin of the weapon was not indicated, in most description the type of the gun used is also used in the Swiss army.

In addition to the main focus of our study, the weapons used in Homicide–Suicide, we also investigated other criteria which were then compared with those already published in the literature. Such criteria included the number of victims per case, gender and age of the offender and the victims and the relation between offender and victim.

In the 75 cases studied, the number of victims in each case varied from 1 to 5. In general, the offender killed only one person before committing suicide. In these cases the victim was generally the perpetrator's wife. Cases with 4 and 5 victims appear only once in this study. Such frequencies are in accordance with the literature.¹⁵ As Marzuk et al describe,⁷ the so-called “Spousal Murder–Suicide” is the most common type of Homicide–Suicide, which represents one-half to three-fourth of all murder-suicide cases in the United States. Over 90% of these Homicide–Suicides involving couples are perpetrated by men.^{16,17} Cases with 2 or 3 victims consist mostly of child murders. Cases where more than one family member was killed were mostly committed by the father. In the literature, such cases are known as “Familicide–Suicide.”⁷ The cases in our study fit into the description of this type of Homicide–Suicide given by Marzuk et al.⁷ We also found particularities typical of such cases, such as setting the house on fire and killing pets.

In the literature, the fact that men are in general the offender in cases of homicide-suicide is well known.^{7,9,15} Our study also revealed that the offenders were male in most cases. In the small number of cases, where the offender is a woman, it was usually the mother of the victim. In contrast, most victims are women, both in the relevant literature and in our study. More than half of the victims were women, in most cases offenders' wives.

Our findings pertaining to the age of the persons implicated in Homicide–Suicide also reflect the results found in the literature.^{7,9,15} The largest age group of victims were children between 1 and 10 years and they had been killed by their parents, mostly the father. Offenders were regularly between 31 and 60 years old. These results show that the age distribution of the implicated persons in Switzerland resembles that found in other countries.

Our study was limited by a well-known problem often found in investigations of Homicide–Suicide cases. This problem stems from the lack of information because such cases are often badly documented.^{10,13} If the offender commits suicide immediately after homicide, there are no legal consequences and therefore the investigations are terminated rapidly. While the victims included in our study were mostly examined in an institute of forensic medicine by an autopsy or at least by an external examination, the body of the offenders did not always undergo medico-legal investigations. Therefore, there are important deficiencies in our documentation about the offender, and our corresponding results do not necessarily fully reflect the reality.

To further investigate the role of firearms in cases of all homicides and all suicides in Switzerland, the Institute of Criminology in Lausanne has launched a nation-wide ongoing study. In particular, a database has been set up to collect information on all cases registered over a period of 20 years. A statistical analysis of these cases will be used to determine whether the Swiss weapon law should be changed or not.

TABLE 1. Table Including all Important Information About the Investigated Cases

Case Number	Victim					
	ID-No.	Age (Sex)	Relation to Offender	Cause of Death (Weapon)	Military Gun	Collateral Violence/Injuries
1	1	30 (f)	Girlfriend	Gunshot (pistol, caliber 9 mm)	No	/
2	3	25 (m)	Son	Gunshot (gun not further defined)	No	/
3	5	43 (f)	Wife	Strangulation with belt	/	/
4	7	3 (m)	Son	Explosion	/	/
5	10	5 (m)	Son	Suffocation by occlusion of mouth and nose	/	/
6	12	34 (m)	Boyfriend	Gunshots (revolver, caliber 38 and second revolver not specified)	No	/
7	14	58 (f)	Wife	Gunshot (gun not further defined)	Unknown	/
8	16	35 (f)	Wife	Gunshot (revolver caliber 22)	No	Strokes on the head
“	17	8 (f)	Daughter	Gunshot (revolver caliber 22)	No	/
	18	11 (f)	Daughter	Gunshot (revolver caliber 22)	No	/
9	20	26 (f)	Ex-girlfriend	Gunshot (pistol, not further specified)	Unknown	/
10	22	68 (f)	Girlfriend	Gunshot (shotgun)	No	/
11	24	50 (f)	Wife	Manuel strangulation	/	Anesthesia with aether; genital injuries; superficial skin injuries; poured over with petrol
12	26	48 (f)	Wife	Deep cuts at the neck	/	Signs of strangulation
13	28	63 (f)	Girlfriend	Gunshot (pistol, SIG-9-mm)	No	/
14	30	59 (f)	Wife	Manual strangulation	/	Intoxication by high dose of codein
15	32	24 (m)	Room mate	Strike on the head with concrete block	/	Stab wounds; cut wounds; blunt force injuries
16	34	26 (f)	Girlfriend	Struck dead	/	Agonal or postmortem genital injuries
17	36	79 (f)	Wife	Gunshot (gun not further defined)	Unknown	/
18	38	23 (f)	Wife	Gunshot (assault rifle)	Yes	/
19	40	64 (f)	Wife	Gunshot (assault rifle)	Yes	/
20	42	29 (f)	Girlfriend	Gunshot (assault rifle, FAS 57)	Yes	CO-intoxication
21	44	46 (f)	Wife	Gunshot (small caliber, not further specified)	Unknown	/
22	46	41 (f)	Wife	Gunshot (Carabine)	No	/
23	48	51 (m)	Husband	Struck dead with an ax	/	Injuries of defense

TABLE 1. (Continued)

ID-No.	Age (Sex)	Relation to Victim	Cause of Death (Weapon)	Offender			Delay Between Homicide and (Attempted) Suicide	Particularities
				Military Gun	Attempted Suicide by	Collateral Violence/Injuries		
2	40 (m)	Boyfriend	Gunshot (pistol, 9 mm)	No	/	/	Immediately	/
4	49 (m)	Father	Overrun by train	/	/	/	Immediately	/
6	48 (m)	Husband	Hanging	/	Hanging	CO-intoxication after arsoning	47 d (immediately)	Arsoning of house; hanging in prison
9	37 (m)	Father	Explosion	/	/	/	Coevally	Accidental homicide of neighbor who was struck dead by fragments of the offender's house
11	33 (m)	Father	Fall from bridge	/	/	/	/	/
13	35 (f)	Girlfriend	Gunshots (revolver, caliber 38 and second revolver not specified)	No	/	/	Immediately	/
15	64 (m)	Husband	Gunshot (gun not further defined)	Unknown	/	/	Immediately	Farewell letter signed by victim and offender
19	45 (m)	Husband	Gunshot (revolver caliber 22)	No	/	/	Immediately	/
19	45 (m)	Father	"	"	"	"	"	"
19	45 (m)	Father	"	"	"	"	"	"
21	28 (m)	Ex-boyfriend	Gunshot (pistol, not further specified)	Unknown	/	Cuts at the right wrist	Immediately	/
23	70 (m)	Boyfriend	Gunshot (shotgun)	No	/	/	Immediately	/
25	53 (m)	Husband	Gunshot (pump-action shotgun)	No	/	/	Immediately	Arsoning of home
27	55 (m)	Husband	Gunshot (pistol, not further specified)	Unknown	/	Cuts at the left wrist	Immediately	/
29	59 (m)	Boyfriend	Gunshot (pistol, SIG-9 mm)	No	/	/	Immediately	Farewell letter; killing of the pets (2 cats) by gunshots
31	58 (m)	Husband	Exsanguination by deep cuts at both wrists	/	/	Cuts and stab wounds at the neck	Immediately	Farewell letter signed by victim and offender
33	23 (m)	Room mate	Ride over by truck	/	/	Superficial cuts at the neck	Immediately	/
35	26 (m)	Boyfriend	Gunshot (assault rifle, FAS 57)	Yes	/	Injuries of defend and offend	Immediately	/
37	79 (m)	Husband	Gunshot (gun, not further defined)	Unknown	/	Loop around the neck, no strangulation signs	Immediately	/
39	29 (m)	Husband	Gunshot (assault rifle)	Yes	/	/	Immediately	/
41	70 (m)	Husband	Gunshot (pistol, not further specified)	Unknown	/	/	Immediately	Attempted murder of 2 sons-in-law; killing of the pet (dog)
43	37 (m)	Boyfriend	Gunshot (assault rifle, FAS 57)	Yes	/	CO-intoxication after arsoning	Immediately	Arsoning of the house of the victim
45	Unknown (m)	Husband	Gunshot (small caliber, not further specified)	Unknown	/	/	Immediately	Killing of the pet (dog)
47	57 (m)	Husband	Exsanguination from deep cuts at both wrists	/	/	/	Some hours	/
49	43 (f)	Wife	Suffocation with plastic bag	/	/	/	Some hours	/

(Continued)

TABLE 1. (Continued)

Case Number	Victim					
	ID-No.	Age (Sex)	Relation to Offender	Cause of Death (Weapon)	Military Gun	Collateral Violence/Injuries
24	50	65 (f)	Wife	Gunshot (CZ, 9 mm)	No	/
25	52	47 (m)	Boyfriend	Gunshot (SIG 226)	No	Signs of strangulation; decapitation; eventually intoxication with insulin
26	54	3 (m)	Son	Exsanguination from deep cuts at both wrists and neck	/	/
27	56	43 (f)	Wife	Strangulation with forearm and with a sock	/	Covering of the head with a plastic bag
“	57	20 (f)	Daughter	Strangulation with forearm and manual strangulation	/	Covering of the head with a plastic bag
”	58	13 (m)	Son	Gunshot (gun not further defined)	Unknown	/
28	60	11 (f)	Daughter	Gunshot (handgun, not further defined)	Unknown	/
29	62	25 (f)	Girlfriend	Manual strangulation	/	Blunt force injuries on whole body, genital injuries, bondage, shaving of hair
30	64	70 (f)	Wife	Gunshot (assault rifle)	Yes	/
31	66	42 (m)	Ex-boyfriend	Gunshot (pistol caliber 45)	No	/
32	68	20 (f)	Ex-girlfriend	Gunshot (gun not further defined)	Unknown	Signs of strangulation
33	70	30 (f)	Ex-boyfriend	Gunshot (gun not further defined)	Unknown	Injuries of defense
34	72	6 (m)	Son	CO-intoxication in car	/	/
“	73	4 (m)	Son	Suffocation by occlusion of mouth and nose	/	CO-intoxication in car
35	75	62 (f)	Wife	Gunshot (gun not further defined)	Unknown	/
36	77	81 (f)	Wife	Gunshot (Parabellum 06; 7,65 mm)	No	/
37	79	5 (m)	Son	Gunshot (hunting rifle)	No	/
38	81	86 (f)	Wife	Gunshot (Para-bellum)	Unknown	/
39	83	70 (f)	Wife	Gunshot (Carabine)	No	/
40	85	75 (f)	Wife	Gunshot (Carabine)	No	/
41	87	65 (f)	Wife	Gunshot (SIG, 9 mm)	Yes	/
42	102	49 (m)	Husband	Gunshot (gun not further defined)	Unknown	/
”	103	6 (m)	Grandson	Gunshot (gun not further defined)	Unknown	/
43	104	5 (m)	Son	Knife	/	Multiple superficial cuts and stab wounds
”	105	9 (f)	Daughter	Knife	/	Multiple superficial cuts and stab wounds
44	106	2 (m)	Son	Gunshot (SIG, 9 mm)	Yes	/
45	107	48 (f)	Wife	Gunshot (Astra, caliber 38 special)	No	/
“	118	5 (f)	Daughter	Gunshot (Astra, caliber 38 special)	No	/

TABLE 1. (Continued)

ID-No.	Age (Sex)	Relation to Victim	Cause of Death (Weapon)	Offender			Delay Between Homicide and (Attempted) Suicide	Particularities
				Military Gun	Attempted Suicide by	Collateral Violence/Injuries		
51	58 (m)	Husband	Gunshot (CZ, 9 mm)	No	/	/	Immediately	/
53	26 (m)	Boyfriend	Hanging	/	/	Bonded hands; tissues under the foreskin of the penis	Some hours	Decapitation of victim with manipulation of the head (tissues in mouth and nose)
55	43 (m)	Father	/	No	Cuts at both wrists and neck	/	Immediately	/
59	51 (m)	Husband	/	/	Gunshot (gun not further defined)	Stab wounds and cuts at breast an neck	Immediately	Pursuit of son into the neighbors' flat after killing the other victims
”	“	Father	”	“	”	“	”	“
“	”	Father	“	”	“	”	“	”
61	Unknown (f)	Mother	/	/	Gunshot (hand gun, not further defined)	/	Immediately	Killing in presence of second daughter
63	Unknown (m)	Boyfriend	/	/	Jump from a high bridge into a river	/	3 d	/
65	51 (m)	Husband	Gunshot (assault rifle)	Yes	/	/	Immediately	/
67	35 (f)	Ex-girlfriend	/	No	Gunshot (pistol caliber 45)	/	Immediately	/
69	39 (m)	Ex-boyfriend	Gunshot (gun not further defined)	Unknown	/	/	Same hours	/
71	31 (m)	Ex-boyfriend	Unknown	Unknown	/	/	Immediately	/
74	Unknown (f)	Mother	Unknown	/	/	/	Immediately	/
”	“	Mother	”	“	”	“	”	“
76	58 (m)	Husband	Gunshot (gun not further defined)	Unknown	/	/	Immediately	/
78	84 (m)	Husband	Gunshot (Parabellum 06; 7,65 mm)	No	/	/	Immediately	Farewell letter
80	28 (f)	Mother	Gunshot (hunting rifle)	No	/	/	Immediately	Farewell letter
82	94 (m)	Husband	Gunshot (SIG, 9 mm)	Yes	/	/	Immediately	Farewell letter
84	69 (m)	Husband	Gunshot (Carabine)	No	/	/	Immediately	/
86	76 (m)	Husband	Gunshot (Carabine)	No	/	/	Immediately	/
88	73 (m)	Husband	Gunshot (SIG, 9 mm)	Yes	/	/	Immediately	/
89	51 (f)	Wife	Gunshot (gun not further defined)	Unknown	Unknown	Unknown	Unknown	/
“	51 (f)	Grand-mother	Gunshot (gun not further defined)	Unknown	”	“	”	“
90	47 (f)	Mother	Knife	/	/	Intoxication with medicaments	Immediately	/
“	47 (f)	Mother	Knife	”	“	”	“	”
91	33 (m)	Father	Gunshot (SIG, 9 mm)	Yes	/	/	Immediately	/
92	41 (m)	Husband	Gunshot (Astra, caliber 38 special)	No	/	/	Immediately	Farewell letter
”	41 (m)	Father	“	”	“	”	“	”

(Continued)

TABLE 1. (Continued)

Case Number	Victim					
	ID-No.	Age (Sex)	Relation to Offender	Cause of Death (Weapon)	Military Gun	Collateral Violence/Injuries
“	119	1 (m)	Son	Gunshot (Astra, caliber 38 special)	No	/
46	108	53 (f)	Girlfriend	Gunshot (pistol, caliber 22)	Unknown	/
47	109	42 (f)	Wife	Gunshot (gun not further defined)	Unknown	/
48	110	11 (f)	Daughter	Gunshot (Beretta 6, 35 mm)	No	/
”	111	63 (f)	Wife	Gunshot (Beretta 6, 35 mm)	No	5 deep cuts at the neck
49	112	29 (f)	Wife	Exsanguination from deep cuts on the neck	/	/
50	113	1 (m)	Son	Gunshot (pistol, 9 mm)	Unknown	/
51	114	34 (f)	Wife	Gunshot (revolver 22 LR)	No	/
52	115	32 (f)	Wife	Multiple gunshots (caliber 6, 35 mm)	No	/
53	116	72 (f)	Wife	Gunshot (pistol, not further specified)	Unknown	/
54	117	31 (f)	Wife	Gunshot (assault rifle)	Yes	/
55	118	40 (f)	Wife	Gunshot (Smith and Wesson 38 special)	No	/
56	120	53 (f)	Wife	Multiple stab-wounds and cuts with kitchen knife	/	Lesions of defense
57	122	29 (f)	Wife	Stroke dead with roller-pin	/	Strangulation with tissue
“	123	10 (m)	Son	Strangulation with shoe laces	/	/
58	125	54 (f)	Wife	Strangulation with towel	/	/
59	127	32 (f)	Ex-wife	Manual strangulation	/	Asphyxia and anesthesia trichlor-ethylene
”	129	8 (f)	Daughter	Asphyxia by manual occlusion of nose and mouth	/	Anesthesia with trichlor-ethylene
60	130	38 (f)	Wife	Gunshot (pistol EP 752 22 Longrifle)	No	/
61	132	30 (m)	New lover of ex-girlfriend	Gunshot (Browning FN)	No	/
62	134	60 (f)	Wife	Gunshot (small caliber, not further specified)	No	/
63	136	59 (f)	Wife	Gunshot (pistol FN6, 35 mm)	No	/
“	137	27 (m)	Son	Gunshot (pistol FN6, 35 mm)	No	/
64	140	30 (f)	Wife	Gunshot (hunting rifle)	No	/
65	141	35 (f)	Wife	Struck dead with hammer	/	22 strikes at head and thorax
66	143	43 (f)	Wife	Gunshot (assault rifle)	Yes	Multiple cuts with knife
”	145	9 (m)	Son	Gunshot (assault rifle)	Yes	Multiple cuts with knife
“	146	11 (m)	Son	Gunshot (assault rifle)	Yes	Multiple cuts with knife
”	147	6 (m)	Son	Gunshot (assault rifle)	Yes	Multiple cuts with knife
“	148	68 (f)	Mother	Gunshot (assault rifle)	Yes	Multiple cuts with knife
67	149	35 (f)	Wife	Knife	/	Manual strangulation
68	151	8 (f)	Daughter	Strangulation with tissue	/	/
69	153	6 (f)	Daughter	Gunshot (assault rifle FAS 90)	Yes	/
”	154	2 (m)	Son	Gunshot (assault rifle FAS 90)	Yes	/

TABLE 1. (Continued)

ID-No.	Age (Sex)	Relation to Victim	Cause of Death (Weapon)	Offender			Delay Between Homicide and (Attempted) Suicide	Particularities
				Military Gun	Attempted Suicide by	Collateral Violence/Injuries		
93	62 (m)	Boyfriend	Gunshot (pistol, caliber 22)	Unknown	/	/	Immediately	/
94	53 (m)	Husband	Gunshot (gun not further defined)	Unknown	/	/	Immediately	/
95	43 (m)	Father	Gunshot (Beretta 6, 35 mm)	No	/	/	Immediately	/
96	41 (m)	Husband	Exsanguination from deep cuts on the neck	/	/	/	Immediately	/
97	34 (f)	Mother	Gunshot (pistol, 9 mm)	Unknown	/	/	Immediately	/
98	30 (m)	Husband	Gunshot (revolver 22 LR)	No	/	/	Immediately	/
99	49 (m)	Husband	Gunshot (caliber 6, 35 mm)	No	/	/	Immediately	/
100	75 (m)	Husband	Gunshot (revolver, not further specified)	Unknown	/	/	Immediately	/
101	41 (m)	Husband	Gunshot (assault rifle)	Yes	/	/	Immediately	/
119	52 (m)	Husband	Gunshot (Smith and Wesson 38 special)	No	/	/	Immediately	/
121	51 (m)	Husband	Ride over by train	/	/	/	Immediately	/
124	36 (m)	Husband	Gunshot (gun not further defined)	Unknown	/	/	Immediately	/
127	57 (m)	Husband	Hanging	/	/	/	Immediately	/
128	34 (m)	Ex-husband	Gunshot (assault rifle)	Yes	/	/	Immediately	/
131	39 (m)	Husband	Gunshot (pistol EP 752 head)	No	/	/	Immediately	/
133	41 (m)	Ex-boyfriend of girlfriend	Gunshot (Browning FN)	No	/	/	Immediately	/
135	63 (m)	Husband	Unknown	Unknown	Unknown	Unknown	Unknown	/
138	65 (m)	Husband	Unknown	Unknown	Unknown	Unknown	Unknown	/
139	35 (m)	Husband	Gunshot (hunting rifle)	No	Unknown	Unknown	Unknown	Two different guns, bought 10 d before homicide
142	56 (m)	Husband	Unknown	Unknown	Unknown	Unknown	Unknown	/
144	42 (m)	Husband	Gunshot (assault rifle)	Yes	/	/	Immediately	/
145	56 (m)	Father	Unknown	Unknown	Unknown	Unknown	Unknown	Victim had baby in the arms during homicide
146	56 (m)	Father	Unknown	Unknown	Unknown	Unknown	Unknown	/
147	56 (m)	Father	Unknown	Unknown	Unknown	Unknown	Unknown	/
148	56 (m)	Father	Unknown	Unknown	Unknown	Unknown	Unknown	/
149	56 (m)	Son	Unknown	Unknown	Unknown	Unknown	Unknown	/
150	37 (m)	Husband	Unknown	Unknown	Unknown	Unknown	Unknown	/
152	35 (m)	Father	Hanging	Unknown	Unknown	Unknown	Unknown	/
155	37 (m)	Father	Gunshot (assault rifle FAS 90)	Yes	/	/	Immediately	/
156	37 (m)	Father	Unknown	Unknown	Unknown	Unknown	Unknown	/

(Continued)

TABLE 1. (Continued)

Case Number	Victim					
	ID-No.	Age (Sex)	Relation to Offender	Cause of Death (Weapon)	Military Gun	Collateral Violence/Injuries
70	156	9 (f)	Daughter	Gunshot (Sig p220, 9 mm)	No	/
71	159	1 (m)	Son	Manual strangulation	/	/
“	160	7 (m)	Son	Gunshot (assault rifle FAS 57)	Yes	/
	161	45 (m)	Mother	Gunshot (assault rifle FAS 90)	Yes	/
”	162	45 (m)	Father	Gunshot (assault rifle FAS 90)	Yes	/
“	164	16 (f)	Sister	Gunshot (assault rifle FAS 90)	Yes	/
”	165	13 (m)	Brother	Gunshot (assault rifle FAS 90)	Yes	/
73	166	35 (m)	New lover of ex-wife	Gunshot (pistol caliber 22 LR)	No	/
74	168	29 (m)	New lover of ex-girlfriend	Exsanguination of multiple stab-wounds with kitchen knife	/	/
75	170	48 (f)	Wife	Strangulation with cord of hemp	/	/

The case number can be found in the first column. Each individual has an additional identification number (ID-no.). In the yellow columns the information about the victim can be found (ID-no, age, sex, relation to the offender, cause of death, kind of weapon and this belonging to the Swiss army and collateral injuries). The green columns contain the information about the offender (ID-no., age, sex, cause of death, weapon and its belonging to the Swiss army, collateral injuries, attempted suicide and the delay between the homicide and the (attempted) suicide). The last column contains any information that we found particular in the described case.

ID-No. indicates identification number; /, none or not applicable; “, see in field above.

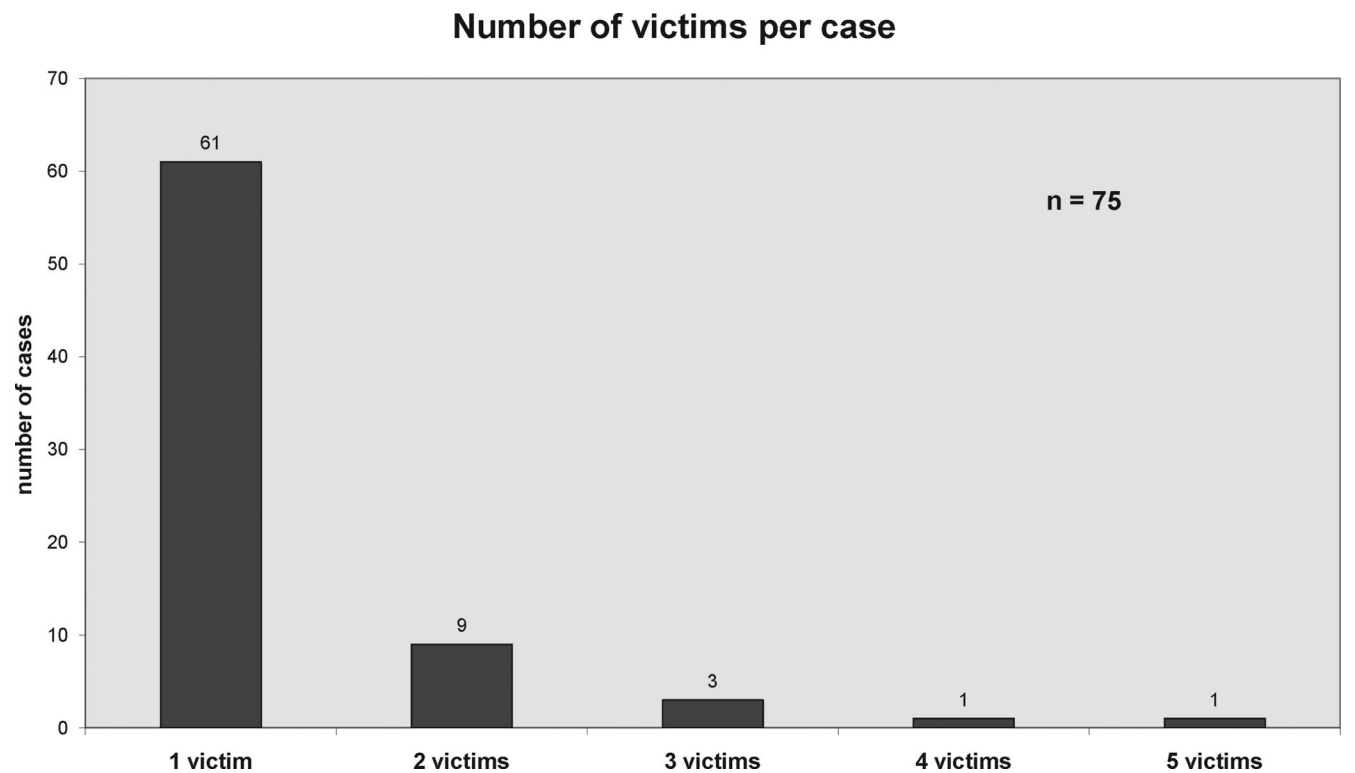


FIGURE 2. Graphic showing the number of victims included in each of the 75 cases investigated in the study.

TABLE 1. (Continued)

Offender								Particularities
ID-No.	Age (Sex)	Relation to Victim	Cause of Death (Weapon)	Military Gun	Attempted Suicide by	Collateral Violence/Injuries	Delay Between Homicide and (Attempted) Suicide	
157	41 (m)	Father	Gunshot (Sig p220, 9 mm)	No	/	/	Immediately	/
158	39 (m)	Father	Gunshot (assault rifle FAS 57)	Yes	/	/	Immediately	/
"	"	Father	"	"	"	"	"	"
163	19 (m)	Son	Gunshot (assault rifle FAS 90)	Yes	/	/	Immediately	Offender lived in psychiatry, homicide was during a weekend-visit at home
"	"	Son	"	"	"	"	"	"
"	"	Brother	"	"	"	"	"	"
"	"	Brother	"	"	"	"	"	"
167	35 (m)	Ex-husband of girlfriend	Unknown	Unknown	Unknown	Unknown	Unknown	Suicide in prison
169	36 (m)	Ex-boyfriend of girlfriend	Unknown	Unknown	Unknown	Unknown	1 d	Suicide in prison, stated to kill also his ex-girlfriend
171	47 (m)	Husband	Hanging	/	/	/	Unknown	/

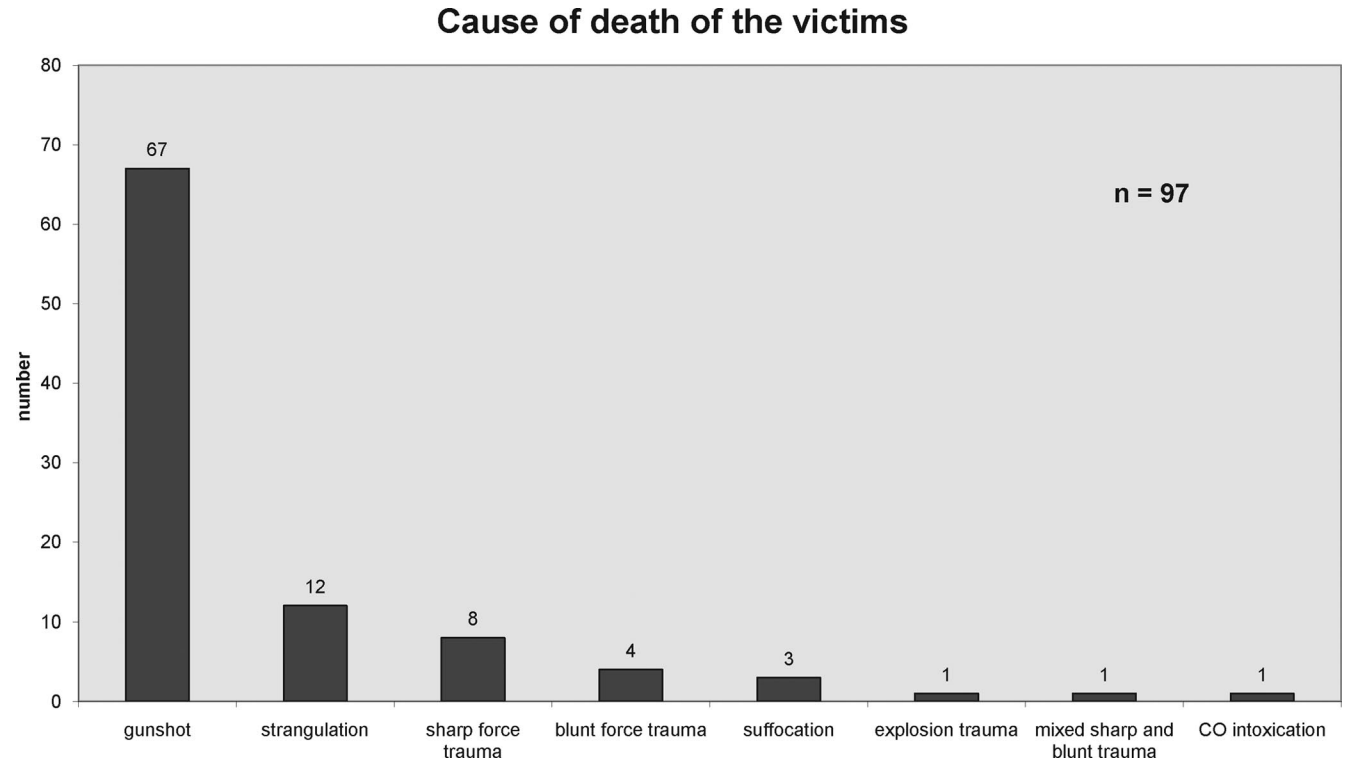


FIGURE 3. Graphic demonstrating the cause of death of the 97 victims that were included in the study.

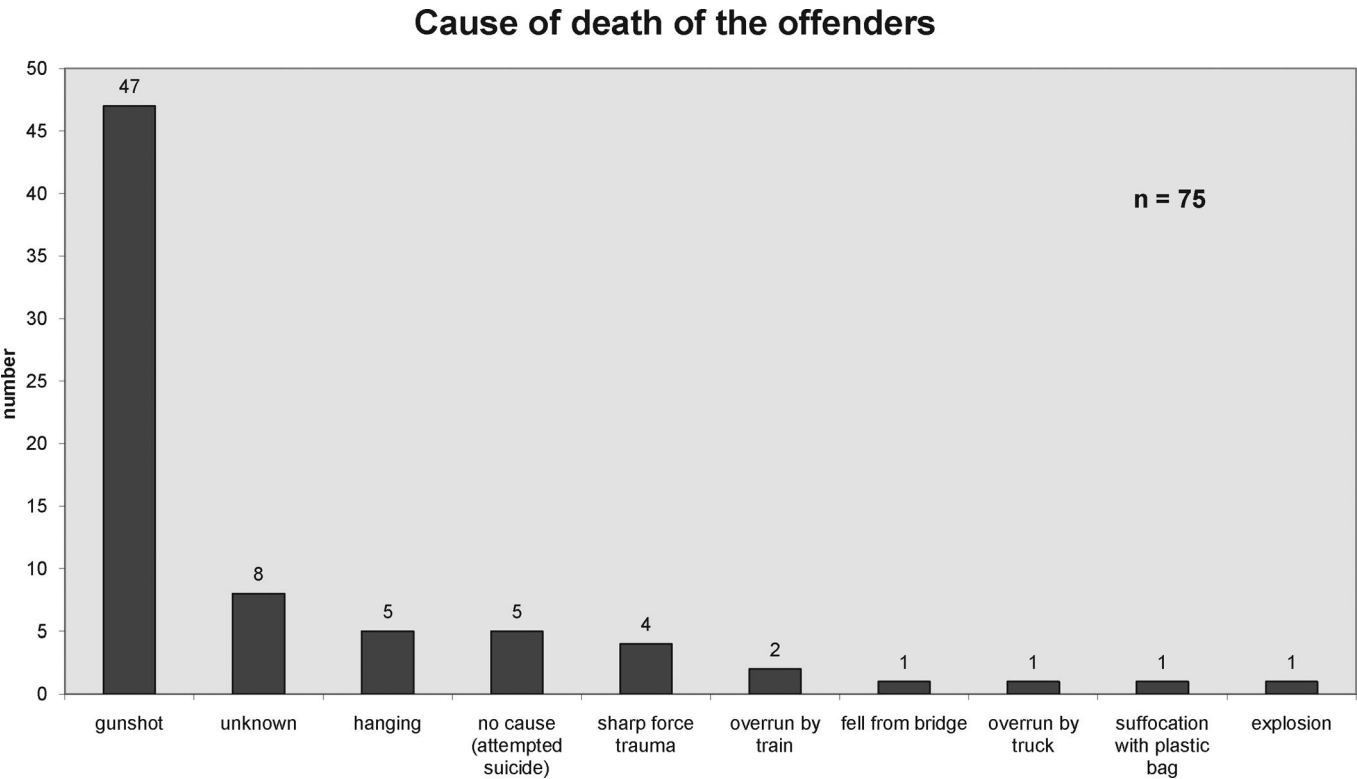


FIGURE 4. Graphical visualization of the cause of death of the 75 offenders who were investigated.

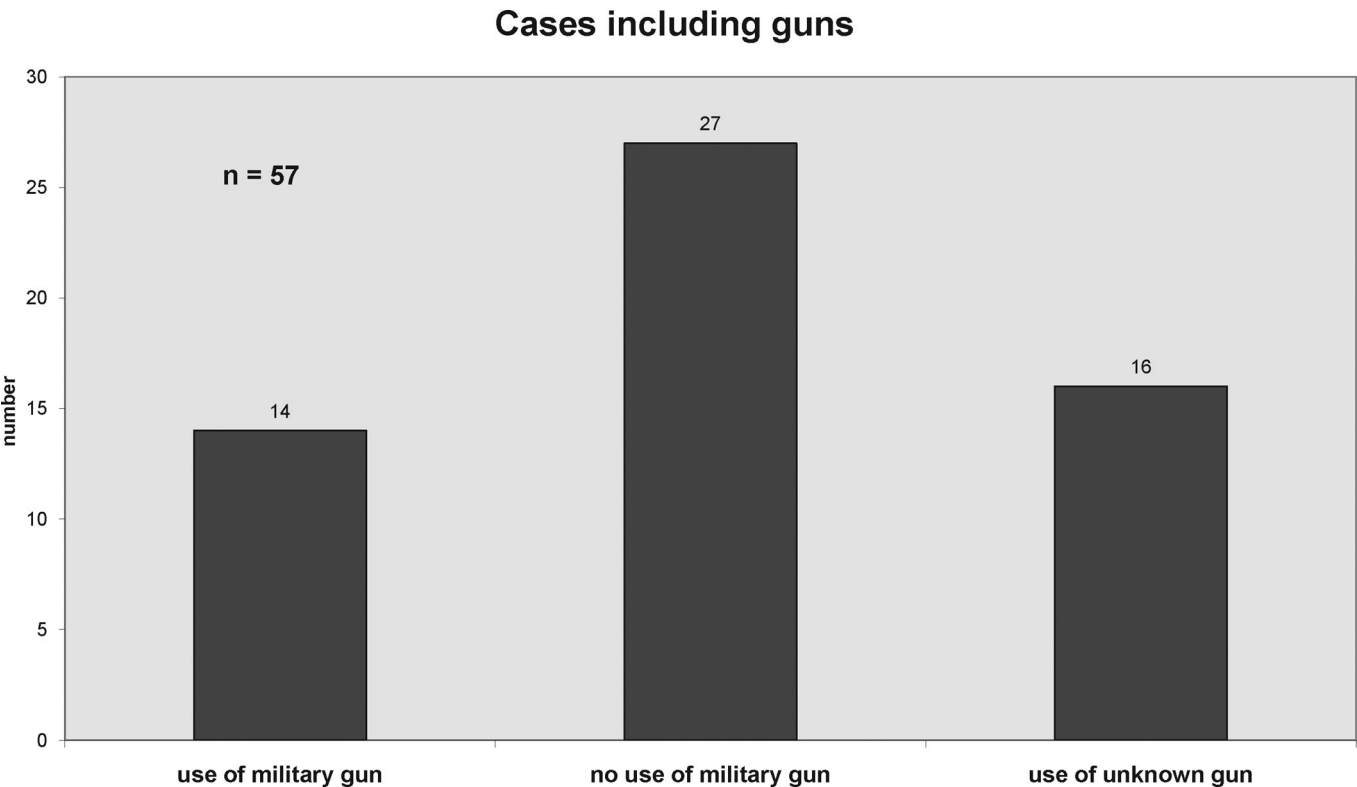


FIGURE 5. In 57 cases investigated in our study, firearms were used. This graphic groups the weapons in military weapon, no military weapons or weapons with unknown origin.

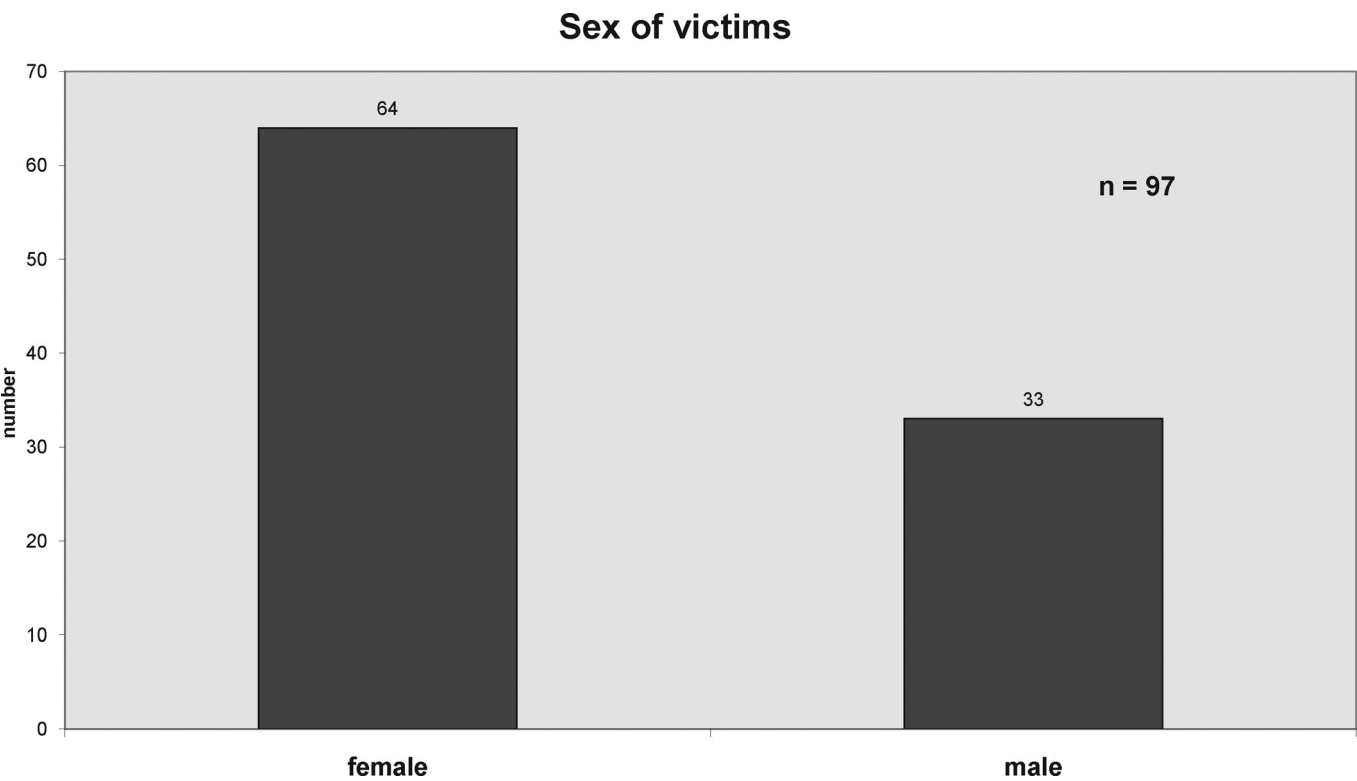


FIGURE 6. Graphic showing the distribution of the victims according to their sex.

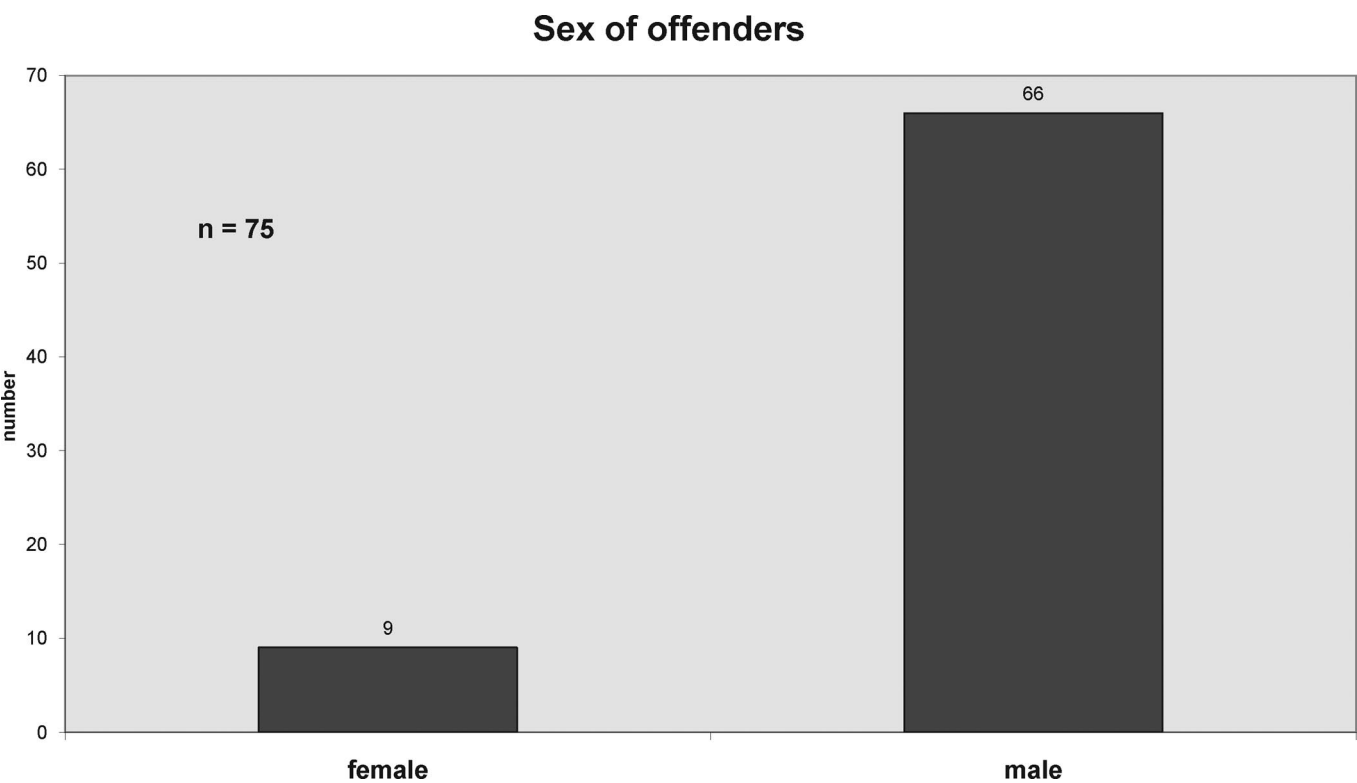


FIGURE 7. Graphic showing the distribution of the offenders according to their sex.

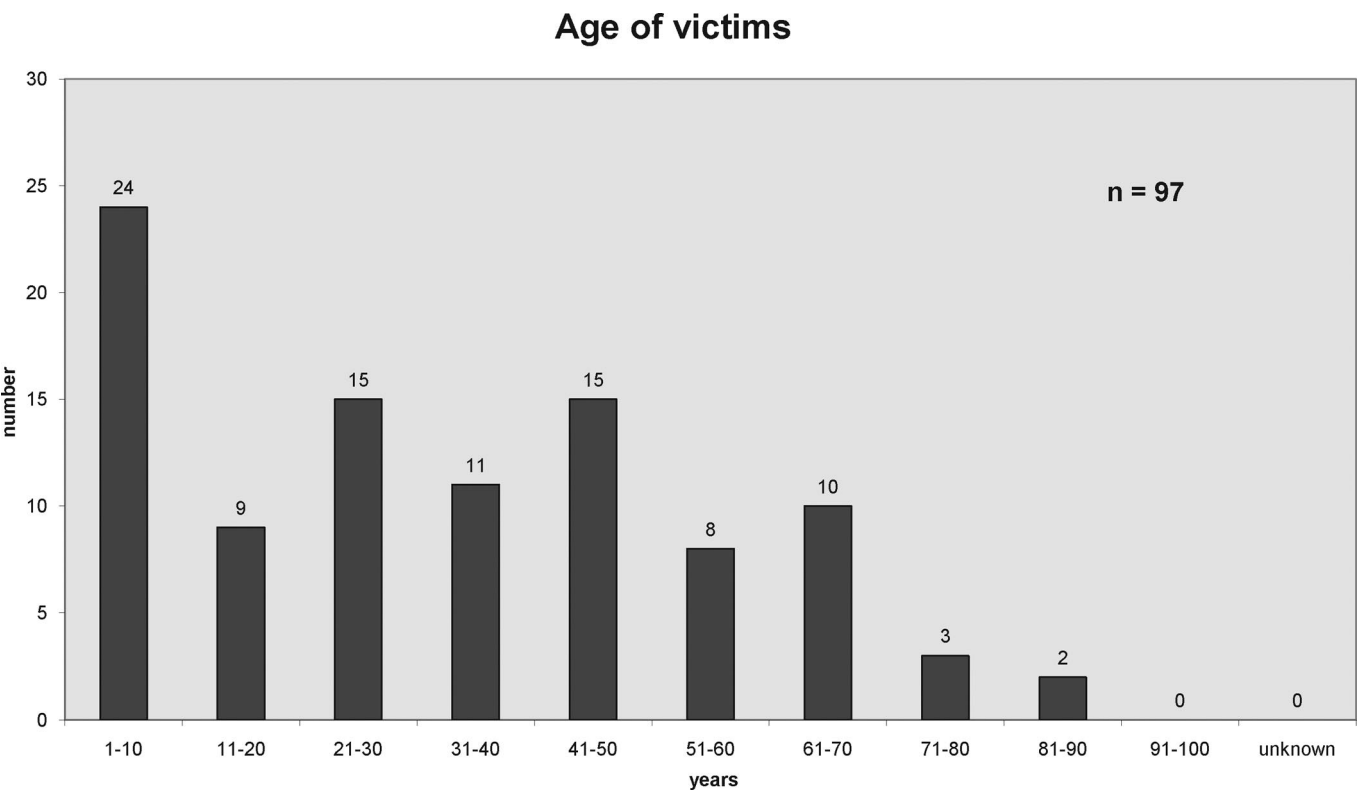


FIGURE 8. Visualization of the age distribution of the victims in groups of 10 years.

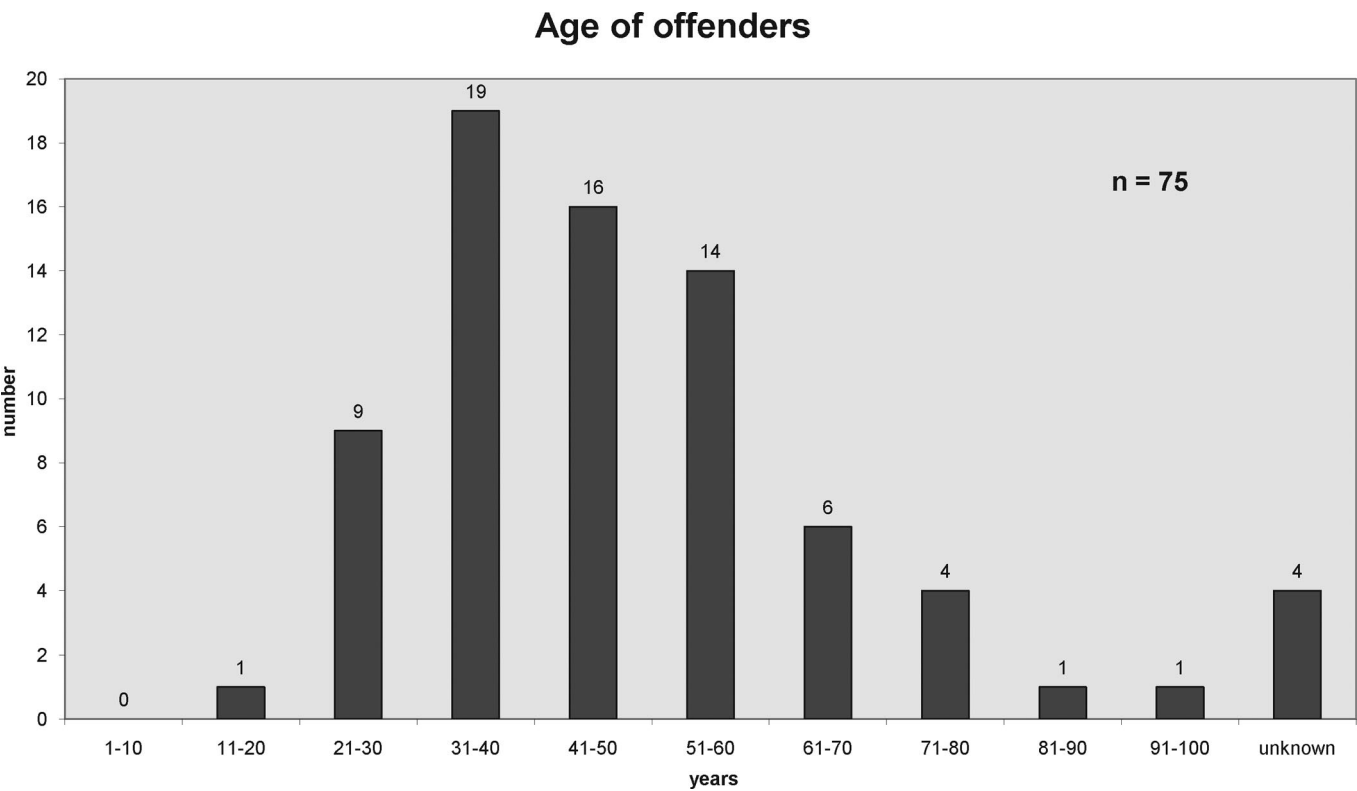


FIGURE 9. Visualization of the age distribution of the offenders in groups of 10 years.

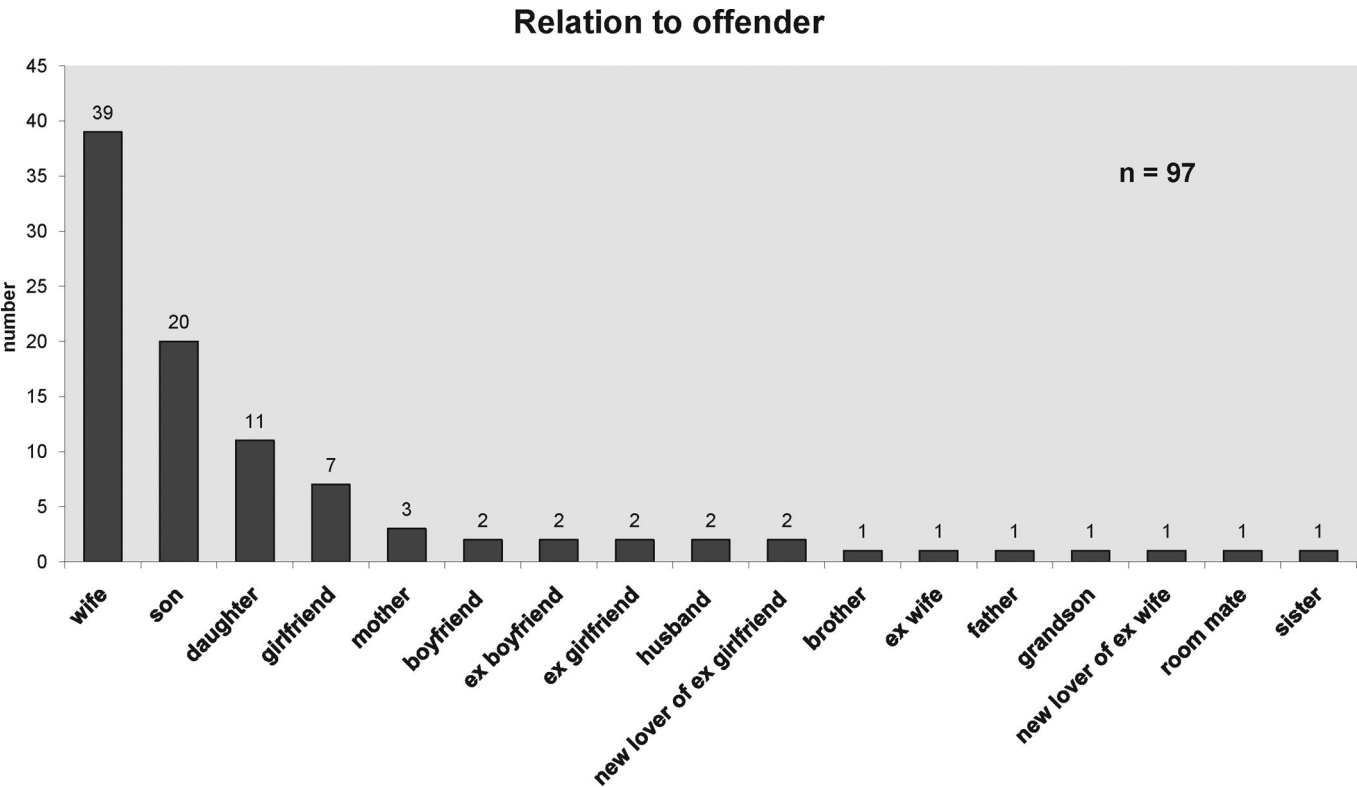


FIGURE 10. Graphic showing the relation status of the victim to the offender.

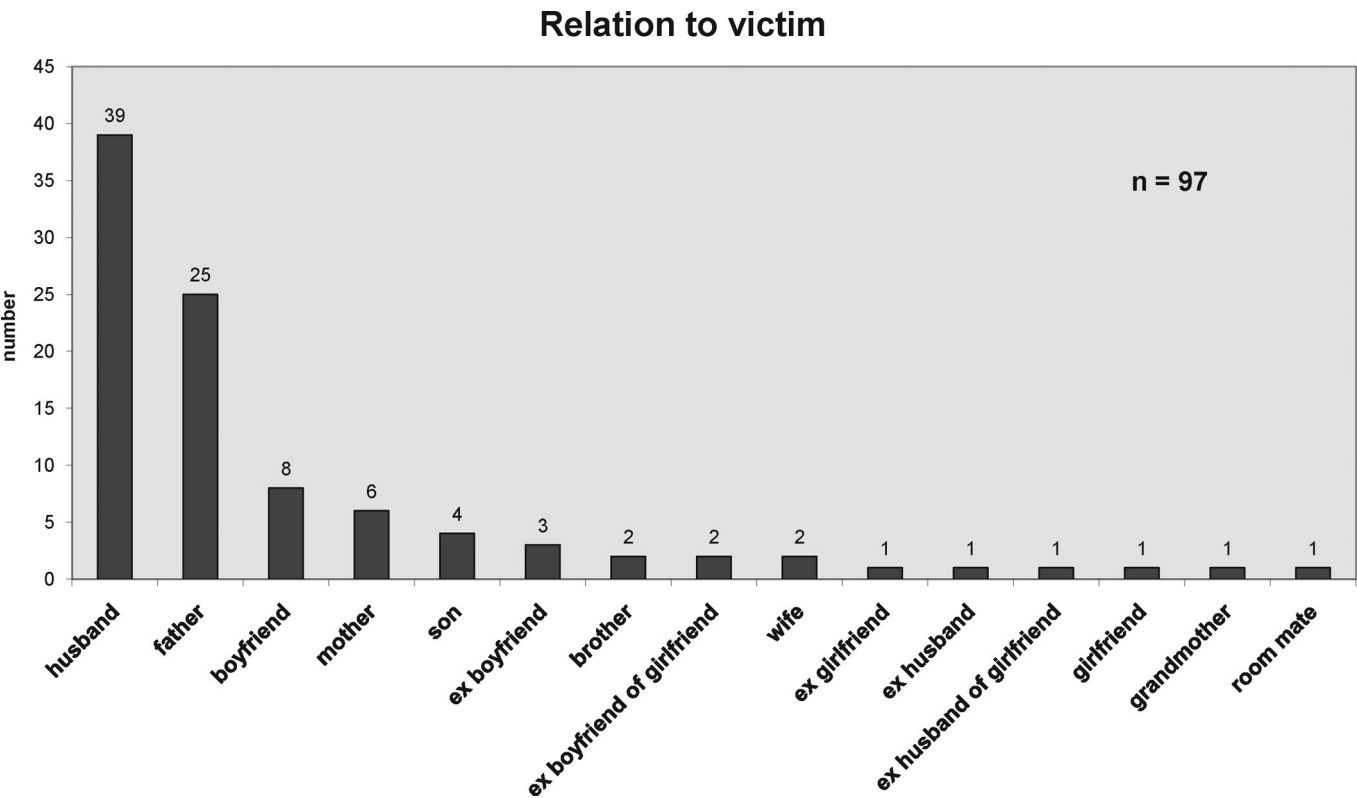


FIGURE 11. Graphic showing the relation status of the offender to the victim.

In conclusion, Homicide-Suicide cases in Switzerland display all the characteristics of Homicide-Suicide cases in countries with easy access to firearms. In 76% of the cases, guns were implicated. The exact number of military weapons in these cases could not be estimated due to a lack of documented information. As described in the literature, restricting access to firearms may be a factor in the prevention of Homicide-Suicide cases. In Switzerland, it is easy to obtain firearms: anybody without a criminal record is allowed to purchase a weapon. At the time of the study, every Swiss citizen subject to military service was required by law to keep his military weapon and ammunitions at home. This regulation was changed recently as a first consequent of the ongoing political debate surrounding the Swiss weapon law. It is our opinion that a stricter weapon law would greatly contribute to reducing the number of cases of Homicide-Suicide in Switzerland.

REFERENCES

1. Available at: <http://www.ejpd.admin.ch>. Accessed November, 2008.
2. Available at: <http://www.sp-ps>. Accessed October, 2008.
3. Available at: <http://www.bfs.admin.ch>. Accessed November, 2008.
4. Allen NH. Homicide followed by suicide: Los Angeles, 1970–1979. *Suicide Life Threat Behav*. 1983;13:155–165.
5. Currens S, Fritsch T, Jones D, et al. Homicide followed by suicide—Kentucky, 1985–1990. *MMWR*. 1991;40:652–653,659.
6. Palmer S, Humphrey JA. Offender-victim relationships in criminal homicide followed by offender's suicide, North Carolina, 1972–1977. *Suicide Life Treat Behav*. 1980;10:106–118.
7. Marzuk PM, Tardiff K, Hirsch CS. The epidemiology of murder-suicide. *JAMA*. 1992;267:3179–3183.
8. Comstock RD, Mallonee D, Kruger E, et al. Epidemiology of homicide-suicide events Oklahoma, 1994–2001. *Am J Forensic Med Pathol*. 2005;26:229–235.
9. Felthous AR, Hempel A. Combined homicide-suicides: a review. *J Forensic Sci*. 1995;40:846–857.
10. Milroy CM, Dratsas M, Ranson DL. Homicide-suicide in Victoria, Australia. *Am J Forensic Med Pathol*. 1997;18:369–373.
11. Malphurs JE, Eisdorfer C, Coden D. A comparison of antecedents of homicide-suicide and suicide in older married men. *Am J Geriatr Psychiatry*. 2001;9:49–57.
12. Milroy CM. The epidemiology of homicide-suicide (dyadic death). *Forensic Sci Int*. 1995;71:117–122.
13. Haenel T, Elsässer PN. Double homicide-suicide and homicide-suicide in Switzerland. *Crisis*. 2000;21:122–125.
14. Milroy CM. Homicide followed by suicide: remorse or revenge? *J Clin Forensic Med*. 1998;5:61–64.
15. Chan CY, Beh SL, Broadhurst RG. Homicide-suicide in Hong Kong, 1989–1998. *Forensic Sci Int*. 2004;140:261–267.
16. Malphurs JE, Cohen D. A statewide case-control study of spousal homicide-suicide in older persons. *Am J Geriatr Psychiatry*. 2005;13:211–217.
17. Rosenbaum M. The role of depression in couples involved in murder-suicide and homicide. *Am J Psychiatry*. 1990;147:1036–1039.