

PAPER**PATHOLOGY AND BIOLOGY**

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Homicide-Suicide in Konya, Turkey Between 2000 and 2007*

ABSTRACT: Homicide followed by the suicide of the murderer is a relatively rare lethal incident in which an individual kills another person and subsequently dies by suicide. Cases involving a homicide and a suicide in which death examinations and autopsies were performed at The Konya Branch of the Forensic Medicine Council between 2000 and 2007 were retrospectively investigated. During the studied time period, there were 10 homicide-suicide cases identified with 10 perpetrators killing 12 victims. Nine of the perpetrators were men and eight of the victims were women. The precipitating motive was an impending divorce in four of the cases. Two perpetrators were described as severely depressed, one had a diagnosis of antisocial personality disorder, and one was a pedophile who had reactive depression. Firearms were used in eight of the homicide cases and seven of the suicides. Constricting the use of firearms may reduce/prevent future homicide-suicide cases, as it is the most commonly used method to carry out homicide-suicides.

KEYWORDS: forensic science, homicide, suicide, violence, typology, death

Homicide-suicide (HS) events are defined by a perpetrator killing one or more victims before killing him or herself. The term “dyadic death” has also been used for these incidents, because deaths often involve a pair of persons (1). Although rare, these violent-injury events are traumatic for witnesses, have long-lasting impact on surviving family members, and can generate intense media coverage (2). In industrialized societies, though the incidents show noticeable differences, homicide-suicides are not as common as homicides (3).

Homicide-suicide incidents typically include one victim and one perpetrator (4). More than one victim or different injury types are rarely seen (5,6). In 95% of the HS cases, the perpetrator knows the victim (3,4,7,8). In a majority of these incidents, the homicide perpetrator is male, and older than the victim (8,9). Victims of these incidents are more likely to be women who have separated or are divorced from their partners (10,11). Homicide-suicides are multidimensional events, associated with the additive or multiplicative effects of many circumstances that lead to the emergence of homicidal-suicidal behavior. Although depression, schizophrenia, and other mental disorders are strongly implicated, homicide-suicides are violent events with multiple cultural, psychosocial, health, and environmental antecedents (12–15).

The majority of deaths associated with HS incidents involve a gun, with handguns being the most frequently used weapon (2,7). Other weapons associated with HS incidents include knives, blunt

objects, and motor vehicles, while other methods of homicide have included strangling/asphyxiation, poisoning, and physical assault (5).

Some reports (7,9,14) have proposed various typologies to better characterize this entity. These typologies may be viewed as frameworks for defining the problem and, ultimately, for directing public health initiatives toward its prevention (16). Countries vary in the distribution of HS across typological categories. It is reported that in Hong Kong, “mercy killings” (where one individual kills another to end his/her suffering) are less frequent, but spousal HS is more frequent than in European countries. In England and in Japan, maternal filicide-suicides represent a significant percentage of all cases (5,17).

In this study, the features of HS events from the province of Konya, Turkey were evaluated along with published data available in the literature.

Materials and Methods

Homicide-suicide events in which death examinations and autopsies were performed at The Konya Branch of the Forensic Medicine Council between 2000 and 2007 were retrospectively investigated. An HS event was defined as a homicide involving at least one person followed by a suicide of the perpetrator. During the autopsies, the forensic medicine experts were able to access all the information on the forensic investigations as well as seek other information concerning the victims and the perpetrators through interviews with the relatives of the deceased persons.

Cases identified as HS were examined for the following characteristics: age and sex of the offender and victim(s), the relationship of the victim to the offender, the methods by which the homicide and the suicide were carried out, the locations of the homicide and the suicide, mental health status of the offender, marital status, domestic violence history, financial difficulty, and the precipitating motive.

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They were also reviewed for cofactor data relevant to the typology of Hanzlick and Koponen (9) as modified by Hannah et al. (7).

Results

In the 8-year period between 2000 and 2007, it was determined that there were 408 homicides and 352 suicides out of the total of 3940 death examinations and autopsies that were performed during that time period. During the studied time period, 10 HS were determined involving 22 decedents (10 assailants killing 12 victims). Eight HS involved only one victim and two events involved two victims.

The mean age of the offenders was 32 years, ranging from 21 to 48 years, whereas the victims' mean age was 26 years, ranging from 2 to 50 years. Nine of the perpetrators were men and one was a woman and four of the victims were men and eight were women. Six of the victims were family members of their respective assailants, of whom four of the victims were a spouse, one was a son, and one was a mother-in-law.

Firearms were used in eight of the homicide cases and seven of the suicides. Other methods used to carry out the homicides were strangulation in two of the cases, poisoning in one of the cases, and stabbing in one of the cases.

In eight of the cases, the homicide and suicide both occurred in the same place. In four of the cases, the homicide and the suicide were both performed at home. Of the remaining cases, one case occurred at the barracks, at the café in the village, at the workplace, and in the street, respectively.

Nine of the perpetrators were married. A clear history of domestic violence was present in four of the cases. Two perpetrators were

described as severely depressed, one had a diagnosis of antisocial personality disorder, and one was a pedophile who had reactive depression. Three perpetrators were regarded by relatives and friends as unreasonably or extremely "hot tempered."

The precipitating motive was an impending divorce in four of the cases. For three of the cases it was a quarrel. Five of the perpetrators had financial difficulties prior to the HS. None of the perpetrators and victims had a history of substance abuse and none of them had physical illnesses. None of the perpetrators left a suicide note. Circumstantial data about HS incidents given in Tables 1 and 2 summarize these incidents according to Hanzlick-Koponen (9) typology modified by Hannah et al. (7).

Discussion

Homicide-suicide represents a distinct subcategory of homicide (3). Several studies have been conducted on the phenomenon of HS events worldwide. Summary of selected studies concerning HS events is given in Table 3 (2,4,5,12,16,18-23). The annual HS event death rate in the United States has been reported to be between 0.2 and 0.5 deaths per 100,000 persons, with rates remaining relatively stable over time (3,7,9,14,24). Estimates of the proportion of HS have ranged from as low as 1.5% of all recorded homicides in the USA (21) to 42% of all recorded homicides in Denmark (25). There are no available studies on the HS rates in Turkey.

Konya is Turkey's fourth largest city (according to the census data for 2007, the total population is 1,959,082, of which 968,666 are male and 990,416 are female) (26). During the 8-year study

TABLE 1—Circumstantial data about HS in Konya, Turkey, 2000-2007.

No	Age-Gender (a) Homicide (b) Suicide	Relationship	Method	Location	Marital Status	Domestic Violence History	Mental Health Status of Offender	Financial Difficulty	Precipitating Motive
1	(a) 2 M (b) 33 F	Son	Poisoning	Home					Altruistic
2	(a) 35 M (b) 21 M	Commander	Military rifle	Barracks	Married	+	Depression	+	Quarrel
3	(a) 37 F (b) 46 M	Spouse	Shotgun	Home	Married	+	Hot tempered	+	Impending divorce
4	(a) 44 M (b) 35 M		Shotgun	Home	Married		APD	+	Quarrel*
5	(a) 16 F (b) 22 M	Fellow townsman	Handgun	Cafe in the village	Married			+	Quarrel*
6	(a) 23 F (b) 26 M	Lover	Handgun	Cafe in the village	Married			+	Illegitimate relationship [†]
7	(a) 22 F (b) 24 M	Spouse	Handgun	Workplace	Married		Depression	+	Impending divorce
8	(a) 50 F (b) 48 M	Spouse	Handgun	Home	Married	+		+	Impending divorce
9	(a) 30 F (b) 48 M	Mother-in-law	Handgun	Home	Widow			+	Impending divorce
10	(a) 32 M (b) 28 M	Spouse	Handgun	Home	Married	+	Hot tempered	+	Quarrel [‡]
	(a) 9 F (b) 38 M	Stranger	Strangulation	Empty building	Married		Hot tempered		Quarrel [‡]
	(a) 10 F (b) 38 M	Stranger	Strangulation	Empty land			Reactive depression, pedophile		After sexual abuse of a child [§]
	(a) 10 F (b) 38 M	Stranger	Strangulation	Empty land	Married				

M, Male; F, Female; APD, antisocial personality disorder; HS, homicide-suicide.

*Perpetrator quarreled with the victim that had cultivated the land belonging to the perpetrator's father without permission.

[†]Perpetrator was married to another person.

[‡]After a traffic accident, the perpetrator stabbed and killed the victim following a quarrel with the victim. There was an order of arrest for him. On the same day, he committed suicide.

[§]The perpetrator had a reactive depression due to his perpetration. Although he didn't leave a suicide note, the police noticed in their official reports that he stated: "he could not live and he should put an end to his life, as his perpetration was an infamous crime."

TABLE 2—HS incidents according to Hanzlick-Koponen (9) typology modified by Hannah et al. (7).

	Victim (n = 12)							
	Adult		Child		Infant		Neonate	
	M	F	M	F	M	F	M	F
	1	2	3	4	5	6	7	8
Relationship of victim to perpetrator								
A) Spouse by marriage		4						
B) Common-law spouse								
C) Unmarried partner in relationship		1						
D) Extramarital consort (lover)			1					
E) Real or perceived rival lover								
F) Parent								
G) Offspring								
H) Sibling	2	1		2				
I) Grandparent	1							2
J) Grandchild	3	6	1	2				
K) Niece/nephew	3	6	1					
L) Aunt/uncle		5	1	2				
M) Cousin	3	1	1	2				
N) Family member other than those listed	1	6						
O) Acquaintance	2	6						
P) Stranger	2		1					
Q) Same gender as perpetrator	1			2				
R) Opposite gender of perpetrator								
S) Same race as perpetrator								
T) Opposite race than perpetrator								
U) Lives in same household								
V) Lives in different household								
W) No living witness(es)								
X) Living witness(es)								
Y) Shot								
Z) Stabbed/cut								
AA) Beaten								
BB) Other								
Specify								
Poisoned								
Strangulated								
Cofactors								
a) Impending divorce								4
b) Previously divorced								1
c) Real or perceived loss of nonmarital partner in a relationship (boyfriend, lover)								1
d) Jealousy or retaliation for partner's real or perceived involvement with another person								1
e) Retaliation against a real or perceived rival lover								6
f) Mercy killing								5
g) Altruism (to save from "evils of the world")								4
h) Financial stressors								
i) Family stress or dysfunction								8
j) Perpetrator intoxicated with alcohol								2
k) Perpetrator intoxicated with drugs other than alcohol								
l) Perpetrator had known history of psychiatric illness								8
m) Unspecified, other or unknown factors								2
Specify: _____								
Special classifications								
n) Family annihilator								1
o) Dyadic								
p) Triadic								
q) Followed a mass-murder or serial murders committed by the perpetrator								
r) Stalking associated								
s) Workplace homicide								

HS, homicide-suicide.

period, only 2.9% of all the homicides were classified as HS in Konya.

Fully investigating HS events requires looking beyond the demographics of the perpetrators and the victims to the environment in which these events occurred and the influence of the relationships between the perpetrators and the victims (2). Accurate descriptions

of epidemiologic patterns, risk groups, and risk factors associated with HS are the first step to developing intervention and prevention strategies (1).

Existing findings report that HS cases are predominantly committed by male offenders and females are typically the victims (Table 3). In our study, 90% of the perpetrators were male and

TABLE 3—Summary of selected studies concerning HS events.

Country	Authors	Years	Number of HS Events	Male Offenders (%)	Female Victims (%)	Offender Mean Age	Victim Mean Age	Firearms (%)	Spouse or Lover as Victims (%)
Turkey	This study	2000–2007	10	90	66.6	32	26	80	42
USA	Comstock et al. (2)	1994–2001	73	93.2	79.8	42	34	97.3	66
USA	Campanelli and Gilson (16)	1995–2000	16	94	88	38	34	75	69
Hong Kong	Chan et al. (5)	1989–1998	56	75	63.5	41.9	32.3	28.9	28 events
France	Lecomte and Fornes (18)	1991–1996	56	85	60	51.0 male, 40.5 female	NA	80	45
Australia	Carcach and Grabosky (19)	1989–1996	144	91.4	73.6	39.6	33.2	60	43
UK	Barraclough and Harris (4)	1988–1992	144	85	75	35–44 (mode)	NA	28.9	67.4 events
UK	Milroy (12,20)	1975–1992	52	94	60 (excluding children)	48.4	NA	33	74
Canada	Buteau et al. (21)	1988–1990	39	90	NA	NA	NA	56	32 (spouses)
Finland	Saleva et al. (22)	1987–1988	10	90	NA	42.2	NA	70	50
USA	Berman (23)	1974–1975	20	100	87.5	38.4	NA	95	67

NA, not available; HS, homicide-suicide.

66% of the victims were female. It is reported that most HS offenders are married (14,21). Similarly, nine of 10 offenders in this study were married.

Homicide-suicide incidents involving strangers are rare (11). In previous studies of HS incidents, more than 95% of the perpetrators were known to the victims (5,8,10,21,27). Similarly, most of the perpetrators (8/10) in this study were known to the victims.

Milroy et al. (1) reported that the majority of HS occurs between family members. Half of the HS incidents (5/10) occurred between family members in this study. In most cases of HS, the perpetrator is a former or current husband or other intimate partner and the homicide is carried out in the home of the victim (22). The most typical HS case seems to involve a man shooting a family member during a separation process (11). In the United States, the most common type of HS represents 50–75% of all HS and involves morbid jealousy with a man between the age of 18 and 60 years killing his wife or his female partner using a firearm, because of the breakdown of the relationship with resultant revenge, or after development of suspicion or knowledge of his partner's infidelity (14). In this study, six of the victims were family members of the assailants. In four of the HS cases presented in this study, the precipitating motive was an impending divorce.

Many studies did not distinguish economic stress as a motive because of its rarity and some concluded that HS offenders were generally from higher socioeconomic status (23,28). In Paris (18) only 5.4% of HS and 11% of HS in Yorkshire and Humberside (12) were found to be triggered by economic reasons. Nevertheless, Chan et al. (5) reported that a quarter of the HS in Hong Kong arose from economic disputes or problems and more than one-third of offenders faced imminent economic crisis. In this study, five of the perpetrators had financial difficulties prior to the HS.

In a United States national survey of all deaths by guns during a 1-week period in 1989, 11 gun-related HS events were identified that resulted in 22 deaths (29). Extrapolation of these data over a year would translate to 1144 gun-related HS events. Although these numbers are relatively small when compared with other issues, such as deaths attributed to motor-vehicle crashes or to homicides and suicides in general, they represent a unique subgroup of interpersonal violence (2). The finding that most homicides (8/12) and most suicides (7/10) result from a gunshot wound were consistent with past research on HS cases (2,7,30). Chan et al. (5) reported that females tended to use more passive methods to kill while male offenders were likely to adopt more active methods. It may be because most of the victims of female offenders were their own children and in many cases, they were recorded to be caring and

loving to their victims before the incidents. In seven of the cases evaluated in this study, both the homicide and the suicide were carried out with firearms by male perpetrators, while in one of the cases, poisoning was used to carry out both the homicide and the suicide by a female perpetrator.

The large majority of suicides in HS episodes can be regarded as extended suicides, where the assailant has decided to commit suicide and decides to kill close family members as well. The suicide of the assailant is not, therefore, considered to be the ultimate expression of remorse, as the primary act is their own suicide. When considering the death of children and elderly victims, an element of misplaced altruism may be present in the assailant. Remorse remains a minor reason for suicides (31). A pattern of HS is filicide-suicide. The age- and sex-related risk of dying at the hands of his or her mother or father is unknown. Boys and girls appear to be at nearly equivalent risk. Mothers are more likely to kill children than are fathers. Depression, often with psychotic features, is a frequent diagnostic: the mother perceives her child as an extension of herself and both deaths represent an "extended" suicide (10,32). In one of the cases in this study, the fact that the mother who had been suffering domestic violence by her husband and who had depression killed her son before she killed herself so that he would not be left alone highlights one such case where an altruistic thought was involved in the motive of the crime.

It has been reported that most suicides following a HS incident occurred in the same location as at least one of the homicides (30). Similarly, in this study, the cases between the first and eighth cases involve respective homicide and suicide that were carried out in the same place and with the same method of death. The perpetrator in the ninth case hanged himself in an empty building 1 day after he had killed a person who he had quarreled with about a traffic incident. In these cases, the crime was performed during a moment of anger and reaction. However, upon feeling remorse for the crime and becoming aware of the seriousness of the situation, the assailant decided to commit suicide. The perpetrator in the 10th presented case murdered two girls after sexual assaulting them and then committed suicide on the 27th day in prison using underclothes. In his testimony to the police before he committed suicide, he stated that, "I am aware of the fact that this crime is against humanity and I won't be able to live with the heaviness of this crime." It is thought that the assailant's suicide was caused both by the fear of the concealed embarrassing crime becoming public and the social pressure, as both the homicides were committed after sexually assaulting the victims and the suicide was carried out after being caught.

The consistency of homicide-suicide rates reported in previous studies has been attributed to the constancy of depression and other psychiatric problems in adult populations. It is reported that depression and schizophrenia are the most common mental disorders in HS cases (14,18,33,34). In addition, previous research showed those less able to control anger and impulsiveness were at greater risk of violent conduct (5,33,35). In this study, two perpetrators were described as severely depressed, one had a diagnosis of antisocial personality disorder, one was a pedophile who had reactive depression and three perpetrators were regarded by relatives and friends as unreasonably or extremely "hot tempered."

It is reported that approximately one quarter of homicide/suicide incidents involve persons over the age of 55 (36). Cohen et al. (15) emphasized the importance of psychiatric and public health implications of HS in the older population. As people continue to live longer, with the greater likelihood of comorbidity, frailty, and disability, including Alzheimer's disease and related disorders, spouse caregivers will continue to be at high risk for depression and other psychiatric disorders (15). Mercy killings between older couples were reported in some studies (14,21,37). In their study, in which they evaluated HS cases in Hong Kong, Chan et al. (5) reported that the absence of mercy killings between old couples may be due to traditional Chinese values, which emphasize parental dignity and encourage cohabitation with elderly parents. The oldest perpetrator was 48 years old and the oldest victim was 50 years old in this study. As social support is common in Turkey and old people are provided with sufficient protection by their families, HS in older persons rarely occurs in Turkey.

The data in this study were similar to those obtained in other studies and showed: (i) most perpetrators were male (in nine cases); (ii) there was usually one victim (except in cases 8 and 10); (iii) perpetrator and victim were intimate partners in five cases; (iv) a firearm was used as the weapon in seven cases; and (v) the same method was used for homicide and suicide (except in two cases). Our results differed from those reported in other studies in respect to the high relevance of economic factors and the absence of mercy killing between old couples. We have followed Marzuk et al.'s (14) call for more studies of these events like Saint-Martin et al. (17), although a limited number of cases which does not permit statistical analysis is a limitation of the study.

Both targeted prevention efforts for victims and perpetrators of intimate partner violence and maintaining an awareness of the increased risk for HS following situational stressors are needed. The type of information that is important when determining who should be targeted for preventive interventions could include: (i) identifying potentially violent persons who may be depressed, or may reflect demographic groups more often involved in HS events; (ii) identifying relationships with ongoing patterns of abuse that could escalate to murder; (iii) identifying communities less effective at issuing protection orders to potential victims and protecting those who have obtained victim protection orders; and (iv) identifying communities in which it is more difficult to access mental health care and social services (1). The availability of methods seems a genuine preventive issue regarding impulsive acts, and prevailing firearm legislation must surely affect the rate of HS (22). Chan et al. (5) reported that as there was very strict gun control in Hong Kong, usage of firearms in HS was extremely low.

In conclusion, it is difficult to prevent homicide-suicides. There is a need for a larger series of similar studies so that preventive precautions can be taken against HS cases. This study highlights that spouses who are in a splitting or divorcing process should be given psychological support as they represent the most at risk

group in terms of HS. In addition, the use of firearms should be constricted, as it is the most commonly used method in HS cases.

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