MEDICO LEGAL IMPLICATIONS OF HOMICIDE FOLLOWED BY SUICIDE

Stevan Todorović1, Aleksandra Antović1,2

Homicide followed by suicide, in the literature known as homicide-suicide (H-S), represents a distinct entity of homicide phenomenon which implies the suicide of a perpetrator after killing one or more persons. Dyadic death (DD) belongs to a special subgroup of H-S and implies the suicide of a perpetrator after killing a single victim. The perpetrator is most often a man in his forties who commits suicide soon after killing his wife or intimate partner because of separation or alienation. The scientific literature has identified various categories of H-S and DD that include killing a victim followed by the suicide of a perpetrator as a part of marital violence caused by jealousy or anxiety due to growing old and/or poor health of marital partners, and more rarely as a part of family violence or when a parent kills his/her child and then him/herself. Groups of the so-called extra-familial H-S include a mixed group of perpetrators composed of dissatisfied workers, members of different cults, religious or political groups who, as a rule, do not kill one, but more victims. Due to the number of victims, such cases do not fall into the DD category from a medico legal point of view.

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Introduction

Murder is any unlawful violent killing of another human (1). The research into the phenomenology and the etiological characteristics of a murder as a criminal offense and one of the socially most dangerous phenomena represents not only a challenge for scientific disciplines of social, sociological and psychological character, but also a specific curiosity for forensic science. Many homicidal studies provide different classifications of a murder based on the somatic and psychological characteristics of a killer and victim, the time-space connection and their mutual interactions, the way of execution, the consequences, the number of victims, etc. Within this enormous and heterogeneous murder group, a special emphasis is given to a murder followed by suicide, in the literature known as homicide-suicide (H-S), which, as a distinct entity, represents the suicide of a perpetrator after killing one or more persons (2). Depending on whether the act of suicide ensued after the deprivation of life of one or more persons, we are talking about a dyadic death (DD), a triadic death, or an extended murder. Historically, the phenomenon of H-S and DD was even described in Greek tragedy through dyadic family relationships between parents and children (3). The act of suicide most often happens subsequently after the murder on the same day or shortly after it. However, according to some authors, the DD category also includes suicides committed after a long period of time that occur up to one week, i.e. up to 3 months after murdering a victim (1, 2). Certain common epidemiological characteristics between murder, H-S and DD have been determined in the literature dealing with homicide and suicide issues, since H-S and DD share many similarities with family murders, murders of intimate partners, mass murders and suicides. However, there are also special specific features that are characteristic of H-S and DD (1, 2, 4).

H-S and DD groups do not include the cases of murders followed by the suicide of a perpetrator which are conditioned by culturally-specific circumstances such as, for example, amok in Malaysian culture (a specific traditionally-culturally conditioned sociopathic behavior manifested by the sudden episode of uncontrolled anger of a person, usually male, followed by the killing of a large number of
people and then by suicide), as well as cases in which the perpetrator accidentally got killed or attempted but did not commit suicide (2, 4).

The incidence of homicide-suicide

The results of modern research clearly show that, in most developed countries in the world, the H-S rates are low, usually much lower than the rates of murder, whereas suicide represents the leading cause of death (4, 5). Namely, the literature records rates of 0.2 to 0.3 per 100,000 people a year in the United States (4-6) although it is difficult to precisely determine the occurrence of such a phenomenon because there is no internationally standardized classification and cases of H-S are recorded in official statistics as specific cases of suicide or murder. The percentage of H-S, and therefore DD, is usually smaller in countries and regions where there is a high rate of homicide, that is, higher in areas where murders are rare (4-7), for example, the recorded percentage of murder followed by suicide is 42 % in Denmark where the rates of murder are low, compared with 4 % in the US where murder rates are much higher (5). Although variations in definitions and practices make it difficult to provide accurate rating, it is estimated that between 1000 and 1500 H-S occur in the United States annually, with relative stability in the western countries of the United States (4, 5). Observing official data (8), the murder rate in Atlanta was 38.8 per 100,000 inhabitants from 1988 to 1991, compared to a much lower murder rate of 1.11 per 100,000 inhabitants in England and Wales from 1980 to 1990. In the same countries, H-S rates were 0.46 and 0.07, accounting for 1.4 % of the total number of murders in Atlanta and 7.2 % in England and Wales (7, 8).

Homicide-suicide classification

Different classifications for H-S are used in the modern literature. Marzuk et al. (2) proposed a basic classification system based on the type of relationship between the victim and the perpetrator as well as the motives of a perpetrator, which was later modified by Hanylick and Koponen (4). According to this classification, H-S is divided into three basic subtypes that include murdering marital/intimate partners, family members and extra-familial people. The group of marital/intimate partner murders includes distinct entities such as cases of H-S of elderly marital/intimate partners, whereas the group of family H-S includes murdering children followed by the suicide of parents (2-4) (Table 1).

Table 1. Classification of murder followed by suicide

<table>
<thead>
<tr>
<th>Type of H-S*</th>
<th>Perpetrator of H-S</th>
<th>Murder types</th>
<th>Factors and Cofactors of H-S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital / partner H-S</td>
<td>Spouse</td>
<td>Murders of a wife (uxoricid), murdering a husband/intimate partner (mariticid)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intimate partner / extra-marital partner</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mother</td>
<td>Killing a newborn (neonaticid), killing a one-year old child (infanticid-filicid), killing a child between ages of 1-16 (pedicid)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Father</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Child (&gt;16 years of age)</td>
<td>Matricid, patricid, familicid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Another adult member of the family (&gt;16 years of age)</td>
<td>Familicid (matricid, patricid, fratricid, sororicid...)</td>
<td></td>
</tr>
<tr>
<td>Extra-marital H-S</td>
<td>Adult male or female</td>
<td>Homicide</td>
<td>Love jealousy, Merciful murder, Altruistic or extended suicide, Family, financial or social stressors, Retaliation, Other, Unspecified</td>
</tr>
</tbody>
</table>

* H-S: homicide-suicide
Since the above classification system provided by Marzuk et al. has certain deficiencies (inaccurate definition of terms "intimate partner", "intimate partner relationship" and relationship between a killer and victim, lack of data regarding the race and sex of victims and perpetrators, types of weapons/tools, etc.), Hanzlik and Koponen (2, 4) proposed an alternative typological system that enables analyzing and monitoring much more data on the demographic and epidemiological features of individual H-S and DD cases which are listed in the following sections.

The relationship between the victim and the assailant

In a broader context, the term relationship between the victim and the assailant implies a way in which two or more persons are interconnected (2). Regarding this very issue, the term "relationship" implies two people being connected through marriage, extramarital relationship, intimate (love) relationship, parenthood, descendants, blood relations in the straight and collateral line.

Cofactors

The basic cofactors for the H-S and DD include the upcoming divorce, the earlier divorces, the actual or perceived loss of an unmarried spouse or intimate partner (separation), jealousy, retaliation for a partner's real or perceived infidelity, revenge against a real or perceived lover of a spouse/intimate partner, "mercy" (merciful murder), altruism ("rescuing" from real or perceived dangers that surround them), financial stressors, family distress, dysfunctional family relationships, alcoholism and/or abuse of psychoactive substances by perpetrators, history of mental illnesses of perpetrators, as well as non-specific and unknown factors (2, 4).

Motivation

A perpetrator's motivation to kill a victim is rather complex and varies considerably depending on the case. Determining the frequency of mental disorders among perpetrators is further made difficult due to differences in psychiatric diagnostic approaches and classifications of mental illness (2, 4). Nevertheless, there are some generalized and common features that can be observed in most H-S and DD. Although professional literature does not contain such extensive and reliable information about the psychological profiles of perpetrators before the fatal events, psychiatric disorders are considered to have, if not basic then at least a very important role in forming numerous categories of such murders. In cases of family H-S, especially of the marital ones, with the recent separation of intimate partners, problems of a psychic nature are most commonly manifested in the form of paranoia, pathological jealousy and psychosis. Alternatively, depression can play an important role in cases when a parent kills his/her child and it occurs more frequently in H-S perpetrators than the perpetrators of any other type of murder. For this reason, it is assumed that H-S represents only an extension of a suicidal act (9, 10). Also, some H-S perpetrators have a history of previous suicide attempts, as well as a history of a psychiatric treatment (10, 11).

When it comes to killing children, cases of delusional or psychotic disorders with elements of religious devotion also recorded (for example, the case of a child's murder by a father who, before committing suicide with a firearm, cuts his hand off with an axe, because 'if thy hand or thy foot offend thee, cut them off, and cast them from thee: it is better for thee to enter into life halt or maimed, rather than having two hands or two feet to be cast into everlasting fire.' Gospel of Matthew XVIII) (1). Perpetrators have also been described as impulsive individuals with poor control of aggression and asocial personalities, but also with noted psychological disorders such as loss of self-esteem, frustration, low self-confidence (11). Stressful life events can also trigger H-S in general. Among them, financial or workplace problems, including job losses, are predominant, whereas marital dispute with a feeling of being rejected and alienated, as well as a significant disrupted physical health, can play a significant role in cases of marital and family H-S. The history of family violence of H-S and DD perpetrators towards a victim is very common (10-13), while in the cases of DD of elderly spouses there is usually a prior agreement between the spouses with mutual consent to perform this act which is more desirable when compared to life with an incapacitating disease or unfavorable living conditions (14).

Abuse of alcohol, drugs and other psychoactive substances can also exacerbate the aforementioned factors in cases of H-S, although the presence of these substances is not always revealed by toxicological-chemical analysis during autopsy. This statement is supported by the results of numerous studies that showed lower levels of alcohol in victims and perpetrators compared to the levels of alcohol in those who participated only in the murder (15). According to these researches, abuse of drugs and alcohol was recorded in 17 % of perpetrators (11), the presence of psychoactive substances in 10 %, alcohol in 21 %, and drugs and alcohol in 13 % of H-S perpetrators (2, 4, 15). Revenge can be a significant motive in homicide cases of estranged spouses, but also in cases of unsatisfied workers (2, 4).

Significant efforts have been made in numerous studies to clarify the fact whether H-S represents a murder with suicidal elements or a suicide with homicidal elements. However, the results of these researches have shown that such cases are often carefully preplanned by the killer and that demographic characteristics of H-S are significantly different from those of suicide, which has therefore led to a conclusion that H-S is a distinct entity both in relation to suicide and in relation to murder. The H-S special group includes: "family breaker", "triadic death", suicide after mass or serial murders committed by one perpetrator (2, 4).
Types of homicide-suicide

Spousal homicide-suicide

In a group of spousal H-S and DD, the perpetrator is usually a man - a spouse or intimate partner who suffers from "pathological jealousy" or jealous anger caused by frustration (1, 4, 10, 16), aged between 18 and 60, who deprivess his own wife or intimate partner of life mainly because of suspicion or knowledge of her infidelity. In some cases, intimate relationships among partners are characterized by real abuse and partner's infidelity. However, cases in which the suspicion of infidelity is unrealistic and is of a delusional character or is present as a part of the psychotic episodes of a perpetrator are more common. The situation in which delusions caused by uncertainty led to irritability, depression and aggression of perpetrators are defined in professional literature as "Othello Syndrome" (17). More than 90 % of H-S which involve intimate heterosexual partners was performed by a man who kills a new intimate partner of his wife/partner, which is defined as a triadic death (4, 10). The results of one study showed that the recent separation from a wife or intimate partner increases the risk of H-S and DD by 35.3 %, compared with only 21.6 % of DD where intimate partners are not separated (18).

One-third of all the cases of murdering women by their new intimate partners ended in the suicide of perpetrators (19). The motives of such suicides are the focus of the professionals, and according to the most widespread opinion, those motives are preceded by the history of partner violence, the history of family violence in childhood, the high level of control and power over a partner during an intimate relationship, as well as the pathological jealousy and possessiveness of a perpetrator. Such H-S is not usually a product of a perpetrator's impulsive decision. On the contrary, the murder of a partner has long been planned and devised, both in terms of time and in terms of the method of performing this act. Based on what has been stated, it can be concluded that the most important strategies for preventing spousal/partner H-S are focused on reducing violence in intimate partner relationships and early identification of cases where there is the highest risk of committing the fatal act. These measures should be undertaken especially in the first months after the separation of partners and they should make it impossible for a perpetrator to own firearms (19).

A subtype of DD, which involves the murder of a spouse accompanied by the suicide of a perpetrator, includes an elderly married couple who have been married for several decades, both of whom suffer from severe illness and/or have existential problems and/or suffer from social isolation (20). In such circumstances, a husband is usually the one who killing his wife by using firearms or by suffocation, and who then commits suicide. This type of activity coincides in some ways with the so-called group of "merciful murders" and "suicide pacts", and it is also described in cases where the partners of victims who suffer from immunodeficiency syndrome (HIV) commit suicide after the "merciful murder" (20, 21). The distinction between the "suicide pact" in which two people consecutively commit suicide and DD within H-S represents a very delicate medico legal problem which makes it particularly difficult to differentiate suicide pacts between parents and children from H-S i.e. DD (21).

Family homicide-suicide

Family H-S most often involves the murder of one's own child (infanticide) by a parent who commits suicide afterwards. Suicide after infanticide is rare and unusual in most countries, with 10.5 % of fathers and 2.3 % of mothers who commit suicide after killing a child. In Japan, there is a somewhat higher incidence, with an estimated 500 cases of such deaths being reported annually (22). It is assumed that when it comes to women who kill their own child, it is actually an "extended suicide" where she acts as an altruist in order to "save" her child from specific or potential dangers in their surroundings. The methods that women tend to use when killing their children indicate low intensity violence as opposed to the type of violence applied by men killers, so the most commonly used methods by mothers to murder their children are poisoning, suffocation and exposure to carbon monoxide, whereas fathers tend to use firearms, perform strangulation or stab with a knife (22, 23). Furthermore, women often sedate children, and they very rarely kill their spouses/intimate partners or non-biological family members as a part of this act. This phenomenon is contrary to male perpetrators of H-S who, after killing their child/children, very often also kill other children (non-biological or children who were accidentally present at the crime scene), their spouses/intimate partners and pets. Given the extent of violence to which the victims are exposed, the term "family breakers" has been introduced by some authors to describe these killers (2, 4, 23, 24).

Another form of family DD occurs when a parent kills a grown-up child who suffers from a significant physical or mental disability, because he/she no longer feels capable of providing the child with the necessary care due to the old age, illness or financial problems. Such a murder has an "altruistic" character and displays some similarities with DD of elderly married couples (24).

Extra-familial homicide-suicide

Extra-familial H-S includes perpetrators and victims who are not bound in common family life. This type of H-S usually refers to a dissatisfied employee or former employee as a perpetrator who is seeking revenge for actual or perceived insults, damage or abuse at the workplace. This extra-familial H-S is also called "rival" H-S (1, 2). Failure to advance in career, get promotion or gain financial benefits can be motivational factors that reach the level of obsessive delusion that finally results in a cathartic act of killing one or more humans, and then suicide (2, 4).

H-S also includes cases of multiple murders among peers, for example in the US where media extensively reported on the numerous cases of shooting executed by dissatisfied high school...
students. Namely, as a rule, the perpetrators of such acts returned to their previous school (after completing their education or being expelled from school), sometimes with lists of potential victims, and used their firearms to kill a large number of victims, including accidental passers-by and observers (so-called "secondary targets"). However, the perpetrator most often committed suicide as a result of the police action, i.e. his/her decision to die in the "flame of glory" (2), and not because it was a direct suicide act. This type of H-S belongs to the "pseudo commando" type of killing. "Pseudo commando" H-S are divided into subtypes of "non-selective" and "pseudo-community". In a non-selective (random) type, a perpetrator kills as many people as possible, and the only common feature among the victims is the proximity of the killer. In a sub-group of "pseudo-community," a perpetrator targets a particular group of people (for example, the murder of 14 female engineering students at the Montreal Polytechnic School in December 1989, committed by a man in the fight against feminism or terrorist action such as bombing attacks - "kamikaze" attacks, where the death of a perpetrator occurs as a consequence of an explosive device or activity used to kill a large number of other people) (10).

Characteristics of homicide-suicide

Although it has been established that there are some characteristic features of perpetrators, victims and methods of murder and suicide, it has also been observed that there are variations between different social communities and countries. Recent studies have shown a certain similarity in the characteristics of perpetrators, victims and methods of murder and suicide in H-S in general, as well as in DD among various ethnic, racial and cultural groups (25, 26). For example, the most common form of H-S and DD in the United States includes a white male who is separated from their marital or extra-marital intimate partner and who kill them by firearms. On the other hand, killing children by mothers followed by suicide is more frequent in England (7, 11). The use of firearms (shooting) is the most common form of murder in H-S and DD cases not only in the United States, but also in some parts of England (7, 11). The percentage of female perpetrators ranges from 3 to 8 % according to the results of various studies (5-8), whereby this percentage increases in cases of H-S and DD involving children as family members. The H-S and DD perpetrators are generally older than murderers who do not commit suicide and they usually belong to the age group between 40 and 49. When it comes to DD, there is usually a close intimate and personal relationship between a perpetrator and a victim, while the cases where unknown people are killed by a perpetrator who afterwards commits suicide are very rare (5-8, 12). DD is somehow dynamic in the sense that the case scenarios change over time within a single community (12, 27). This has been established by a study conducted in the US over a ten-year period in a group of DD committed by white people in urban areas in relation to perpetrators of black race in rural areas (6, 7). Although DD is more likely to occur in population categories of lower socioeconomic status, the results of several studies have shown that DD represents a phenomenon which is more common for the middle class. The place where DD happens is in most cases the bedroom of a family house (5-8, 11). The methods used for murder and suicide vary depending on the availability of firearms, and since they are widely available to citizens in the US, there is a high rate of DD caused by firearms (7). The very act of committing this crime has also shown variations over time, so the results of earlier studies conducted in England indicate a higher incidence of carbon monoxide poisoning (7, 9) compared to the results of recent studies. This can be explained by the fact that households ceased to use gas. Some studies have shown that DD can involve the use of a large number of violent methods and this point to a greater degree of frustration and aggression of perpetrators (11, 12).

The role of forensic medicine in identifying homicide-suicide

The analysis and research of H-S, and in particular DD, is an extremely difficult and delicate medico legal challenge, especially in the cases of murder and suicide of intimate partners and family members. Since both the perpetrator and the victim are dead, which limits the ability to obtain timely, objective and relevant information (28). A comparative analysis of the results of psychological autopsies and forensic autopsies of H-S perpetrators and victims, as well as the data obtained from relatives and other people who are close to murderers and victims, can be useful for examining the circumstances that preceded the fatal act, but this information is usually insufficient and most often not recorded in the files of official statistical database, autopsy registers and mortuaries (2, 4, 28).

Forensic medicine is the Medico legal expertise, which involves arriving at the crime scene, informing with the circumstances of the case, the autopsy of victims and perpetrators, and then a comparative analysis of all the relevant data obtained and collected during the investigation (autopsy report, traceological analysis, physical evidence, criminal-technical data, laboratory analysis, etc.), provides the material evidence and the key proof in clarifying murder cases in general, especially H-S cases.

The basic duty of forensic medicine is not only to determine the nature, origin and cause of the death of the people on whom autopsy was performed, but also to identify other circumstances that preceded the terrible act, the dynamics of the event, the type, number and location of the injury, the order in which injuries were inflicted, the time of death, etc. which all lead to a professional conclusion regarding the roles of the actors in the fatal act (29). Namely, it is often difficult to identify the victim of the murder and the perpetrator of the murder and suicide when two lifeless bodies are found in the same location. Such situations are encountered in cross-killing, two natural deaths, the natural death of one person and the suicide of another, simultaneous suicides, and so on.
Conclusion

H-S and DD represent unusual events that require careful investigation by the competent authorities, and medico legal expertise is one of the key links in the chain of actions that are being pursued for that purpose. The reason for such a fundamental and multidisciplinary analysis of each of these cases lies in the fact that it is possible to mistake double or multiple killings for H-S, whether it is a DD, triadic death, or mass murders. In this way, forensic medicine, as an academic discipline dealing with ante-mortem and post-mortem data concerning both perpetrators and victims of murder, has a significant role in predicting such cases and creating preventive measures in terms of identifying, suppressing and preventing such a socially dangerous phenomenon, especially in the domain of marital/partner and family H-S.

References

SUDSKO - MEDICINSKE IMPLIKACIJE UBISTVA PRAĆENOG
SAMOUBISTVOM

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Ubistvo praćeno samoubistvom, u literaturi poznatije kao ubistvo-samoubistvo (U-S) predstavlja poseban entitet u okviru fenomena ubistva koji podrazumeva samoubistvo izvršio-
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U-S i podrazumeva samoubistvo izvršioca nakon ubistva jedne žrtve. Izvršilac je najčešće mu-
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ili intimnu partnerku zbog rastavljenosti ili otuđenosti. U stručnoj literaturi su identifikovane
različite kategorije U-S i DS koje uključuju ubistvo žrtve praćeno samoubistvom izvršioca u
sklopu bračnog nasilja podstaknutog ljubomorom ili zabrinutošću zbog starosti i/ili lošeg zdra-
vstvenog stanja, a nešto ređe u sklopu porodičnog nasilja ili kada roditelj lišava života dete a
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juju jednu, već veći broj žrtava. Samim tim, zbog broja žrtava, sa sudsko medicinskog aspe-
ta, ovakvi slučajevi ne spadaju u kategoriju DS.


Ključne reči: Ubistvo, Samoubistvo, Dijadična smrt, Sudska medicina