

Kicking and Trampling to Death

Pathological Features, Biomechanical Mechanisms, and Aspects of Victims and Perpetrators

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SUMMARY

Kicking and trampling to death is an entity of violence that increased considerably in the northeastern parts of Germany over the final years of the last century. Most of the injuries are located at the head followed by injuries of inner organs and thoracic bones. More than 50% of victims of kicking and trampling deaths have fractures of the calvaria, skull base, or facial bones. In such cases, subdural and subarachnoidal bleeding, brain contusion, and intracerebral hemorrhage is a frequent cause of death. The frequency of injuries deriving from defensive action is associated with the blood alcohol content (BAC) of the victim. These kinds of injuries are rare when the BAC of the victim is higher than 200 mg/dL, and injuries deriving from defensive action can be found in approximately 52% of the cases where the BAC is lower than 200 mg/dL. The injury pattern deriving from kicking and trampling is highly

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dependent on the location of the impact. Between the skin of the head and the skull there is only little adipose tissue so that the injury pattern often points out to the used underlying mechanism of violence. On occasion, a sole imprint pattern deriving from the shoe used as a “weapon” can be identified, whereas kicking and trampling to the abdomen can occur without leaving any characteristic morphological signs. Special computerized classification systems may enable the identification of a particular shoe by analyzing sole imprints on the victim’s skin. Kicking as well as punching can be performed with the same energy (350–1200) without dependence on gender. Even kicking with bare feet can lead to fatal injuries. When the head of a victim is kicked, the head can experience a maximum acceleration comparable to that in a frontal car crash at 50 km/h. Many of the victims and perpetrators belong to lower social classes of society. Many of the victims have been repeatedly maltreated in the past and have been used to an environment where violence occurred frequently. In most cases, the offender acts alone. Perpetrators acting in a group are generally younger than offenders acting alone. In many cases with elder offenders, the existence of an intimate relationship between victim and perpetrator can be established. Group dynamics especially can have negative influence on social behavior patterns in these fatalities. In former East Germany, the frequency of killing by kicking and trampling has increased with the frequency of unemployment in specific regions.

Key Words: Kicking; trampling; blunt-force injuries; injury pattern; victims; perpetrators.

1. INTRODUCTION

In a considerable number of homicide cases, it is difficult to interpret underlying biomechanical mechanisms of blunt force because of the variety of injury patterns. On the one hand, injuries can be so unambiguous that the underlying killing mechanisms of blunt force and the cause of death are obvious. On the other hand, there may be different simultaneous signs of violence that make it hard to determine the exact chronology and significance of injuries and to identify the lethal injury. Detailed analyses of the underlying blunt force mechanisms and the resulting cause of death as well as professional experience are the most important basics for a profound interpretation and reconstruction of such cases. It is necessary to examine the victim and the crime scene as well as the perpetrator, if possible (1).

If the history of the case and the circumstances are unknown at the time of autopsy, they have to be elucidated by a thorough analysis of the victim’s injury pattern and the crime scene so that a profile of the perpetrator can be

created. One should keep in mind that in some instances the kind of violence and injury pattern can be the same in homicides and suicides, respectively.

Since the 1900s, we could observe an increase of an unkind and extremely brutal type of external violence leading to death—kicking and trampling. In Germany, this kind of violence as cause of death was described in some case reports as early as in the 1930s. Now the large number of cases makes it possible to present an overview of frequent locations of injuries, injury patterns, causes of death, biomechanical mechanisms, epidemiological aspects as well as scene circumstances, and aspects of victims and perpetrators.

2. PATHOLOGICAL FEATURES

2.1. General Aspects

In 1933, Schrader described a case of “kicking to death” (2), which is presented here because of its relevance to the present. The case involved a 25-year-old man who was attacked by political enemies on his way home. Twenty-four hours after being taken to the hospital, the man died from the severe injuries he had sustained. The autopsy revealed the following injuries:

. . . numerous lacerations at the back of the head, the bone was uninjured. . . . The findings of considerable importance were detected at the skull. On the right side comminuted fractures of the parietal and temporal bone as well as the lateral parts of the frontal bone were found. Some fracture lines showed a particular oval-shaped arched pattern of 6 to 10 cm in diameter. Other fracture lines reached from this oval-shaped area to the frontal bone. At the base of the skull, fractures of the orbital roof, ethmoidal and right side of the sphenoidal bone were detected. Outcome of autopsy: The injury of the head was caused by kicking with the foot. The oval-shaped fracture lines possibly show the contour of a heel

A witness as well as one of the perpetrators declared: “. . . was beaten with a stick and broke down when he tried to run away and received several hits against the back of his head. One of the perpetrators kicked the side of his head when he was lying on the floor.” The quoted findings were described in 1933 and fit exactly the skull fracture shown in Fig. 1, which was seen by the authors in a case of kicking to death that took place in November 2000.

Over the last few decades, the frequency of kicking and trampling to death has significantly increased in Germany (3,4). The high number of such cases in the northeastern parts of Germany that we as well as others from different Institutes of Legal Medicine in Germany have studied (Table 1) makes it possible to give an overview of the characteristic findings in such cases.

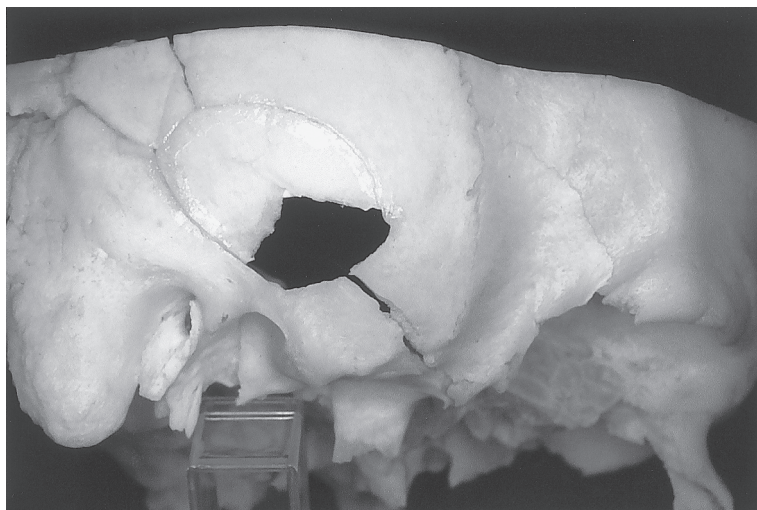


Fig. 1. Arched fracture lines on the skull as a result of kicking.

Because most of the victims were in a state of inebriation that alone could have been fatal, only such cases were included where injuries resulting from kicking and trampling were undoubtedly the cause of death (3–7).

In all studies, most of the victims were maltreated by kicking and other kinds of violence. In 4.5% (Rostock, former East Germany) and in 17.1% (Hamburg, former West Germany), respectively, sole signs of kicking were present. In some of these cases, the victim fell down after an initial punch and was then kicked by the perpetrator while lying on the ground. The majority of the victims were also punched multiple times or received blows with different kinds of objects. Strangulation and asphyxia caused by the perpetrator sitting or kneeling on the victim's thorax, stab wounds, and/or cuts were rare in these cases (3,4,8–10).

2.2. Location of Injuries

Out of 127 victims of kicking and trampling deaths who were autopsied in Hamburg and Greifswald (former East Germany), 81 (64%)—as well as 11 (50%) out of 22 victims examined in Rostock—showed fractures of the calvaria, skull base, or facial bones. In Hamburg, 63% (22 out of 35), in Greifswald 47% (43 out of 92), and in Rostock 55% (12 out of 22) of the maltreated individuals had injuries of inner organs (including diaphragm and vena cava). Fractures of the thoracic bones were found in 54% of all cases analyzed (Hamburg 54%, Greifswald 53%, and Rostock 59%).

Table 1

Examined Cases of Kicking and Trampling to Death in Northeastern Parts of Germany That Served as the Database for the Current Review

Institute of Legal Medicine	Investigation period	Number of cases studied
Hamburg (4,5)	1982–1995	35
Greifswald (4,5,8)	1982–2000	92
Berlin (7,26)	1980–1997	152
Rostock (3)	1958–2000	143

Note. Reference numbers are given in parentheses.

Trauma to the neck, including fractures of the hyoid bone, laryngeal skeleton, and vertebra, was found in one-third of the cases. Lesions of the genital region could be established in two cases. The distribution of injuries is shown in Fig. 2.

Missliwetz and Denk analyzed the autopsy protocols of the Institute of Forensic Medicine in Vienna, Austria over a 10-year period during which 5500 autopsies were carried out. Seventy-six individuals died after being maltreated by punching and/or kicking (10); 60.5% of the victims showed head injuries including subdural bleeding and arteriorrhhexis; injuries of thoracic and abdominal organs were registered in 46% of the cases.

2.3. Injury Patterns

2.3.1. Injuries to the Head

Injury patterns depend on the location and force applied by kicking or punching (1,11,12). The fact that the head is relatively small when compared to the body makes it impossible to believe the statement of perpetrators at court that they just kicked a person's body without looking where they hit it. One can consider the head as a preferred "target of choice." Apart from abrasions and lacerations of the skin, most of the head injuries were fractures of the facial bones as well as of the upper and lower jaw bones. Complications following head trauma were epidural and subdural hemorrhage, subarachnoid bleeding, brain contusion, and/or cerebral hemorrhage (Table 2).

Very often, injury patterns of the head can be the conclusive proof of the applied type of violence. Because there is only little fatty tissue and muscles between the skin of the head and the skull, blunt-force trauma often leads to characteristic abrasions of the skin and lacerations (1). After a kick or stomp with a shoe, the skin and subcutis may show contusions that mirror the pattern

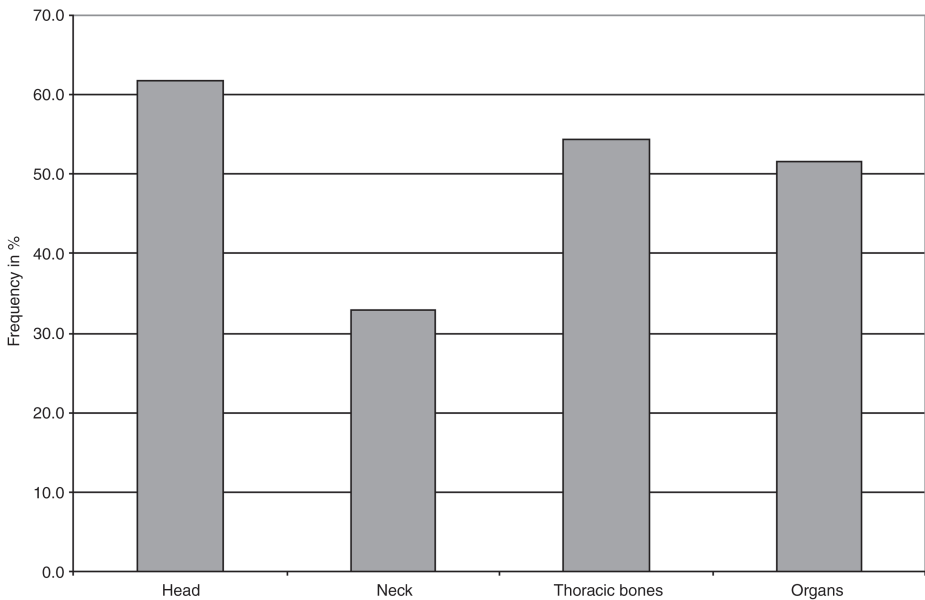


Fig. 2. Distribution of injuries (data based on studies in Hamburg, Greifswald and Rostock, Germany, $n = 149$).

of the sole of the shoe as well as the contour of the heel (Figs. 3–5). The mechanism that leads to this injury pattern is the same as is known to result from impacts with a baseball bat or a belt (13,14).

2.3.2. *Injuries to the Neck*

Neck injuries can be seen in up to 40.9% of cases (Table 3) and can give important information about the applied violence. Nevertheless, one should not confuse these lesions with those found in homicidal asphyxia and suicidal or accidental hanging.

Fractures of the throat skeleton (detected in 19 victims [29%] of the cases investigated in Greifswald) were more frequent in victims of kicking and trampling to death than in victims of ligature strangulation in homicidal asphyxia, where this kind of injury was detected in 12.5% of the cases (15) but less than in victims of suicidal or accidental hanging. In the latter, skeleton fractures were seen by Betz and Eisenmenger in 73 out of 109 autopsy cases (67%) (16).

In some cases, injury patterns of the thorax or neck can indicate the type of weapon or in single cases even the kind of shoe used to maltreat the victim. The causative mechanism of the injury pattern can be easily explained by the

Table 2
*Injuries of the Skull and Intracranial Findings
in Victims Killed by Kicking, Trampling, and Punching*

	Hamburg 1982–1995	Greifswald 1996–2000	Berlin 1980–1997	Rostock 1982–1995	Rostock (kick + punch) 1958–2000
Number of cases examined	35	92	152	22	136
Injuries of the skull					
Orbita	2 (5.7%)	14 (15.2%)	⊗	3 (13.6%)	14 (10.3%)
Nasal bone	4 (11.4%)	23 (25.0%)	39 (25.7%)	5 (22.7%)	29 (21.3%)
Cheek bone	3 (8.6%)	11 (12.0%)	⊗	3 (13.6%)	19 (14.0%)
Maxilla	8 (22.9%)	9 (9.8%)	14 (9.2%)	2 (9.1%)	11 (8.1%)
Mandible	7 (20.0%)	8 (8.7%)	14 (9.2%)	2 (9.1%)	13 (9.6%)
Calvaria	5 (14.3%)	8 (8.7%)	⊗	3 (13.6%)	43 (31.6%)
Base of the skull	6 (17.1%)	10 (10.9%)	⊗	6 (27.3%)	51 (37.5%)
Intracranial findings					
Epidural hemorrhage	13 (37.1%)	21 (22.8%)	⊗	*	13 (9.6%)
Subdural hemorrhage	14 (40.0%)	27 (29.3%)	40 (28.3%)	*	63 (46.7%)
Subarachnoidal bleeding		4 (4.3%)	27 (17.8%)	*	69 (51.1%)
Contusion, cerebral hemorrhage	8 (22.9%)	17 (18.5%)	33 (21.7%)	10 (45.5%)	73 (54.1%)

Note. ⊗ = these data cannot be compared with those of the other studies; Taymoorian (7) described multiple fractures of facial bones in 10 cases (6.6%). * = 50% of the cases analyzed by Brandt (3) showed epidural and/or subdural hemorrhage.



Fig. 3. Lacerations of the skin. Injury pattern mirroring a part of the sole of a shoe.

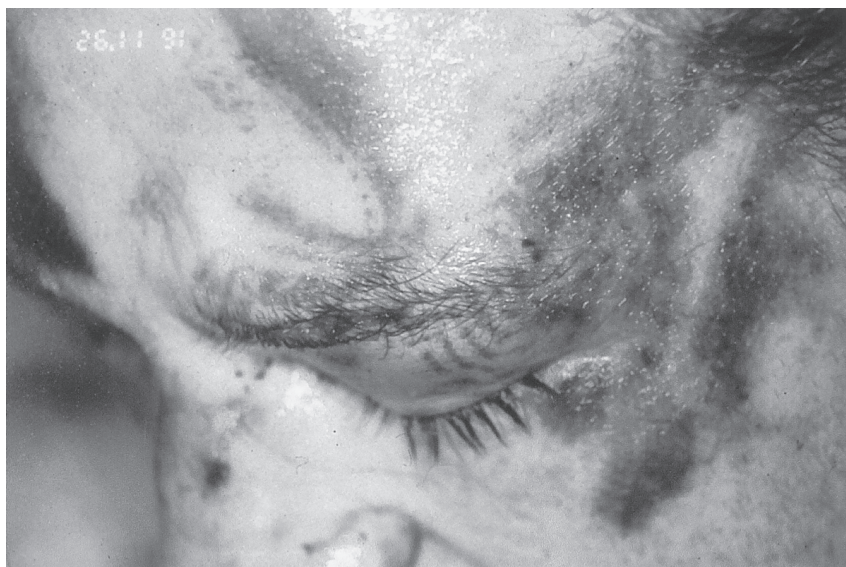


Fig. 4. Laceration of the left eyebrow caused by a kick with a shoe and hematoma on the left part of the forehead outlining the heel of a shoe.



Fig. 5. Pattern of a shoe on the forehead of a victim.

following case (Figs. 6 and 7): the imprint of the sole of a shoe is visible as a negative mark on the skin. The prominent parts of the sole are seen as pale areas that are surrounded by sharp-edged abrasions and bleedings of the skin. Blood has been forced out of blood vessels and extravasated to neighboring tissue. According to Bodziak, the injury pattern depends on the power of the kick, a fact that should be kept in mind when interpreting the imprint pattern. In case of very powerful kicking, confluence of bleedings can occur so that sole prints are not recognizable (17).

2.3.3. Injuries to the Thorax and Inner Organs

Dependent on an individual's age, the thoracic organs are normally well protected by the ribs. With the increase of age, ribs are more vulnerable because of the decrease of elasticity and possible manifestation of osteoporosis. In Greifswald, only 25% of the victims younger than 21 years who were killed by kicking and/or trampling had fractures of ribs or sternum compared to 46.9% in individuals who were between 21 and 40 years of age and 58.9% in the age group between 41 and 60 years.

Table 3
Injuries to the Neck in Victims Killed by Kicking, Trampling, and Punching

	Hamburg 1982–1995	Greifswald 1996–2000	Berlin 1980–1997	Rostock 1982–1995	Rostock (kick + punch) 1958–2000
Number of cases examined	35	92	152	22	136
Hyoid bone	9 (25.7%)	13 (14.1%)	⊗	2 (9.1%)	16 (11.8%)
Laryngeal cartilage/bone	7 (20.0%)	14 (15.2%)	21 (13.8%)	5 (22.7%)	24 (17.7%)
Fracture of the cervical spine	0	2 (2.2%)	6 (3.9%)	3 (13.6%)	4 (3.0%)
Only soft tissue injuries	2 (5.7%)	8 (8.7%)	⊗	2 (9.1%)	46 (33.8%)
At least one of the injuries mentioned above	13 (37.1%)	27 (29.3%)	⊗	9 (40.9%)	⊗

Note. ⊗ = these data cannot be compared with those of the other studies.



Fig. 6. Injury pattern (sole imprint) on the neck and upper thorax.



Fig. 7. The “weapon”: a sneaker (same case as Fig. 6).

Kicking and trampling led to multiple rib fractures in one-third of the cases examined in Greifswald. Fractures of ribs in combination with fractures of the sternum were seen in 8.7%. Taking a look at the injuries of inner organs, it is not astonishing that more than 25% of the victims showed ruptures of the liver. Because of its location, this organ is very easily injured. Kicking against the abdomen and especially trampling on a victim who is lying on the ground leads to severe injuries of inner organs (Table 4). In the case of blunt force against the abdomen, characteristic signs can be weak or totally missing (Fig. 8). The external lack of signs of a preceding trauma does not have to lead to the conclusion that there are no severe injuries of inner organs (Fig. 9).

Findings from the external examination of the body and autopsy findings have to be documented in detail starting with the description of the victim's clothing. Multiple layers of clothing as well as thick adipose tissue and muscles can function as a crumple zone so that kicking and/or trampling can be without any external morphological correlate (12), and therefore the clothing may be the only objects to give the death investigator important informations. To document a sole imprint to a scale of 1:1, it can easily be drawn on a transparent film. Another simple method is the photo documentation with a scale next to the lesion. For a more specialized three-dimensional documentation of the injury pattern, serial photographs must be taken of all dimensions with a constant distance between camera and object. The same measurements must be taken of the weapon (e.g., shoe) used. The photographs of injury pattern and weapon can be analyzed by a computer program and matching figures can be established (18).

In several countries, computerized footwear classification systems are available. In Switzerland, this system is especially designed for partial footwear impressions (19–22). Though these systems were originally developed for crime scene footwear classification, they may help to identify shoes worn by the perpetrator while kicking a victim by describing the sole pattern using special classification codes.

In some cases, overlapping injury patterns caused by kicking can occur. On the one hand, an imprint of the weapon is visible, and on the other hand, the structure of the clothing can be mirrored. Not only injuries of the skin and soft tissue, but also (imprint) fractures of the skull can point to the type of weapon used by the perpetrator.

2.3.4. Injuries Caused by Defensive Action

Less than 50% of the victims examined in Greifswald showed injuries caused by defensive action like hematomas at the ulnar region of the forearms

Table 4
Frequency of Injuries to Inner Organs in Victims Killed by Kicking, Trampling, and Punching

	Hamburg 1982–1995	Greifswald 1996–2000	Berlin 1980–1997	Rostock 1982–1995	Rostock (kick + punch) 1958–2000
Number of cases examined	35	92	152	22	136
Injuries of the lungs	5 (14.3%)	15 (16.3%)	21 (13.8%)	6 (27.3%)	20 (14.7%)
Rupture of heart	5 (14.3%)	3 (3.3%)	11 (7.2%)	1 (4.5%)	9 (6.6%)
Rupture of diaphragm	0	1 (1.1%)	⊗	2 (9.1%)	8 (5.9%)
Injury of vena cava	0	0	⊗	1 (4.5%)	⊗
Rupture of liver	9 (25.7%)	17 (18.5%)	30 (19.7%)	3 (13.6%)	16 (11.8%)
Rupture of spleen	6 (17.1%)	7 (7.6%)	7 (4.6%)	1 (4.5%)	5 (3.7%)
Contusion/rupture of kidney	7 (20.0%)	6 (6.5%)	⊗	6 (27.3%)	16 (11.8%)
Rupture of intestine/bowl	3 (8.6%)	3 (3.3%)	⊗	3 (13.6%)	11 (8.1%)
Injuries of mesentery	6 (17.1%)	15 (16.3%)	⊗	6 (27.3%)	21 (15.4%)

Note. ⊗ = these data cannot be compared with those of the other studies.



Fig. 8. Without the knowledge of the details from the witness report, it would have been hard to realize that the small abrasions of the skin were a result of jumping on the victim.

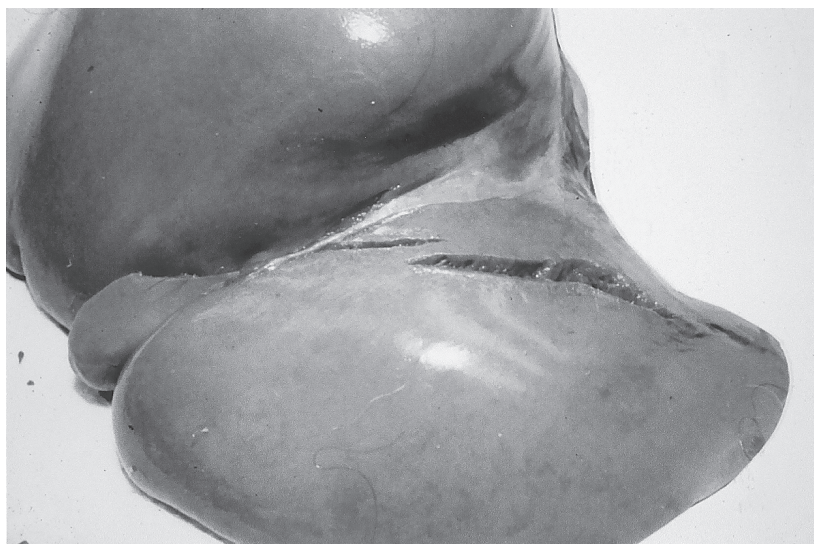


Fig. 9. Rupture of the liver caused by jumping on the victim's abdomen (same case as Fig. 8).

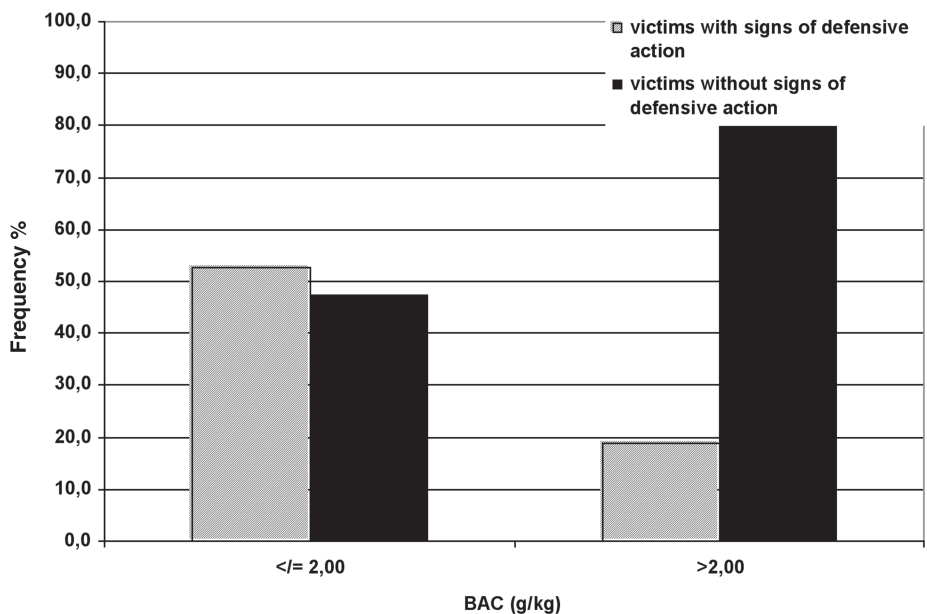


Fig. 10. Frequency of injuries deriving from defensive action in dependence on blood alcohol content (BAC).

and hematomas of the upper arms. It is noticeable that only 18% of the victims with a blood alcohol content (BAC) >200 mg/dL showed such injuries, whereas in 52% of the victims with a BAC <200 mg/dL injuries deriving from defensive action were present (Fig. 10).

2.4. Causes of Death

As a consequence of the injuries sustained, 42.5% of the victims of kicking and trampling to death examined in Greifswald and Hamburg died of severe external or internal blood loss, in some cases in combination with blood aspiration. Sole blood aspiration as the cause of death was diagnosed in 12.6% of the victims, most of them with trauma to the lungs or skull base fractures.

Almost one-third of the victims were transferred to a hospital before they died. Victims with a survival time of several days showed typical late complications like pneumonia and/or malignant cerebral edema.

In contrast to the analysis of Hiss et al., who found fatal fat embolisms in 60.4% of victims who had been beaten to death (23), fat embolisms contributing to fatal outcome was detected neither by Brandt or Taymoorian (3,7) nor in our series (6).

3. *BIOMECHANICAL MECHANISMS*

In cases of tangential violence, the findings depend on the tissue layers above and underneath the skin. The weapon (e.g., shoe) as well as the clothing can cause scale-like excoriations. The shreds of the epidermis can show the direction of violence (24). Bleeding of subcutaneous wounds can occur when the dermis is sheared off the subcutaneous fatty tissue. Depending on the direction of violence, shearing of the skin off the subcutaneous tissue may be seen in different ways, and different wrinkles of the skin may develop if the same area was kicked or punched repeatedly.

In 1987, Böhm and Schmidt (25) analyzed the biomechanical mechanism of wrinkling by pressing an acrylic sole against skin that was marked with a set pattern. Because of the transparency of the sole, it was demonstrable that the set pattern was contorted in different ways. Kicking the gluteal region from the side caused a clearly recognizable shift of the set pattern, whereas it was not visible when kicking from above.

In cases of kicking in combination with sharp-force violence, it is relatively easy to relate the injury pattern to the type of violence, whereas this can be hard and sometimes impossible when kicking is combined with punching and no sole imprint pattern is visible.

In experimental studies, Böhm and Schmidt showed that one can achieve similar power by kicking and punching, respectively (25). They recorded the energy of women and men kicking and punching a "punch-ball" that was connected to a special registration unit. The energy of the most powerful punching by women was between 350 and 550 N, and when men punched, energy between 500 and 850 N was registered. The women reached 500–750 N when kicking. Men kicking the "punch-ball" reached energy between 750 and 1200 N. The results of this experiment were summarized by Böhm and Schmidt in one sentence: "The lowest registered power by kicking and the highest power by punching are overlapping without dependence on gender." It is suggested that these measured values are surpassed when the offenders are in a state of excitement so that involuntary energy is set free (25).

Glißmann (8) used a special registration unit to analyze the acceleration of a dummy's head that was kicked (the dummy was lying on the ground). The maximum acceleration of the head was 103 Gy, which is comparable to the acceleration of the head in a frontal car crash at 50 km/h. These findings and the study of Taymoorian (7) in which a case of kicking to death bare-footed is described confirm the assumption that kicking, without dependence on the shoe worn by the perpetrator or even when bare-footed, as well as punching, can easily lead to fatal injuries.

4. ASPECTS OF VICTIMS AND PERPETRATORS

4.1. Victims

Most of the victims (68–80%) were male with an average age of 43 years. The female victims were 2–5 years older (3,6,7). In the cases examined in Greifswald and Rostock, all victims were Germans, whereas 11% of the victims investigated in Berlin came from other countries.

Half of the victims examined in Greifswald and Hamburg knew their perpetrator prior to the offense. They were integrated in a circle of acquaintances where most of the individuals had severe alcohol problems. Some of them had been in a relationship with each other. These circumstances explain why most of the individuals were maltreated in the apartments of either the victims or the offenders (6,9,26). In most cases, the involved persons, victims as well as perpetrators, were under the influence of alcohol when starting a trivial discussion that led to a severe struggle that ended fatally.

In blood samples of the victims, an alcohol content of more than 200 mg/dL was regularly found (3,6,26) and registered in 34.8% of the victims examined in Greifswald; in 9% of the cases, the victims had a BAC below 200 mg/dL but a urine alcohol content (UAC) of more than 200 mg/dL.

Many of the victims belonged to the so-called lower social class. They were unemployed and depended on social welfare. They often originated from broken homes where parents were unemployed alcoholics. Many of them had been repeatedly maltreated in the past and could be considered to be used to an environment where violence occurred frequently.

The advanced age of the victims, when compared to offenders, and the weakening of the body by alcohol abuse for many years as well as the acute inebriation give reasons for their vulnerability.

4.2. Perpetrators

In most cases, the offender acted alone. According to our own studies, the average age of solitary perpetrators is about 30 years and perpetrators who acted in a group are about 22 years old. In many cases with elder offenders, there existed an intimate relationship between victim and perpetrator and both lived under plain or even primitive conditions (5,26).

The difference in age between solitary and in-group acting offenders points out that group dynamics can have negative influence on social behavior patterns. On the one hand, the group can encourage a member, e.g., to kick or trample, and on the other hand a group member may act brutal because he or she does not want to be excluded from the group (5).

In Greifswald and Hamburg, women acted only in groups and never solitarily (4,6), whereas 3.1% of single offenders in Rostock and 9.7% (15 out of 155) of those in Berlin were women (3,26). Strauch et al. reported that 14 of 15 female single offenders had cultivated a friendship or deeper relationship with their victims in the past (26).

Many of the offenders had only a poor education and no vocational training, were unemployed, and commonly abused alcohol. In many cases, the perpetrators pointed out during police interrogation that they had been severely drunk at the time of the offense and were unable to control their action. They testified in court their consumption of alcohol during the respective day. According to those statements, they must have had BACs of more than 200 mg/dL at the time of the fight. The inebriation may be the main reason why the perpetrators did not use any weapons. Kicking and punching the victim points toward a spontaneous reaction following a prior verbal argument and "weapons" like fists and feet are always available.

In comparison with the cases before 1996 where the main reason for the fight was trivial, it was remarkable that from 1996 to 2000 offenders who acted in groups in Greifswald and environment admitted at court that they maltreated the victim "just for fun" or because "[they] were bored and didn't know what else to do" or that "[they] thought homeless live off other people, so they deserve this treatment." The behavioral pattern of the perpetrators is illustrated by the following case report: in summer 2000, a homeless alcoholic came to a village (in former East Germany) close to the Baltic Sea and took a rest behind a church when he was seen by a 24-year-old man who was known to be a Nazi and some juveniles. They hit and kicked the homeless man without prior warning and for no apparent reason and then went to a youth club. There, one of the juveniles bragged about this action and demonstrated blood of the victim on his shoes. A few hours later, after having some beer, they came back and saw that the maltreated man was still alive, smoking a cigarette. Immediately, they started kicking him again, so that the victim didn't even have the time to shout for help. Later, one of the perpetrators jumped on his thorax. After some time, they left and went home without thinking about the possibility of fatal injuries. The victim died the same night of the severe injuries he had sustained. He was found the next morning. After a short period of investigation the perpetrators were caught. The one known to be a Nazi confessed that he kicked and trampled the man because "homeless people do not fit into our society." He was already known to the authorities from multiple prior criminal offenses and previous convictions. He lived on social welfare in a municipal housing unit. His criminal career dated back 7 years and

consisted of nine cases including theft, receiving stolen goods, extortion under threat of force, and grievous bodily harm (kicking and punching someone else's face).

5. EPIDEMIOLOGY

Concerning killing mechanisms, one can see regional special features. In the United States, killing by shooting and in Germany and Austria killing by blunt force occur most frequently (27–29). In the former East Germany, killing by kicking occurs more frequently in regions with a high percentage of unemployment (3). The reason may be the offenders' inability to socially integrate, their alcohol abuse, and their dissatisfaction with their private conditions. However, recent systematic studies are missing in the literature.

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