

## CLINICAL PARTICULARITIES OF MECHANICAL TRAUMA PATHOLOGY PRODUCED BY INTERPERSONAL AGGRESSION

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**Keywords:**  
interpersonal  
aggression, mechanical  
trauma, traumatic  
injuries

**Abstract:** This research is circumscribed to the field of interpersonal violence which became “a social disease” of our contemporary society, a significant burden because of the costs of the health and social consequences, one of the leading causes of disability in the active population groups and the main cause of anxiety and insecurity in the community and society. Purpose: The research aims at highlighting the clinical particularities of mechanical trauma pathology produced by hetero-aggression. Methodology: The study was conducted through a longitudinal survey with the full research of the study material. The study material is represented by the forensic documents for the trauma victims (aggressions, road accidents, genital examination, work capacity, insurance and psychiatric expertises). Data were collected from forensic documentation of the Forensic Service Department of Sibiu County. Data collection period: 01.01.2004-31.03.2013. Conclusions: In Sibiu County, the dynamic assessment of forensic work for the persons living in the period 2003-2012 shows a share of aggression around 70 %, which is almost 10 percent higher than the national average communicated by the annual institutional reports. For the entire study period, the number of examinations in males was double, confirming that male gender is a “demographic risk factor”. Patients residing in urban areas have a slightly higher accessibility to medical services (56 %) than rural residents. Two thirds of the traumatic mechanical casuistry post-aggression belongs to the age group between 20-49 years old, which underlines the serious social impact of interpersonal violence in the active social groups. A quarter of the examinations of the living people were victims of aggression within the family. In the case of minors, most traumatic injuries were produced in the context of domestic violence, emphasizing the role of the physician in identifying the facts of abuse. Most traumatic injuries were produced by striking with a blunt object (70 %), followed by hitting to a blunt surface or falls (15%). Traumatic injuries were primarily located at head level (24%), face (28 %) and limbs (26%).

**Cuvinte cheie:**  
heteroagresiune,  
traumatism mecanic,  
leziuni traumatice

**Rezumat:** Cercetarea de față se circumscrie fenomenului violenței interpersonale, devenit în societatea noastră “o maladie socială”, o importantă povară prin costurile medicale și sociale ale consecințelor sale, una dintre principalele cauze de dizabilități la nivelul grupelor de populație active, dar și principala cauză de neliniște și insecuritate la nivel de comunitate și societate. Scopul studiului: Cercetarea își propune să evidențieze particularităților clinice ale patologiei traumatice mecanice produse prin heteroagresiune la persoanele în viață în județul Sibiu. Metodologie: Studiul s-a realizat printr-o anchetă longitudinală bispectivă, cu cercetarea integrală a materialului de studiu. Materialul de studiu este reprezentat de lucrările medico-legale adresate victimelor traumatice în viață (agresiuni, examinările pentru accidente rutiere, stările genitale, examinarea capacității de muncă, expertiza asigurărilor și expertiza psihiatrică). Datele au fost culese din documentele medico-legale ale Serviciului Județean de Medicină Legală Sibiu. Perioada de culegere a datelor: 01.01.2004-31.03.2013. Concluzii: În județul Sibiu, evaluarea dinamică a activității medico-legale adresate persoanelor în viață în perioada 2003-2012 evidențiază o pondere a agresiunilor de aproximativ 70%, valoare superioară cu aproape 10 procente mediei naționale comunicate în rapoartele instituționale anuale. Pentru întregul interval de studiu, numărul examinărilor adresate sexului masculin a fost dublu, confirmând faptul că sexul masculin reprezintă „un factor demografic de risc”. Pacienții proveniți din mediul urban prezintă o adresabilitate ușor mai ridicată către serviciile medicale (56%) față de rezidenții din mediul rural. Două treimi din cazistica traumatică mecanică postagresiune aparține intervalului de vârstă 20-49 ani, fapt care subliniază impactul social grav al violenței interpersonale la nivelul grupelor sociale active. Un sfert din examinările pe persoane în viață s-au adresat victimelor agresiunilor intrafamiliale. În cazul minorilor, majoritatea leziunilor traumatice au fost produse în contextul violenței domestice, aspect care subliniază rolul medicului în identificarea faptelor de abuz. Majoritatea leziunilor traumatice au fost produse prin lovirea cu corp dur (70%), urmată de lovirea de corp dur/cădere (15%). Leziunile traumatice au fost localizate în principal la nivelul capului (24%), al feței (28%) și al membrelor (26%).

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**INTRODUCTION**

Aggression and violence are manifestations of behaviour that accompanied the historical evolution of human societies. For this reason, the famous French philosopher and sociologist Durkheim [cited 1] considers violent behaviour as a “human parameter”, inextricably linked to biological and social functioning of the individual. Durkheim [ibid] considers violent behaviour as a feature of collective life, stating that “if crime is missing, it is impossible for a society to exist”. The presence of violence in contemporary society has become more massive, however, both in terms of frequency of aggressive acts and the severity of their consequences, leading to a state of anxiety and insecurity in the community and society.(3) Medical and social consequences of violence translate into enormous direct costs of health and justice systems and social control factors, but also into indirect costs (institutional, organizational and individual) due to disability, work incapacity and mental trauma.

**PURPOSE**

The research aims at highlighting the clinical particularities of mechanical trauma pathology produced by hetero-aggression in the living persons in Sibiu County.

**METHODS**

The study method is observational. The research was conducted through a longitudinal survey with the full research of the study material.

The study material is represented by the forensic documents for the trauma victims (aggressions, road accidents, genital examination, work capacity, insurance and psychiatric expertises). Data were collected from the forensic documents of the Forensic Service Department of Sibiu County.

Data collection period: 01.01.2004-31.03.2013.

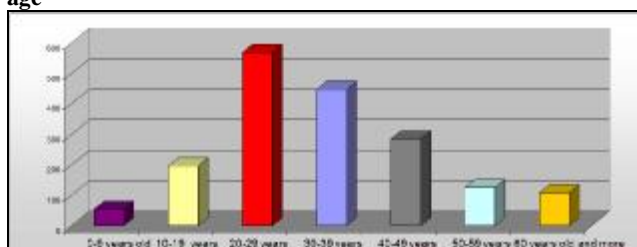
**RESULTS**

We identified a total number of 25 506 examinations for the living persons, of which 17 854 examinations (70%) were addressed to mechanically traumatic persons secondary to hetero-aggression, the frequency of this pathology in the examinations of the living persons being between 1,656 and 1,924 cases per year. The analysis by gender distribution of traumatic patients post-aggression identified 12,070 male patients (67.57%) and 5784 female patients (32.43%), showing an average weight of about 2 times higher for males regarding the entire study period (68% men and 32% women).

Casistry distribution by area of origin identifies a larger addressability of urban patients (9954 patients, 56%) than the rural ones (7,910 patients 44%).

Mechanical traumatic pathology produced by hetero-aggression affects mainly the young and the active age groups. A total of 10,050 patients, representing more than half (55%) of the mechanical traumatic casistry by aggression were aged between 20 and 39 years old.

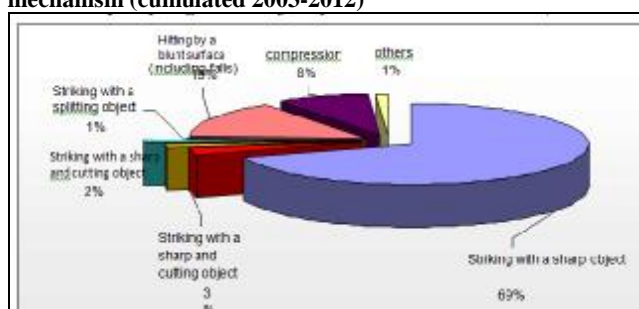
**Figure no. 1. Aggression repartition according to patient's age**



In order of frequency, there have been identified the following lesion mechanisms:

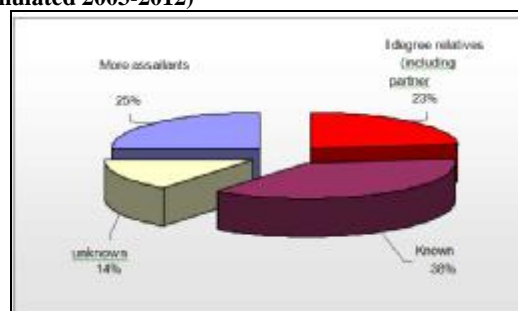
- Striking with a blunt object – 14.455 cases (66,27% of the number of aggressions) within the study period of time;
- Hitting to a blunt surface (including falls) – 3.689 cases (15%);
- Compression (strangulation, throttling) – 1.901 cases (8%);
- Striking with sharp and cutting objects - 768 cases (3,52%);
- Striking with cutting objects - 392 cases (1,8%);
- Striking with sharp objects - 241 cases (1,10%);
- Striking with splitting objects - 87 cases (0,40%);
- Other mechanisms (biting and shooting) - 278 cases (1,27%).

**Figure no. 2. Aggression repartition according to the lesion mechanism (cumulated 2003-2012)**



In 10,721 cases (60% of cases of assault), there is a single assailant. A total of 4,107 assaults (approximately 23%) occurred in the context of domestic violence, the abuser being the current partner (spouse or partner), son / daughter, parent. The number of victims of intra-family aggression varied between 362 and 442 cases per year. In 6,614 cases (37% of cases) the assailant was known by the victim (neighbour, acquaintance or distant relative). A total of 2,678 assaults were with unknown author, their annual frequency ranging between 236 and 286 cases.

**Figure no. 3. Aggressions repartition according to the relationship between victim-assailant, assailant/assailants (cumulated 2003-2012)**

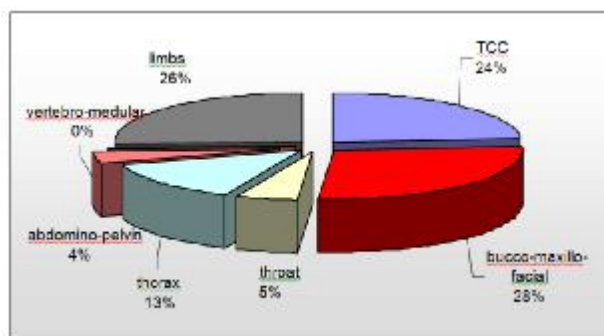


Due to the multiple locations of the elementary traumatic injuries, the statistical assessment of their location was made by evaluating a total of 1,000 selected assaults by randomly extracting a total of 100 assaults in each year of study. Quantification of the obtained data allowed us to draw the following results:

- A quarter of injuries secondary to aggression were located at the level of head (24%);
- 28% of lesions were located at face level;
- 26% of the traumatic lesions can be found in limbs;

- in 13% of assaults, the lesions were located at thorax level;
- cervical location was encountered in 5% of cases;
- 4% of the patients presented lesions with abdomino-pelvic topography (figure no.6).

**Figure no. 4. Repartition of aggressions according to the location of the traumatic lesions (cumulated 2003-2012)**



### DISCUSSIONS

The comparative analysis of the medical work done on the traumatic patients through hetero-aggression, nationally and in the Sibiu County, shows that the share of bullying in the work of health services in Sibiu County is about 10% higher than the national average reported yearly in bulletins.(6-15)

For the entire study period, the number of examinations in males is double those for females, as a result of a more frequent involvement of this gender in violent conflicts, which confirms that male gender is a “demographic risk factor”.(5)

Although literature data suggest that the residents of the less developed socioeconomic regions recorded higher rates of interpersonal aggression and socio-medical consequences of increased severity,(3-5) this research identifies a slightly higher distribution in the request for medical services for lesion pathology post-aggression in the case of urban residents, which can be explained in the context in which the access to health services is easier for the urban residents. On the other hand, in the traditional rural areas, there is higher tolerance of interpersonal violence that does not result in significant medical consequences.

Over half of post-aggression mechanical traumatic pathology examinations were addressed to young persons aged between 20 and 29 years old and adults, with ages ranging between 20-59 years old, confirming the serious social impact of interpersonal violence and their consequences in the active social groups as statistics show at global level.(2,3) The presence of children and adolescents between the victims of interpersonal aggression with lesion pathology requiring medical attention is significant and alarming at the same time, which denotes the failure of violence prevention policies at society level. In most cases, minors’ mechanical injuries were produced in the context of domestic violence, which exposes the failure of control strategies and prevention of domestic violence. As statistical data highlight in the literature, (2) less than one-third of domestic abuse are reported to the competent authorities. We emphasized the importance that the minor’s separated anamnesis, with the consent of his legal representative, has in identifying the repeated abuses.

Another element regarding the gravity of the interpersonal violence phenomenology is the fact that in 40% of assaults, there were multiple assailants. Significant and alarming is that constantly, about one quarter (approximately 23%) of the examinations of the living persons have been the victims of

aggression within the family, the abuser being the first degree relatives (including current partner in the case of consensual unions).

### CONCLUSIONS

- In Sibiu County, the dynamic assessment of the forensic work addressed to the living persons between 2003-2012 shows a share of aggression around 70%, which is almost 10 percent higher than the national average communicated by the annual institutional reports;
- For the entire study period, the number of examinations to males was double, confirming that male gender is a “demographic risk factor”;
- Patients residing in urban areas have a slightly higher addressability to the medical services (56%) than rural residents;
- Two-thirds of mechanical traumatic casuistry post-aggression belongs to the age group between 20-49 years old, which underlines the serious social impact of interpersonal violence in the active social groups;
- A quarter of examinations on the living persons have been addressed to the victims of intra-familial aggression. In the case of minors, most traumatic injuries were produced in the context of domestic violence, emphasizing the role of the physician in identifying the facts of abuse;
- The majority of traumatic injuries were produced by striking with a blunt object (70%), followed by hitting to a blunt surface, including falls (15%);
- Traumatic injuries were mainly locating at head level (24%), face (28%) and limbs (26%).

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