

## RESEARCH ARTICLE

# Soft Tissue Injuries in Hungarian and Austrian Clinical Diagnostic Reports

Fogarasi-Nuber Katalin, Rébék-Nagy G

Department of Languages for Specific Purposes, Faculty of Medicine, University of Pécs, Pécs, Hungary

**Introduction:** In addition to providing first aid, primary treating doctors are required to describe and register injuries acquired in accidents and assaults. They should do this with the highest possible accuracy, as this official document is often the only documentary evidence of soft tissue injuries in case a lawsuit is filed later. Characteristics of injuries may disappear faster with the healing process of the soft tissue, making it impossible for forensic experts to deduce the weapon involved. Consequently, terminological accuracy is a prerequisite for the appropriate reconstruction of the type and severity of injuries. This study aims at analysing reports on soft tissue injuries in Hungary and Austria from the terminological point of view. It is meant to reveal inaccuracies in the use of noun phrases impairing objective and accurate forensic assessment.

**Material and method:** A corpus-based analysis was conducted on 200 Medical Diagnostic Reports (MDRs) from Hungary and Austria (100 from each country) with the linguistic software WordSmith 5.0. Results were processed in Microsoft Excel and demonstrated in graphs.

**Results:** The analysis showed that terminology describing soft tissue injuries is not consistent. Comparatively few characteristics of injuries were recorded in both sub-corpus. Due to inconsistent use of terms and missing characteristics, 17 % of the Hungarian and 18% of the Austrian MDRs were not completely assessable by forensic experts.

**Conclusions:** Describing injuries for legal purposes needs standardisation.

**Keywords:** terminology, soft tissue injuries, forensic medicine, genre analysis, terminologisation, nominal phrase

Received: 18 April 2012

## Introduction

Doctors providing primary care often do not consider the fact that the first documentation of soft tissue injuries is the most important evidence in a lawsuit. In legal cases forensic experts have to assess the injuries either on the basis of the clinical documentation, or e.g. in Germany, they also examine the patient themselves some time later. In Hungary and Austria patients are hardly ever examined by forensic experts. In these countries forensic experts usually receive the medical findings of clinicians and formulate their expert opinions on the basis of these.

Several university textbooks and encyclopaedias on forensic medicine emphasise the importance of exact descriptions in Hungary, Germany and Austria [1,2,3]. However, the rules of describing injuries for future legal use are established only in Hungary, where even an official form is used, although there is still no codified terminology [4].

In Hungary, there have been several studies on the terminology of soft tissue injuries and the use of terms affecting later forensic assessment. One of them concluded that the terms and noun phrases used by clinicians to describe injuries should differ from those used in surgery, or other fields of medicine [5,6]. Therefore, the communication between primary treating doctors and forensic experts can be regarded as a specific genre [7] within medical communication. Further studies have shown that Hungarian and German clinicians tend to neglect recording impor-

tant characteristics of soft tissue injuries (e.g. the side aspect, edges and margins of wounds), which results in deficient reconstruction by forensic experts even in Germany, where a later forensic examination of the patient is also possible [8]. The comparison of the Hungarian, German and Austrian terminology was grounded by the fact that Hungarian terms for specific purposes often originate from German ones, due to the cultural heritage of the Austrian-Hungarian Monarchy. Since the examination of injured patients both in Austria and Hungary is only performed by primary treating doctors, a comparison between these two countries was even more relevant.

The present study aims to show why the terminology of clinical diagnostic reports is insufficient to facilitate later forensic assessment in two of those countries where MDRs are the only evidence of soft tissue injuries. Terms and noun phrases describing types and characteristics of injuries are to be listed and compared, and their information content is examined in contrast with the associated expert opinions.

## Material and method

The corpus of 200 forensic files contains 2 sub-corpus (Hungarian and Austrian), each consisting of 100 files on soft tissue injuries. They are processed in Microsoft Word format, and include both clinical findings (MDRs) and expert opinions. Textbooks used at different universities vary in Hungary, resulting in slight differences in terminology. Consequently, the 100 Hungarian forensic files were collected from various regions of the country. Most

of the sources are Institutes of Forensic Experts and Forensic Research (IFEFR) and only two of them are university departments. Out of 100 files, 17 were collected from the Department of Forensic Medicine at the University of Debrecen, 17 from the IFEFR in Szekszárd, 17 from the IFEFR in Győr, 17 from the IFEFR in Kaposvár, 17 from the Department of Forensic Medicine at the University of Pécs and 15 from the IFEFR in Veszprém.

All the 100 Austrian files were collected from the Department of Forensic Medicine in the University of Graz since there is no significant difference in medical terminology or university textbooks used in the various administrative regions, as opposed to Hungary (and Germany).

MDRs were chosen at random by the search engine with the keyword injury. All personal data were deleted when creating copies of the documents, taking the right for secrecy of personal data into consideration.

The analysis focused on descriptions by doctors who provided primary care (part A), their diagnoses (part B) and the later forensic assessments (part C). Terminology describing types and characteristics was listed and sorted by WordSmith 5.0 linguistic concordancing software, and compared in the 3 parts as well as contrasted with terms used in the other language. Statistics were processed in Excel and represented in charts.

Terms for types and characteristics of injuries were detected and sorted by the software, based on their lemmas, where the files were processed as text files. All the word stems modified by inflection were regarded as varieties belonging to the same lemmas. While comparing MDRs with the associated expert opinions to examine assessability, the only inclusion criterion of not completely assessable findings was the presence of a reference to this fact in the expert opinion.

## Results

The general statistical analysis of the 100 Hungarian and 100 Austrian MDRs yielded the following data:

In Hungary, a large proportion: 87% of injuries were attributable to assaults (including dog bites), and only 13%

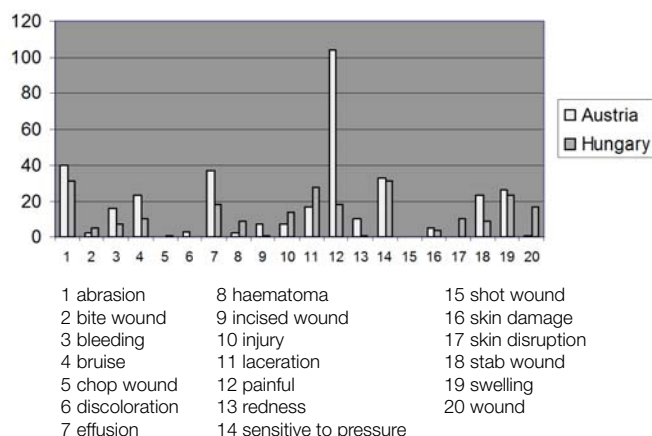


Fig. 1. Types of soft tissue injuries in the general descriptions of injuries (part A) in numbers

to accidents. Only 6% of the MDRs were written by GPs, in contrast with the ones by clinicians in the hospitals. In the Austrian sub-corpus, these percentages were 54%, 46% and 4%, respectively.

The terminological analysis revealed the following terms in the two sub-corpora:

The frequency of different soft tissue injuries in the detailed descriptions of injuries in the two sub-corpora (part A) was compared and is represented in Figure 1.

In the case of the term *swelling*, all inflections of the verb *swell* were taken into consideration in both languages. The frequency of *effusion* includes both German synonyms *Bluterguss* and *Einblutung*. Similarly the Hungarian ones *bevézés* and *véraláfutás*. Both German synonyms *Bluterguss* and *Einblutung* account for the frequency of effusion, similarly to the Hungarian *bevézés* and *véraláfutás*. The Latin-root word *haematoma* was counted separately from these. In the case of *lacerations*, there are two synonymous terms used in both languages which were added up in this study: the German *Platzwunde* (only once) and *Rissquetschwunde* (16 times), and the Hungarian *repszett seb* (17 times) and *zúzott seb* (11 times). In the case of *abrasions* the English Latin-root word was not used in the corpora, only its translation into Hungarian and German. In the case of *bruises*, two major synonyms were detected in the Austrian sub-corpus: *Quetschung* and *Prellung* as well as their variations *Prellmarke* and *Quetschmarke* both of the latter ones meaning *bruise mark*. So they were all included as the same lemma *bruise*.

For forensic reconstruction of soft tissue injuries an essential part of the descriptions is the detailed recording of

Table I. Terms describing characteristics of injuries in part A

Characteristics of injuries	Austria	Hungary
Recording absence of injuries	114	40
Distance from fixed anatomical point	64	73
Outline	9	8
Width	2	9
Length in cm or mm	64	167
Indication of size through comparison	5 (thumbnail, coin, pin-head, large-area)	39 (baby palm, child palm, palm, fist, filler coin, 5 Ft coin, small apple, fingertip, nail, walnut)
Diameter	13	30
Depth in mm or the deepest affected tissue	12	13
Shape	8 Y, V, spindle, kidney, slit, star	10 V, L, T, star, bay leaf, circle, irregular
Margins	3 (washed-out, rolled-up)	18 (sharp, irregular, squeezed)
Edges	0	0
Base	1 (fibres)	3 (bone, injury, blood)
Surroundings	3	1
Tissue bridging	0	0
Sidewalls	0	9 (the same as margins)

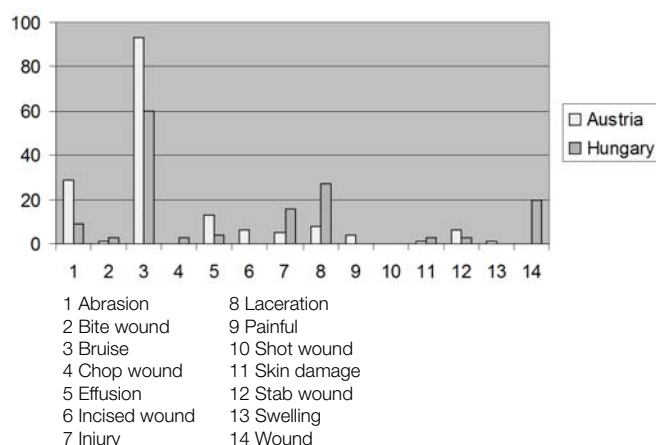


Fig. 2. Types of soft tissue injuries in the clinical diagnoses (part B) in numbers

their characteristics. Table I summarises the features detected in both sub-corpora belonging to the injuries shown in Figure 1.

The diagnoses (part B) contained much fewer terms since they are conclusions resulting from the alterations described in part A. The frequency of the most commonly used terms in the Austrian sub-corpus versus the Hungarian one is represented in Figure 2.

In the expert opinions the accepted diagnoses were repeated as a summary, whereas the ones not reconstructable are also listed with the reasons for not being accepted. Figure 3 represents the proportions of MDRs with reconstructable and not completely reconstructable soft tissue injuries in both sub-corpora.

## Discussions

The results of the analysis suggest that in about 20% of the cases clinicians do not record soft tissue injuries accurately enough for a forensic assessment. The examination of the terms used in the detailed descriptions revealed that certain terms do not refer to observable alterations of the body e.g. *fájdalmas* – *schmerzhaft* (painful) or *nyomásérzékenység* – *Druckempfindlichkeit* (sensitivity to pressure). Forensic experts tend not to take those diagnoses into consideration which describe only subjective complaints of patients, unless they are combined with terms specifying an observable injury. Expert opinions often refer to this phenomenon, like in the following citation from an Austrian file: *„Schmerzen können in Ermangelung entsprechender äußerlich sichtbarer Verletzungsmerkmale keiner spezifischen äußeren Gewalteinwirkung zugeordnet werden.*’ (‘In absence of adequate, externally observable injury marks, pain cannot be attributed to any specific external force.’)

It is important to note that Austrian and Hungarian clinicians as well as forensic experts tend to apply the following synonymous terms to describe bruise: *Prellung*, *Quetschung*, *Prellmarke*, *Quetschmarke* and the Hungarian *zúzódás*. However, in the German secondary literature, these general terms (not referring to a specific alteration)

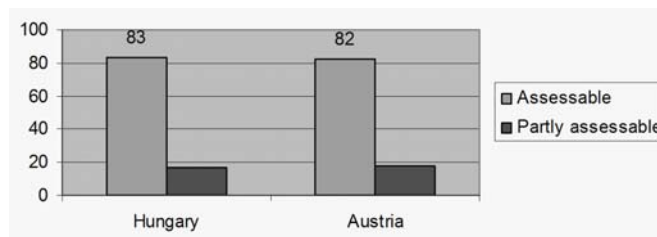


Fig. 3. Assessability of MDRs in the expert opinions (part C) in numbers

are regarded as summarising terms for both bleedings and haematomas under the skin. [9]

A basic criterion for a complete terminologisation of languages for specific purposes is the elimination of synonymous terms. However, both in the Austrian and the Hungarian MDRs two different noun phrases are used for wounds caused by blunt force. Previous studies on the use of terms have shown that the noun phrase *zúzott seb* (lacerated wound) was applied in almost 50% of the MDRs, although it is not codified in the Hungarian secondary literature [10]. In Germany, the current encyclopaedia of forensic medicine recommends the term *Riss-Quetschwunde* instead of *Platzwunde* for the same type of injury, in accordance with the secondary literature most commonly used in Austria [11]. Thus, in the Austrian sub-corpus the term *Platzwunde* only came up once, while it is predominant in Germany [12].

Several terms for other types of soft tissue injuries were not repeated in the diagnoses (e.g. there are much less stab wounds in the diagnoses registered than in the descriptions), on the other hand, the number of some injuries increased in part B (e.g. chop wounds in the Hungarian MDRs). This suggests that these types of injuries tend to be confused in the present corpus too, similarly to other corpora analysed on the same terms [13].

As for registering characteristics of soft tissue injuries, there is very poor record of them in MDRs. Only in about 15% of the MDRs was the external appearance of injuries recorded (e.g. margins or shape). The sidewalls were neglected in all Austrian MDRs, and were only described in some Hungarian MDRs, although they were never differentiated from the margins of the wound. The analysis could reveal only 2 noun phrases depicting margins in the Austrian, and 3 in the Hungarian sub-corpus, from which only the terms *washed-out* and *squeezed* seem to have a similar denotative meaning.

The dimensions of injuries are not always given in cm or mm and especially in Hungary, where comparisons like ‘the size of a small apple’ are used frequently. From a linguistic point of view it can be stated that these comparisons are not even as precise as visual estimates in cm or mm because there is no prototype of the dimensions of a small apple, a palm or a thumbnail in the mental lexicon.

In most cases forensic experts point out the absence of wound characteristics as a reason for not taking injuries

into consideration, like in the following citation from a Hungarian expert opinion: '*A sérülés leírása nem részletes: a sebfalak, sebalap, sebzugok, sebszélek, sebszegély leírása teljesen hiányzik*' ('The description of the injury is not detailed: the descriptions of sidewalls, base, edges, margins and surroundings are completely missing').

Not even photos can help the assessment if there is no consonance between the pictures and the descriptions recorded, which was also mentioned in expert opinions as a reason for the unassessability of injuries. Another factor impairing assessment was that the side aspect of the location of injuries in the written records was the exact opposite of those in the pictures.

To sum up, it can be established that the use of inadequate terminology as well as the absence of the most important characteristics of injuries impair forensic assessment, especially if a later examination by forensic experts is not possible. The results of this study suggests that some clinicians both in Austria and in Hungary seem to underestimate the fact that their reports are the only evidence of soft tissue injuries in legal procedures.

## Conclusions

The comparative analysis of Austrian and Hungarian MDRs from a terminological point of view showed that terms depicting characteristics of soft tissue injuries are not in accordance with the requirements of a terminologised language for a specific genre. Meanings of terms should be defined and synonyms eliminated in cooperation with forensic experts in both countries in order to codify terminology of describing soft tissue injuries. Terminology could be processed with a software for clinical use, facilitating more effective recording of soft tissue injuries. Such software is being developed at the Medical School of the University of Pécs (Hungary).

## References

1. Penning R. Rechtsmedizin systematisch. UNI-MED Verlag AG, Bremen-London-Boston, 2006, 74-75.
2. Pollak S. Klinische Rechtsmedizin und forensisch-klinische Untersuchungen. In: Madea B (ed) Praxis Rechtsmedizin. Befunderhebung, Rekonstruktion, Begutachtung. Springer, Berlin-Heidelberg, 2006, 292
3. Sótóyi P. Igazságügyi Orvostan. Semmelweis, Bp, Budapest, 1996, 57
4. Administrative regulation Nr. 16 of the Hungarian Institute of Forensic Medicine to the Health Care Act of 1997. [http://igor.diogenes.hu/download/modszlev/16\\_mszlev.pdf?PHPSESSID=a27867e8ded9d564069daa0069463d36](http://igor.diogenes.hu/download/modszlev/16_mszlev.pdf?PHPSESSID=a27867e8ded9d564069daa0069463d36)
5. Fogarasi K. A nominális valencia szerepe traumatológiai sérülésleírások értelmezésében (The role of Nominal Valency in the Interpretation of Describing Injuries in Accident Surgery). Online Conference Proceedings of the Institute of Applied Linguistics of the Hungarian Academy of Sciences 2010: <http://www.nytud.hu/alknyelvdok10/proceedings10.pdf>. 31.
6. Fogarasi K. Sebtípusok, sebleírások terminológiai problémái traumatológiai látleteken (Terminological Problems of Types and Descriptions of Wounds in Medical Diagnostic Reports of Accident Surgery). In Porta Lingua, Szaknyelvoktatók és Kutatók Országos Egyesülete Debrecen 2010, 121-138.
7. Swales JM. Genre Analysis. English in Academic and Research Settings. Cambridge University Press, 1990, 134
8. Fogarasi K. Rechtsmedizinische Terminologie in der Befunderhebung von Weichgewebeerletzungen. Eine korpusgestützte Analyse des Terminusgebrauchs in Ungarn und in Deutschland. In: Pon L, Karabalic V, Cimer S (eds.). Applied Linguistics Today: Research and Perspectives – Conference Proceedings of the CALS 2011. Frankfurt am Main, Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2012.
9. Brinkmann B, Madea B. Handbuch gerichtliche Medizin. Volume I. Springer, Berlin, Heidelberg, 2004, 362
10. Fogarasi K. Terminology of Wounds. A Contrastive Survey on Terms in the Technical Literature of Forensic Medicine in Hungary. Acta Medica Marisiensis. 2010;56(6):587-597.
11. Maresch W, Spann W. Angewandte Gerichtsmedizin. Urban & Schwarzenberg, Wien-München-Baltimore, 1987, 29
12. Fogarasi K. Rechtsmedizinische Terminologie in der Befunderhebung von Weichgewebeerletzungen. Eine korpusgestützte Analyse des Terminusgebrauchs in Ungarn und in Deutschland. Conference Proceedings of the Croatian Applied Linguistics Society, Osijek, 2012 (in print)
13. Fogarasi K. Sérülésleírások terminológiájának német-magyar kontrasztív vizsgálata. (A contrastive survey on German and Hungarian terminology of describing injuries). In Porta Lingua, Szaknyelvoktatók és Kutatók Országos Egyesülete Debrecen, 2012 (in print)