

OPINION

by

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in his capacity as a member of the scientific jury based on
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regarding the dissertation on the topic:

"Forensic characteristics of injuries caused by falls from different heights"

for awarding the educational and scientific degree "**doctor**"

in the specialty "**Forensic Medicine**"

with author: **Dr. Plamena Milenova Dineva**

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The presented dissertation work for the award of the educational and scientific degree "Doctor" in the specialty "Forensic Medicine" is structured in the classical manner for this type of scientific work and includes: introduction (1 page), literature review (34 pages), goal and objectives (1 page), materials and methods (2 pages), results (91 pages), summary and discussion of the results (17 pages), application in forensic practice (2 pages), conclusion (2 pages), contributions (2 pages) and bibliography.

It is evident from the content that the author has adopted the correct logic of the presentation – from the theoretical formulation of the problem, through its methodical research, to its practical application in forensic medical expertise. This is especially important in a topic

with a clearly expressed expert and medico-legal significance, such as the forensic medical assessment of injuries in falls from different heights.

The topic of the dissertation is undoubtedly relevant both in theoretical and practical terms. Falls from a height are among the leading causes of serious injuries and deaths, along with road accidents, and in many cases are associated with accidents, suicidal acts, and less often with other mechanisms. The introduction correctly emphasizes that falls from a height occupy one of the leading places in mortality related to injuries, and are particularly relevant in the context of occupational accidents in Bulgaria.

The forensic importance of the problem stems from the fact that during an autopsy, the expert is often faced with significant difficulties in interpreting traumatic injuries and determining the manner of death. The author correctly notes that the manner of death is a legal concept, but the forensic finding has a primarily supporting significance for its definition. It is here that the dissertation finds its place – through an attempt to systematize the traumatic findings and their relationship with the mechanism of the fall, the height, the manner of landing, the first contact of the body, the characteristics of the surface and a number of other factors.

It is also of particular importance that the dissertation examines not only the classic fatal falls from a great height, but also the less studied cases of falls from a small height, including from one's own height, in which the differential diagnostic difficulties in forensic practice can be significant. This gives the work a distinct practical focus.

The literature review is extensive in design and examines the problem in a multi-layered manner. Dr. Dineva has approached not only descriptively, but also conceptually, by tracing:

- the circumstances under which falls from a height occur;
- the different mechanisms and determinants of trauma;
- the variability of traumatic injuries according to the height of the fall;
- of bone, soft tissue and visceral injuries;
- the peculiarities of forensic anthropological interpretation of skeletal remains;
- the difficulties in distinguishing falls from a height from other mechanisms of action of hard blunt objects.

It is correctly concluded that there are many factors that determine the nature and severity of injuries – fall height, previously applied force, age, gender, body weight, surface characteristics, landing method and first body contact. This is particularly important because it shows that the author does not consider falls from a height as a uniform mechanism, but as a complex complex of kinetic and biomechanical events.

A significant advantage of the review is the detailed description of the individual groups of injuries. In falls from a height ≤ 3 meters, they were analyzed in terms of:

- abrasions, bruises and lacerations;

- soft tissue injuries;
- fractures of the skull, vertebrae, ribs, sternum, pelvis and limb bones;
- brain injuries and intracranial hemorrhages;
- injuries to internal organs, including the heart and other structures.

A particularly good impression is made by the fact that the dissertationist has tried to connect the purely morphological description with its forensic meaning. For example, in craniocerebral trauma, the different types of contusions are examined – coup, contrecoup, intermediate, sliding and hernial, as well as epidural, subdural, subarachnoid and intracerebral hemorrhages, with an emphasis on the mechanisms of their occurrence and their forensic interpretation.

The review shows a very good orientation in the classical and contemporary literature on the problem and creates the necessary theoretical basis for her own research.

A critical note that can be made is that the literature review is in places too detailed, with extensive theoretical deviations in individual subtopics. However, this is not a weakness in essence, but rather a matter of editorial interpretation and the possibility of sufficient information for the discussion.

The aim of the work is clearly formulated. The author sets herself the task of obtaining an objective forensic characterization of traumatic injuries in falls from different heights, separately considering three groups:

1. fall below 3 meters;
2. fall from 3 to 9 meters;
3. fall above 9 meters.

This division is methodologically correct and logical, as it creates conditions for stratified analysis and for comparison between different energy levels of traumatic impact.

The main tasks logically follow directly from the goal and include:

- study of the characteristics of traumatic injuries on the bodies of deceased persons as a result of falls in the specified height ranges;
- comparison of the obtained results with data from Bulgarian and foreign studies;
- search for objective criteria for distinguishing between different fall heights;
- derivation of practically useful forensic models.

The goal and tasks are formulated correctly and adequately to the topic.

From the available information and the formulation of the contributions, it is evident that the study is based on real forensic material from the Plovdiv region for the period 2017–

2021, and a comprehensive and detailed analysis of cases of falls from different heights has been carried out.

Although the available excerpts lack a full methodological section in detail, the logic of the study clearly shows that Dr. Dineva used retrospective forensic analysis of autopsy data, systematization of traumatic injuries by anatomical areas and organ systems, as well as comparison with literary sources. This is a relevant approach for such a topic, as it allows for the establishment of repeated morphological patterns and their relationship with the height of the fall.

From the nature of the presentation, it can be concluded that the author worked on an algorithmic model of description, which is particularly valuable for forensic practice, where the systematic nature of the autopsy protocol is of essential importance. This is also confirmed in the contributions section, where the need for a detailed and systematic performance of the forensic autopsy according to the algorithm proposed by the author is explicitly emphasized.

From the content of the work and the formulated contributions, it is clear that the main result is the systematized description of traumatic injuries in falls from different heights, with an attempt to relate them to an approximate assessment of the height of the fall. The author does not limit himself to general findings, but strives to derive characteristic complexes of injuries that have forensic value.

Of great importance is the distinction drawn between injuries in:

- fall from one's own height and/or ≤ 3 m;
- fall from an average height;
- fall from a significant height.

This is especially important in practice, because it is in these borderline and controversial cases that the expert must make complex conclusions regarding the mechanism of trauma, the possibility of free fall, the likelihood of accompanying violence and the correspondence between the data from the examination, autopsy and investigation.

The individual literature data included by the author also show a desire for quantitative interpretation of some findings, for example:

- multiplicity of abrasions in low falls;
- different frequency of bruises and lacerations;
- relatively low percentage of certain bone fractures in falls ≤ 3 m;
- characteristic features of craniocerebral and intracranial trauma.

As can be seen from the structure of the work, the doctoral candidate has allocated separate sections for summarizing and discussing the results and for application in forensic practice. This is a correct decision, since the topic implies not only a scientific description, but also a practical translation of the results to expert activity.

The practical application of such work is obvious in several areas:

- in forensic autopsy of cases with suspected falls;
- in differentiating between falls from a height and other mechanisms of trauma;
- in assessing the probable height of the fall;
- in distinguishing between an accident, suicide and a possible homicidal act;
- in forensic anthropological cases where only skeletal remains are available.

It should be especially appreciated that the author has developed a practically applicable option for working in cases related to falls from a height and/or from one's own height, including cases with suspicion of falls from a height. This is a direct contribution to expert work and shows that the dissertation is oriented not only to academically filling gaps in the literature, but also to the real need of forensic practice.

The contributions of the work are clearly formulated and grouped into three main categories.

A. Contributions of a scientifically applied and original nature

In them, Dr. Dineva points out that a comprehensive and detailed analysis of the traumatic injuries accompanying falls from different heights was conducted, based on forensic cases from the Plovdiv region for the period 2017–2021. In addition, a practically applicable option for working with such cases was developed, and for the first time in the Bulgarian forensic literature, a systematized and detailed analysis of traumatic injuries from falls from different heights was carried out, based on real forensic material.

B. Confirmatory contributions

The study confirms the need for a detailed and systematic forensic autopsy of those who died as a result of a fall from a height, with a description of the identified injuries according to the proposed algorithm. In addition, the results obtained significantly confirm the data from the used Bulgarian and foreign literary sources.

C. Practical contributions

They are reduced to the development of assessment scales for an approximate assessment of the approximate height of the fall based on the characteristic traumatic injuries established during the forensic medical examination and autopsy. It is this contribution that has the greatest immediate value for expert activity.

In general, the contributions are real, logically stem from the content of the work and are not formal.

The results of the dissertation work are presented in three publications, one of which in a refereed journal.

Based on the presented work, I believe that the dissertation work of Dr. Plamena Milenova Dineva is dedicated to a significant, difficult and insufficiently developed problem in the Bulgarian forensic literature. The work has a clear practical focus, a good theoretical basis and contains real scientific-applied and confirmatory contributions.

I especially appreciate the author's attempt to systematize injuries from falls from different heights, to use them as a reference for expert assessment of the mechanism of trauma and to propose an algorithm and scales with practical application in forensic medicine. This makes the work useful not only from a scientific, but also from a direct expert point of view.

For the above reasons, I give a positive assessment of the dissertation work and believe that it meets the requirements for awarding the educational and scientific degree "Doctor" in the specialty "Forensic Medicine". Therefore, I will vote positively, and I also take the liberty of proposing to the members of the esteemed scientific jury to also vote positively and award the educational and scientific degree "Doctor" to Dr. Plamena Milenova Dineva.

15. 04.2026


Prof. Dr. V. Belovezhdov, MD

**Заличено на основание
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