

REVIEW

By Assoc. Prof. Dr. Biser Aleksandrov Makelov, MD

Thracian University Stara Zagora

Faculty of Medicine

Department of General Surgery

Subject: defense of a scientific paper by **Dr. Plamena Milenova Dineva**,

on the topic

"Forensic characteristics of injuries in falls from different heights"

for the acquisition of the educational and scientific degree "Doctor".

By order of the Rector of MU-Plovdiv P-1869/26.03.2026, I have been appointed as a member of the Scientific Jury and by the latter's decision (Protocol No. 1), I have been assigned to present a review of the dissertation work of Dr. Plamena Milenova Dineva, a free-form doctoral student at the Department of Forensic Medicine and Deontology of the Ministry of Justice at MU-Plovdiv, in the field of higher education 7. "Healthcare and Sports" in the professional field 7.1 "Medicine" and the doctoral program "Forensic Medicine and Deontology".

A fall from a height can be defined as the movement of the body to a lower level than the level at which it is located, under the influence of gravity, due to inattention, imbalance or volitional actions of oneself or another person. The kinetic energy obtained during a fall from a height leads to multiple traumatic injuries and death, affecting the entire body.

Falls from height are ranked among the top causes of injury-related mortality, along with road traffic accidents. They account for a high percentage of injuries related to hard blunt objects. The main cases of this type of injury are related to accidents or suicide, which lead to disability or death. Falls from height are more common in cities and are among the three most common causes of death due to trauma. Fatal outcomes are observed more in adults than in children. Falls from height are the most common cause of death in occupational accidents in Bulgaria. There are many factors that influence the outcome of a fall from a height - age, gender, the characteristics of the surface on which the body falls, the angle of fall, the height of fall, the manner of landing and the first contact of the body.

In forensic practice, there are not isolated cases in which, based on the characteristics of the traumatic injuries found during the autopsy, the expert experiences significant difficulties in determining the manner of death. The latter is a legal concept, but the forensic finding assists

in its definition. There are significant difficulties in determining the medico-legal assessment of injuries resulting from falls from a height, accidents, suicides and murders.

These questions are currently raised by the scientific paper presented for defense by Dr. Dineva, which is a retrospective longitudinal study involving patients meeting strict indications.

The results of patients from forensic cases in incidents with falls from different heights, including those from one's own trust, are analyzed.

The dissertation is presented in the usual structure for this type of work in 162 standard pages, 91 tables, 91 figures are used, all of them are indicated with a serial number and title in Bulgarian. The presented figures and graphs are of high quality and informative, and correspond meaningfully to the accompanying text. The dissertation has attached statistical maps, as an application for working with patients and corpses suspected of falling from different heights, including one's own height.

In the rest of the dissertation, Dr. Dineva formulates the goal and the four tasks arising from it, the contingent of the study, the clinical methodology of the study, the techniques used for analyzing the patients, the own results, the author's analysis and conclusions. The bibliography covers 6 pages, 67 titles are presented, without using those in Cyrillic.

The literature review is quite extensive, covering all aspects of the problem. It mainly presents contemporary publications, most of which are from the last few years. The cited sources are from authoritative scientific journals. The review is 34 pages long and represents about 25% of the volume of the dissertation. It sequentially presents:

1. Characteristics of traumatic injuries in falls from a height of less than 3 meters, including from one's own height.
2. Characteristics of traumatic injuries in falls from a height of between 3 and 9 meters.
3. Characteristics of traumatic injuries in falls from a height of more than 3 meters.
4. Characteristics of traumatic injuries by gender, age, BMI and mode of death.

All traumatic injuries have been studied and described in detail, systematized by anatomical areas - injuries to the head and neck, chest, abdomen, pelvis, upper and lower extremities.

The literature review is specific to the dissertation and is a critical synthesis of Dr. Dineva's extensive knowledge on the problem - Characteristics of traumatic injuries when falling from different heights.

The goals set for the doctoral student are formulated in Chapter III: "To obtain an objective forensic characterization of injuries when falling from a height of up to three meters, including one's own height, between three and nine meters and above nine meters in height."

In view of the set goal, 4 scientific tasks are formulated. They are logically justified, stem from the set goal and are realistically feasible.

In Chapter IV, in a volume of 2 pages, the materials and methods used in the dissertation are presented.

In Chapter V, in a volume of 91 pages, the results are presented, presented in tables and graphs according to the three main criteria - the height of the fall. They are divided according to the anatomical localization of the injuries, and in each of the groups - head and neck, chest, abdomen, pelvis, upper and lower extremities - the traumatic injuries are examined in detail, examined layer by layer - skin, soft tissues, bones, internal organs.

In the following chapter VI, in a volume of 17 pages, the discussion of the dissertation is presented. Here, the own results are presented, compared and supported by literary data. This chapter is the most creative of the entire scientific work. It convincingly proves the preparation of Dr. Dineva on the presented issues.

In chapter VII - application in forensic practice, a forensic case from the practice of Dr. Dineva is presented, which is of interest regarding determining the cause of death, a topic addressed in the dissertation.

Chapter VIII presents the conclusion, which presents the author's views on the problem in a synthesized form. One of the main practical difficulties is considered - determining the height of the fall, as well as distinguishing the resulting injuries from other types of trauma. A detailed examination of the problems of falling from a height of less than 3 meters, as well as from one's own height, which is not only a forensic, but also a multidisciplinary problem, is included. The opinion stands out that currently there are no established uniform criteria for a comprehensive assessment of injuries from falls from different heights, which in turn determines the need for targeted research in this direction, as well as the development of practically applicable criteria and algorithms for work both in clinical practice and in forensic structures.

Chapter IX presents the contributions of the dissertation. They are divided into three groups:

1. Contributions of a cognitive nature
2. Contributions of a scientifically applied and original nature
3. Contributions of a confirmatory nature

Each of the groups of contributions contains three subgroups, so that in conclusion it can be said that the dissertation includes a total of nine contributions of a different nature.

On the dissertation topic, Dr. Dineva presents 3 publications (all meet the criteria for real publications). They are presented in Chapter X. They are printed in peer-reviewed journals that meet the minimum requirements for Area 7. Health and Sports, according to the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria of 2018. They contain separate parts of the developed material.

The Abstract of the dissertation presented to me is 40 pages long and is formatted according to the requirements of Appendix No. 8 of the PURPNSZADMUV.

In conclusion, the dissertation submitted to me for review demonstrates the ability of the dissertation candidate to present a scientific thesis, a methodology for its solution, his ability to select and process material, as well as statistically reliable conclusions on a current and specific topic "Forensic characteristics of traumatic injuries in falls from different heights"

The dissertation fully meets the qualitative and quantitative criteria set out in the Requirements for Dissertation for the Acquisition of the Educational and Scientific Degree "Doctor" of the Medical University of Plovdiv. Therefore, I give a positive assessment of the work and call on the members of the Scientific Jury to award Dr. Plamena Milenova Dineva the educational and scientific degree "DOCTOR" in the scientific specialty "Forensic Medicine and Deontology".

Заличено на основание
Чл.5 §1, б. "В" Регламент (ЕС)2016/679

09.04.2026,

Stara Zagora

.....
Assoc. Prof. Dr. Biser Makelov, MD, PhD