

REVIEW

in a competitive procedure for occupying the academic position
"Associated Professor"

In the specialty "Forensic medicine" in the field of Higher education 7. Health care and sports, professional direction 7.1. Medicine - one, 0.5 full-time position for the needs of the Department of "General and Clinical Pathology, Forensic Medicine and Deontology" at the Faculty of Medicine and 0.5 full-time position for the "Forensic Medicine" Clinic at UMBAL "Sveta Marina" EAD - Varna announced in SG No. 102 of 23.12.2022

with candidate: Dr. Emilia Mihailova Kaisheva, PhD

Reviewer: Prof. Dr. Sevdalin Slavov Nachev, PhD - specialist in forensic medicine.

On the basis of the decision of the Faculty Council /protocol No. 81/ 06.02.2023/ and appointed by order of the Rector of the Medical University - Varna, No. R-109-154/23.02.2023 scientific jury, I am appointed to prepare a review.

All documents required by both the law and the regulations of the University have been submitted.

1/ Brief biographical data, academic development and specializations of the candidate:

Dr. Kaisheva graduated in medicine in 2000. In 2011, she was selected as an assistant in the Clinic of Forensic Medicine at the University Hospital "Sveta Marina" MU - Varna. Since 2019, she has been the chief assistant, and since 2021, she has been appointed as the Head of the Clinic.

In 2006, she received a specialty in Forensic Medicine.

Dr. Kaisheva is a doctoral student in the Department of "General and Clinical Pathology, Forensic Medicine and Deontology", specialty "Forensic Medicine" in 2014-2018. She defended her dissertation on the topic: "Criteria for determining thermal trauma as bodily injury".

2/ General description of the submitted materials for the competition.

Dr. Kaisheva participated in the current competition for associated professor with the following:

Monography - 1 stand-alone - 329 pages.

Summaries of scientific works in total 16 nos., grouped as follows:

A. Scientific works, included in an Academic report according to a sample, proving the fulfillment of the minimum requirements for the position of JSC "Associated Professor", according to the Regulations for the Application of ZRASRB:

1. According to criterion Г:

- indicator Г7. Scientific publications in journals that are referenced and indexed in world-renowned databases of scientific information (Web of Science and Scopus) (5 pieces);

- indicator Г8. Scientific publications in non-refereed peer-reviewed journals (10 pieces)

2. Full-text publications in scientific journals and anthologies, other than those participating in the evidentiary material to cover the minimum scientometric requirements for the appointment of AD "Associated Professor" (1 issue).

B. Scientific and pedagogical asset:

- 16 reports presented at congresses and conferences;
- Qualification course – Basics of academic teaching;
- Participation in the Balkan Academy of Forensic Sciences (BAFS) - Istanbul 2013;
- Qualification course for trainers from medical institutions - 2014;
- "From classic pathology and morphology to molecules in breast cancer and other solid tumors with innovative products Illumina, Termo Fisher Scientific, Abbott Molecular and Nikon - 2016;
- Third Congress of Clinical Toxicology. Varna -2020

The quantitative characteristics of Dr. Kaisheva's research work cover the requirements for holding the academic position of "Associated Professor" in the Regulations for the Development of the Academic Staff of MU-Varna.

A table is presented in which her published works are marked with corresponding points. With a requirement of a total of 200 points, she has 228 points. Moreover, in rubric Γ 7, with a requirement for clinical/fundamental disciplines of 60/80, her points are 137. In total, from refereed and non-refereed editions in which Dr. Kaisheva has published works, in nine /9/ cases real quotes were found. It is surprising, at least to me, that a publication in a journal with IF /International Journal of Legal Medicine/ is awarded fewer points compared to other journals?!?

3/ Qualitative evaluation of the research activity. Brief presentation of published materials and contributions.

Dr. Kaisheva's scientific works are devoted to the following topics:

A. Examination of human hairs with regard to the significance they may have for the needs of a forensic-medical determination. Her **monography: "Forensic Significance of Human Hairs"** is devoted to this topic. According to the requirements, it is accompanied by two reviews made by forensic experts and professors of forensic medicine in universities with extensive experience in this field. They are familiar with and even have personal experience not only in classical research methods as evidence, but also the most modern ones /DNA analysis/. This makes their opinion about this work extremely authoritative. I just need to highlight some important, in my opinion, points raised by the reviewers. The fact that, for the first time in Bulgarian literature a similar work has been printed, touching forensic-medical problems /Assoc. Prof. Apostolov/. This work is written in a precise and understandable language, "unencumbered by foreigners and incomprehensible terms....analytically, but also propaedeutically"/Assoc. Prof. Spasov/. The global research practices as well as the author's personal observations are presented in an orderly and comprehensive manner. Last but not least, the work is provided with a rich literary reference. The very extensive and systematized information in the work, the shared professional expertise and practice, make the monography

useful both for the training of students and specialist doctors, as well as for the daily practical work of forensic medical specialists and experts from the structures of the Ministry of the Interior.

B. According to criterion Γ - indicator $\Gamma 7$

1. Morphological characteristics for identification of human hairs.

The article was published in the journal *Acta Morphologica et Anthropologica*. 2021; 28 (3-4): 37-48.

The authors share their experience in this area of forensic practice. They emphasize that, despite the fact that "the morphological analysis of hair is only of limited probative value and to date there are much more accurate research methods (nuclear DNA, mitochondrial DNA, etc.)", they are convinced that the determination of hair morphological characteristics retain their importance in hair identification. On their basis, a number of characteristics of the individual are determined, namely his species, race, gender, etc.

2. Arrhythmogenic right ventricular dysplasia

The article was published in *Cardiovascular diseases* 2022;53/1/;63-8

The finding in two children with arrhythmogenic right ventricular dysplasia (arrhythmogenic right ventricular cardiomyopathy) is described. The disease is familial, genetically determined and characterized by fibrofatty infiltration of the right ventricle (replacement of cardiomyocytes with fibrous and/or fatty tissue), leading to ventricular arrhythmias and sudden death or progressive right ventricular failure. It occurs at the age of 15-40 years and for this reason the published cases are of interest, which are of very young individuals / at the age of 11 /.

3. Pelagroid dermatitis

The article was published in *Medical Review* 2022;58(2):51-5

The disease is a skin form of pellagra, which manifests itself after exposure to the sun in people whose bodies lack vitamins B1, B2, B3, B6 and the essential amino acid - tryptophan. It is not common for Bulgaria. The authors of the article describe it as a 46-year-old woman with chronic alcoholism who died of sepsis. The authors point out that untreated skin manifestations or untimely treatment can lead to severe complications and even be fatal.

4. Application of anthropological methods in the identification of sex, age and height in cases with a decomposing body.

The article was published in the journal *Acta Morphologica et Anthropologica*. 2021; 28(3-4): 116-21

The authors draw attention to the difficulties that accompany the identification of a deceased person with advanced decomposition of the body and missing body parts. The applied anthropological methods in the case described by them were helpful for further investigative actions.

5. Relationship between age and the circumference of the aorta - possibility of application in forensic medical practice.

The article was published in the *International Journal of Legal Medicine*. 2012;126(11):207. The magazine is with IF 2,791 /2022-2023/.

The authors dedicate their study to a major challenge in the practice of determining the age of unidentified persons in forensic cases. They draw attention to the fact that classical methods are often inapplicable to dismembered or decomposed corpses. This creates a need for new approaches to the problem. There is evidence in the literature of a close linear relationship between age and various aortic characteristics. In their study of 729 cases aged 1-93 years, the authors looked for a relationship between age and the internal circumference of the thoracic aorta at the level of the diaphragm by attempting a Pearson correlation equation. Estimates of age based on aortic circumference were made with linear regression analysis. The level of significance was set as $\alpha=0.05$. As a result, there was a close statistically significant correlation between age and thoracic aortic circumference in both sexes. The correlation coefficient is 0.841 for men.

C. According to criterion Γ - indicator $\Gamma 8$

1. Use of "score-systems" /scales/ for disabilities in judicial practice.

The article was published in: "Compendium 100 years since the foundation of forensic medicine in Bratislava" - Bratislava. 2019. p. 209-14.

The authors recommend wider use in forensic medical practice of the developed and validated scales for determining the severity of injuries: Abbreviated Injury Scale (AIS) and its derivatives - MAIS - Maximum AIS, Injury Severity Score (ISS) and a new scale for injury severity assessment (NISS). For different types of injuries, the assessment can be supplemented by the use of certain specific and generally accepted scales, such as Glasgow-Liege for cranial injury, ABSI (Abbreviated Burn Severity Index), BOBI (Belgian Burn Score Scale), rBaux for burns and others. The application of medical standards regarding the treatment of various post-traumatic conditions is also useful, in attempts to improve the degree of objectivity in the preparation of forensic medical conclusions, and especially in cases where medical professionals are investigated for the correctness of the treatment administered, including cases of treatment after criminal incidents with fatal outcome.

2. Forensic research on fatal burns in adults

The article was published in: Collection 100 years since the foundation of forensic medicine in Bratislava" - Bratislava. 2019. p. 321-8.

The aim of this study was to determine the characteristics of fatal burns in the elderly and their forensic significance. The study included 1,006 patients over the age of 60, of whom 75 died. The mortality rate is 7.46%. It was found that 64% of elderly people with fatal burns (>60 years) had at least one pre-existing chronic disease. This is also a reason for a more severe course of the trauma and a higher mortality rate.

3. Various aspects of the forensic medical judgment in medical intervention regarding persons involved in traffic accidents.– In: Compilation 100 years since the foundation of forensic medicine in Bratislava. 2019. p. 215-22.

This article focuses on the change that has occurred in the legal analysis of personal injury liability in the event of death following subsequent treatment. From 1,075 forensic medical examinations based on written data on bodily injuries from mechanical impact, the cases with a fatal outcome were separated, which varied between 4% and 5% over the years. The tasks assigned to the experts determine the direction of the investigation. At the beginning of the study period, the questions were aimed at clarifying the cause-and-effect relationship between injuries and death, and in the last two years of the period, in 92% of cases, the tasks were related

to the adequacy and appropriateness of the treatment provided. There is a tendency to assign shared blame to the causers of the traffic accident and to the health professionals who provided subsequent qualified medical assistance. In these cases, the medical examiner is faced with the difficulty of establishing accurate criteria for judging cases based on the severity of the injury, the prognosis for recovery and, in general, the significance of the medical care provided.

Here, personally, I would add that the expertise could be helped by a precise indication of whether the medical standard was met ?!!!? / see below/

4. Analysis of liability in case of death after mechanical trauma and subsequent medical assistance. The article was published in: *Folia Societatis Medicinae Legalis Slovacae*. 2019;9(2):84-

In general, the topic of the publication is similar to the previous one, as it was published in a specialized journal dedicated to forensic medical problems.

5. Possibilities for objectively distinguishing the cause of death as a result of trauma or inadequate treatment. The article was published in: *Folia Societatis Medicinae Legalis Slovacae*. 2019;9(2):131-4.

The authors recommend wider use of the scales developed and approved in forensic medicine practice for determining the severity of injuries such as: Abbreviated Injury Scale (AIS) and its derivatives: MAIS - Maximum AIS, Injury Severity Score (ISS) and New Injury Severity Score (NISS). For different types of injuries, the assessment can be supplemented with the use of certain specific and generally accepted scales, such as Glasgow-Liege for cranial injuries, ABSI (Abbreviated Burns Severity Index), BOBI (Belgian Outcome of Burn Injury), rBaux for burns and others.

The use of medical guidelines regarding the treatment of various post-traumatic conditions is also recommended.

6. Characteristics of fatal burn in adults and its forensic significance. The article was published in: *Folia Societatis Medicinae Legalis Slovacae*. 2019;9(2): 123-6.

The work largely repeats what was published in "Compendium 100 years since the foundation of forensic medicine in Bratislava" - Bratislava. 2019. p. 321-8.

7. Introduction of objective criteria when preparing forensic medical examinations. In: First congress of the Bulgarian Society of Forensic Medicine: October 13-15, 2017, Bulgaria, city of Varna - "St. St. Constantine and Elena": abstracts / [edited by Alexander Apostolov. and others]. Sofia: Simmel Press; 2017. p. 22-3.

The authors urge the minimization of forensic examinations that are based on the subjective perceptions of experts. The form of presentation should be prepared in the form of a "check list", where objective verifiable and reproducible data should be reflected as much as possible.

The work indicates the possibilities of introducing modern methods such as digital photography, scanner, laboratory tests and others, along with the routine histological, chemical and others, to justify and argue the forensic medical conclusions to the maximum extent.

8. Identification of skeletal remains through the use of software programs. In: First Congress of the Bulgarian Society of Forensic Medicine: October 13-15, 2017, Bulgaria, city

of Varna - k.k. "St. St. Constantine and Elena": summaries / [edited by Alexander Apostolov. and others]. Sofia: Simmel Press; 2017. pp. 73-4.

Identification from skeletal remains is one of the most difficult forensic examinations. With it, the medical examiner aims to determine the permanent signs of the individual (race, sex, age, height, etc.) and, if possible, some of the non-permanent signs, such as congenital and acquired individual characteristics, diseases, etc. Combined work with two types of programs and spreadsheets, which increases the security of the received data almost to 90% / FORDISC, 3D-1D, CranID, ThreeSkull, Anthropolog, ADBOU/.

9. Criteria for accepting a life-threatening condition in cases of a diagnosis of "brain concussion with complete loss of consciousness." In: First Congress of the Bulgarian Society of Forensic Medicine: October 13-15, 2017, Bulgaria, city of Varna - k.k. "St. St. Constantine and Elena": summaries / [edited by Alexander Apostolov. and others]. Sofia: Simmel Press; 2017. pp. 16-7.

Previous studies have shown a lack of consensus in the forensic assessment of whether a concussion accompanied by loss of consciousness constitutes a life-threatening condition.

The authors are looking for as objective criteria as possible to determine the qualifications: Life-threatening health disorder; temporary life-threatening health disorder and permanent life-threatening general health disorder. They use comparatively the possibilities of application of American and Russian system

In order to implement the conclusions drawn by them in judicial practice, a text change is necessary in point 13 of Decree No. 3 /27.09.1979 of the plenary session of the Supreme Court regarding the acceptance as a health disorder temporarily dangerous to life in cases of ... concussion of the brain ... resulted in falling into a state of unconsciousness, albeit for a short time ..."

10. The documented medical assistance in the forensic medical examination. In: First Congress of the Bulgarian Society of Forensic Medicine: October 13-15, 2017, Bulgaria, city of Varna - k.k. "St. St. Constantine and Elena"; summaries / [red col. Alexander Apostolov. and others]. Sofia: Simmel Press; 2017. pp. 53-4.

Expertise on written data constitutes the majority of general forensic work. The authors present a scheme for systematizing the main points in the examination and citation of medical data, which would facilitate the construction of the forensic medical conclusion and interpretation. The medical care reflected in any officially accepted medical form can be divided into two main groups: diagnosis and treatment. Accordingly, the diagnosis should be specified whether it is based on clinical examination, imaging or paraclinical examination. The treatment is divided according to several criteria: place of implementation /pre-hospital, hospital medical care/; type /conservative, operative/; duration and result /full recovery, disability/. The proposed scheme contributes to: 1. objectification of the established diagnosis with the possibility of assessing the severity of the disability and its qualification on different scales. 2. the collection of informative documentation and discussion of a new approach in the assessment of medical assistance in the appointed expertises in civil, criminal and administrative cases.

Dr. Kaisheva's scientific output covers various fields of forensic medicine, some of them in significant areas:

1. Forensic identification of the person

a/ Monography; Publications D. 7.3; D. 7.4; D. 7.5; D.8.8.)

b/ Publications (D.7.3; D.7.4; D.7.5; D.8.8.) The possibility of applying some anthropological methods in determining medico-biological signs such as gender, age and height, part of the individual identification of the person, was investigated

2. Objectification of forensic medical expertise (Publications D.8.1.; D.8.Z.; D.8.4.; D.8.5.; D.8.7.; D.8.9.; D.8.10.)

3. Traumatism (Publications D.8.2; D.8.6.)

4. Disease pathology (Publications D. 7.1.; D. 7.2.)

I agree in many ways with her self-assessment so I won't present my own.

4/ Evaluation of scientific and teaching activity.

Dr. Kaisheva is a long-time teacher of medical and dental students.

The report presented by the University about her study load shows that in the period 2018-2022, with a norm of 220 hours, Dr. Kaisheva has between 279-388 hours.

Dr. Kaisheva is an established long-term teacher of students with a career of more than 15 years, of which more than 12 years - assistant, and in the last 3 years - chief assistant.

The quantitative and qualitative indicators of scientific and educational activity fully correspond to the criteria for occupying the academic position of "Associated Professor".

Personal impressions:

1. Received during my review of the dissertation that Dr. Kaisheva submitted for obtaining the scientific-educational degree "Doctor of Medicine".

2. From her participation in scientific forums over the years.

My overall assessment of the applicant's compliance with the mandatory conditions and mandatory quantitative criteria and scientometric indicators acc. The regulation for occupying academic positions at MU-Varna in: Occupancy of an academic position "Associated Professor" at MU-Varna, and the Regulations for the development of the academic staff of MU-Varna, is that Dr. Kaisheva **meets** the general conditions: completed higher medical education, acquired specialty in forensic medicine, protected ONS "Doctor" in the scientific specialty of forensic medicine, etc. mentioned above by me.


Conclusion: (meets/does not meet the mandatory and specific conditions and scientometric criteria for JSC "DOCENT").

After I have fully familiarized myself with the materials provided and after I have made a comprehensive assessment of the research and teaching activities of the participant in the competition for the academic position "Associated Professor" in the scientific specialty of Forensic Medicine, **I declare that the candidate Dr. Kaisheva, d. m. meets the requirements of the RSASR and the Regulation on the occupation of the academic position "Associated Professor" from the rules of the MU-Varna.**

Proposal for filling the position.

Based on the above and according to the candidate's compliance with the mandatory scientometric criteria in qualitative and quantitative terms according to the requirements of the RASRB and the Regulation for occupying the academic position "Associated Professor" from the rules of the MU-Varna, **I categorically and confidently give my positive assessment and offer to the others members of the venerable Faculty of Science to vote on the awarding of AD "Associated Professor" to Dr. Emilia Kaisheva, PhD.** After voting, she should be proposed to the Scientific Council for selection and to the Academic Council of the MU - Varna for approval for the occupation of the academic position "Associated Professor" in the scientific specialty of forensic medicine for the needs of the Department of General, Clinical Pathology, Forensic Medicine. and deontology, Department of Forensic Medicine and Deontology at the Varna University of Medical Sciences and the Forensic Medicine Clinic at UMBAL "St. Marina"-Varna.

April, 18. 2023


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(Prof. Dr. Sevdalin Nachev, PhD)