

# OPINION

by Associate Professor Dr. Nikola Georgiev Shopov, MD, PhD

Associate Professor in the Department of Aviation and Marine Medicine  
of the Military Medical Academy – Sofia

**Regarding:** Dissertation on the topic "Floods - health and environmental problems for the Danube region" with author **Dr. Rositsa Vasileva Petrova, MD** doctoral student in an independent form of education for obtaining an educational and scientific degree "Doctor" in professional field 7.1. Medicine, specialty in "Disaster Medicine".

In accordance with the Decision of the meeting of the Faculty Council of the Faculty of Public Health of protocol № 157/16.12.2020 and Order № P-109-594/18.12.2020 of the Rector of the MU "Prof. Dr. Paraskev Stoyanov" - Varna, I have been elected as an external member of the Scientific Jury (SJ) under the procedure for public defense of the dissertation for obtaining an educational and scientific degree "Doctor" with the candidate **Dr. Rositsa Vasileva Petrova, MD**. By protocol № 1/30.12.2020 from a meeting of the SJ I was appointed to prepare an opinion on the procedure.

The documents provided to me by the doctoral student are in compliance with the Law for Development of the Academic Staff of the Republic of Bulgaria (LDASRB) and the Regulations for implementation of the Law for development of academic staff in the Republic of Bulgaria (RILDASRB), as well as with Art. 69 of the Rules for the Development of the Academic Staff at the Medical University –Varna (RDAS-MU-Varna). They meet the requirements of the procedure for obtaining an educational and scientific degree "Doctor". I have no comment or remarks regarding the submitted documents.

The evaluation of the doctoral student and the dissertation is complex and includes the research and practical activity of the doctoral student, as well as the structure, scientific characteristics and scientific-applied results of the dissertation, as well as evaluation of the abstract according to the RDAS-MU-Varna.

## **I. General presentation of the doctoral student**

### ***1. Brief information about the professional path of the candidate***

Dr. Rositsa Petrova was born in the town of Lovech. She graduated in medicine in 1995 at the Medical University - Pleven. Since 1996 he has been working in Svishtov as a doctor in various positions in pre-hospital care, including as head of the occupational medicine service. Since 2016 she has been selected as an assistant in the Department of Hygiene, Medical Ecology, Occupational Diseases and Sector of Disaster Medicine at the MU - Pleven.

### ***2. Scientific development***

Over the years, the doctoral student goes through the following stages of scientific development:

- in 1995 she acquired a Master's degree in medicine;
- in 2009 she obtained the medical specialty "Occupational Medicine";

- in 2020 she acquires the specialty "Emergency Medicine";
- in 2004 she acquired a Master's degree in Economics in the field of Insurance and Social Affairs, Health Management at the "Dimitar Tsenov" Academy in Svishtov.

### ***3. Research and practical activity***

The candidate Dr. Petrova has extensive professional experience as a doctor, who also develops as a lecturer-assistant to students in the medical specialty "Disaster Medicine". In 2017 she completed training in the course "Medical insurance in case of radiation, nuclear accidents and terrorism" at the National Center for Radiobiology and Radiation Protection. In 2020 she improved his professional qualification by conducting an internship in emergency surgery and traumatology at MU - Pleven. She participated in the research project "Study of predictive values of human placental lactogen". She is a member of the Bulgarian Medical Association, the Bulgarian Scientific Society of Public Health and the Bulgarian Public Health Association.

## **II. Characteristics and evaluation of the dissertation**

### ***1. Content and structure of the dissertation***

The dissertation submitted for evaluation on the topic "Floods - health and environmental problems for the Danube region" by Dr. Rositsa Vasileva Petrova is structured in 168 pages as follows:

- Introduction - 2 pages;
- Literary review - 35 pages;
- Purpose, tasks and hypotheses - 1 page;
- Materials and methods - 5 pages;
- Own research - 98 pages;
- General conclusions - 1 page;
- Contributions - 2 pages;
- Bibliography - 11 pages;
- Applications - 7 pages.

The theses in the dissertation are supported by 10 tables and 44 figures, and the materials are illustrated with 3 diagrams and 7 maps.

The bibliographic reference includes 200 literary sources, of which 119 are in Cyrillic (28 of them in Russian) and 81 in Latin. 91 of them are from the last 10 years, which speaks of the topicality of the used scientific data and cited studies. The literature review is sufficient in volume. His presentation and cited literature indicate that the author is well acquainted with the problem.

The dissertation work is presented in volume and type, corresponding to the requirements of Art. 27, para. 2 of RILDASRB. It has been prepared in compliance with the requirements for the ratio between the different sections, it is written in clear, scientific language and is grammatically sound.

### ***2. Relevance and need for the development of the dissertation***

The problem developed in the dissertation is extremely relevant. The problems associated with climate change and the fight against emerging natural disasters are a major task for the entire world community. Of all natural disasters, floods are the most common natural disaster. They have a strong negative impact on nature, the environment, the economy, take human



lives, leave psychological, mental trauma and discomfort to survivors. Unfortunately, Bulgaria is not isolated from this alarming trend. On the other hand, there is insufficient information and readiness of the population in our country to combat this natural disaster.

It is these significant problems that have been correctly identified and addressed in Dr. Petrova's dissertation. It emphasizes the need for prior preparation, immediate information, good coordination between the various institutions and readiness of the population for proper behavior in flooded areas, preparedness for self-help and mutual assistance if necessary. The dissertation makes an objective assessment of the risk of floods, which shows that in Bulgaria the necessary results for the protection of the population in case of floods have not been achieved. At the same time, in-depth surveys are being conducted among the population in the Danube region to examine the awareness and level of readiness for proper behavior, protection and first aid of the victims.

### ***3. Evaluation of the dissertation***

The dissertation is distinguished by an academic style of presentation. The content and structure show the very good abilities of the author to formulate, present, summarize and analyze significant scientific information, adapting it to the needs of the goals and objectives of the dissertation. The causal link between the various factors that lead to floods is sought by conducting an in-depth study of important issues that are permanent and require a solution from the defense authorities, the health care system and social assistance.

#### ***3.1. Purpose, tasks and hypotheses***

The scientific aim of the dissertation is to study and analyze the health and environmental problems of the Danube region, as well as the awareness and the degree of readiness of the society for proper behavior and protection in case of floods.

I believe that the identified goal is clearly stated and concerns a significant problem with adverse effects on the population. It and the related tasks are up-to-date and timely, shed light on the problem comprehensively and provide the basis for the selection of precisely selected tasks and methods.

There are 5 main tasks, the solution of which is the basis for the implementation of the set goal. They provide an opportunity to cover all the main aspects of the topic under consideration.

#### ***3.2. Materials and methods***

Material of theoretical research in the dissertation are publications of Bulgarian and foreign authors, results of empirical research, using data from anonymous surveys among the population in the regions of Pleven and Svishtov.

The subject of the research is focused on the preparation for response. Awareness and knowledge for protection and assistance to a flood victim are considered and discussed. The doctoral student skillfully uses various general scientific research methods. An interdisciplinary approach has been applied in the overall research process, which is required by the multifactorial and specific nature of the object and the studied phenomena in the dissertation.

The applied methods and analytical tools are aimed at the implementation of the set scientific tasks. They provide an opportunity to collect the necessary primary information, to analyze and evaluate various aspects of the studied phenomena, and their complex use allows to study the object in its entirety and to achieve the goal of the dissertation.

### ***3.3. Evaluation of the doctoral student's own research***

Undoubtedly, Dr. Petrova's own research has the greatest weight in the dissertation. They are systematized and divided into five groups:

- 1) Flood risk study for Danube areas and risk assessment;
- 2) Study of the basic tasks of the medical services (hospitals) in case of floods, measures and basic means of protection;
- 3) Survey of awareness and readiness for protection of Bulgarian citizens from the Danube region aged 18 to 39. Comparison of the two age groups;
- 4) Study of awareness and readiness for protection of Bulgarian citizens from the Danube region aged 40 to 64;
- 5) Preparation of hospitals from flood and non-flood area for flood actions.

Each of these studies is well structured, indicating the objectives, tasks, relevant discussions and results obtained, and in itself each represents a separate scientific problem. The results are well described, statistically processed, richly illustrated with many figures and tables. This is reason to be convincing. In my opinion, they are largely original and personal work of the doctoral student. The discussions summarize the results obtained, emphasizing the open dependencies, correlations and trends obtained from sociological and statistical data. Each study leads to the definition of specific, well-formulated conclusions.

I consider it especially valuable from a scientific and practical point of view that it is a "Protocol for preparation of a hospital in the flood zone" developed by the doctoral student.

In general, the specific proposals and recommendations made are meaningful, necessary and urgent. Some of them are already being discussed in the media and are the focus of a number of experts in the field of civil protection and disaster management.

### ***3.4. General conclusions and scientific contributions of the dissertation***

In these parts of the dissertation 14 generalized conclusions are made in order to prove the need to recognize, analyze and assess the risk of floods, as well as to identify methods and create an organization for its reduction. It is necessary to conclude that the wider information and better preparation of the public in Bulgaria about the risk of floods and mandatory training of the population for proper actions and first aid, with the assistance of government bodies and public organizations is a cornerstone of prevention of floods.

I accept the presented 5 scientific-theoretical contributions of the dissertation. As well as the formulated 6 scientific-applied ones, as I consider especially valuable the proposals made to GD "Fire safety and protection of the population", the mayors of Pleven and Svishtov and various governmental organizations and media to raise awareness and create good practices for training of population for protection and proper behavior in emergencies and floods.

### **4. Evaluation of the publications on the dissertation**

Dr. Petrova presents 3 real full-text publications that cover the requirements of Art. 61, para. 3 item 4 of the Rules for development of the academic staff of MU - Varna. They are published in not refereed Bulgarian journals with scientific review. The publications are related to the issues of the dissertation or represent a stage in the development of the dissertation.

### **5. Evaluation of the auto-abstract**

I have no remarks on the abstract. He logically follows the development of the dissertation and shows the most characteristic moments of it and the main conclusions and



suggestions. It is developed on 51 pages and is illustrated with figures and diagrams that present the most important statistical results obtained from the doctoral student's own research.

#### **6. Critical remarks and recommendations**

I have no significant remarks and recommendations regarding the dissertation. From the documents presented to me on the procedure I was convinced that the dissertation work, the obtained results and the achieved contributions are the result of independent, purposeful and in-depth research activity of the doctoral student. Upon careful reading of all materials on the procedure, I found no signs of plagiarism or incorrect citation of foreign sources.

#### **III. Conclusion**

The dissertation of Dr. Rositsa Vasileva Petrova is dedicated to a very current scientific and practical problem - the effective fight against the consequences and prevention of floods. The author has sufficient theoretical training and accumulated practical experience to be able to identify, formulate, analyze and synthesize large-scale and multifactorial processes, such as for disasters caused by floods. I believe that she has established herself as an excellent specialist, researcher and lecturer, and has undoubted professional qualities and high academic potential.

The dissertation contains scientific-theoretical and scientific-applied results, which represent a contribution to science and in particular in the field of emergency medicine. Based on the analysis of the complete documentation on the procedure and its compliance with the LDASRB, I have a **"positive"** opinion on the competition and the qualities of the candidate Dr. Rositsa Vasileva Petrova. In this regard:

I propose to the Honored Scientific Jury to award Dr. Petrova a **scientific and educational degree "Doctor"** in the field of higher education 7. Health and Sports, professional field 7.1. Medicine, **specialty "Disaster Medicine"**.

08.02.2021.  
Varna

Prepared the opinion:.....

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