

## REVIEW

by

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**Regarding:** *Competition for the academic position of Associate Professor in the Higher Education area 7. Health and sports, professional field 7.4. Public health and specialty Disaster medicine for the needs of the Department of Disaster Medicine and Marine Medicine at the Medical University Prof. Dr. Paraskev Stoyanov – Varna promulgated in State Gazette, issue 43 /May 31st, 2019*

With Order № P-109-234/26.07.2019 of the Rector of MU Varna I was elected member of the Scientific Council, and under Protocol №1 of the first meeting of the Scientific Council I was assigned to prepare a review following the procedure for the academic position Associate Professor.

In the competition the only candidate is Chief Assistant Professor Nikolina Radkova Radeva, PhD from Department “Disaster Medicine and Marine Medicine”, Faculty of Public Health at the Medical University Prof. Dr. Paraskev Stoyanov – Varna. The candidate presented all the necessary documents, well arranged and in accordance with the requirements of the Development of Academic Staff in the Republic of Bulgaria Act and the Regulations for the development of the academic staff in the Medical University – Varna.

### ***Short biographical data of the applicant***

Chief. Assist. Prof. Nikolina Radkova Radeva was born on 07.07.1983. In 2002 she graduated Fifth Language Gymnasium “Yoan Ekzarch” in Varna with French Language.

In 2007 and 2008 she received sequentially her Bachelor’s degree in Tourism and her Master's degree in Corporate Finance from the University of Economics – Varna, and in 2012 she completed the Health Management Master's Degree of the Medical University Prof. Dr. Paraskev Stoyanov – Varna. From 2016 until now, he specializes in Medical Informatics and Healthcare Management. Since April 2018 she has been a PhD of Disaster Medicine in Medical University – Sofia.

She started her academic career in May 2015, after a winning a competition as Assistant Professor of Disaster Medicine and of August 2018, she was appointed Senior Assistant Professor at Department of Disaster Medicine and Marine Medicine.

Since 2015 she has been appointed as an administrative assistant in the department. In 2019, she was appointed Coordinator of the Academic Center for Maritime Health at the Faculty of Public Health.

Further qualification Chief Assistant Professor Radeva acquires in participation in international projects, scientific conferences and seminars, specialized courses in the country and abroad on the issues of Disaster Medicine, Medical assistance in case of disasters and mass casualty emergencies etc.

The applicant is a member of the Bulgarian Scientific Society for Public Health, the Union of Scientists in Bulgaria – Varna Branch, the Bulgarian Society for Disaster Medicine, the Society of Disabled Persons – Varna, the French Society for Disaster Medicine (La société française de médecine de catastrophe). The applicant has good computer skills and language skills in English, French, Russian and German, which enables her to follow the latest findings and achievements in the field of her scientific work.

### ***Evaluation of research activities***

In current contest, Chief Assist. Prof. Nikolina Radeva participates with a list of 33 scientific papers, 25 of which are in Cyrillic and 8 in Latin. According to the author's participation in the submitted works – 2 are independent, in 8 she is the first author, and she is second and the next author in 23 of them.

According to the type of scientific papers – the monographs and textbooks are 4, the publications in Bulgarian journals are 24, and in collections of scientific reports – 5. Of these, 2 are independent and in 8 she is the first author. She is second and next author in 23 publications. One of the monographs is self-contained. She is co-author in three of them.

There are 24 her publications in Bulgarian scientific journals. The candidate's scientific publications in collections of national and international congresses and symposia are five, which demonstrates her leading role in the process of writing scientific works and her skills to conduct scientific research in teams.

Chief Asst. Prof. Nikolina Radeva submits her general publishing activity as follows:

- Monographs – 2 with a total volume of 228 pages;

- Study guides – 2 with a total volume of 340 pages;
- Referat – 1 with a total volume of 75 pages;
- Articles - 40 with a total volume of 205 pages;
- Reports – 35 with a total volume of 175 pages.

The applicant's scientific output must also include participation in 51 national and international scientific events.

In the academic report presented by the library of the Medical University – Varna, Chief Assist. Prof. Radeva is cited 9 times:

- In monographs and collective volumes with scientific peer review – 1 citation;
- In non-refereed scientific peer-reviewed journals – 8 citations.

All citations have the titles of the publications and the authors who make the citations.

Chief Assist Prof. Radeva participated in the preparation and implementation of national and international projects, as follows:

- Program of EU, „EU Joint Action on Health workforce planning and forecasting – EUHWforce“, European Commission Project.
- Project BG051PO001-3.1.09-0013 „Creating modern system for career development of lecturers in “Prof. Dr. Paraskev Stoyanov” Medical University,” „Human Resources Development “Operational Program.
- Project BG051PO001-3.3.07-0002 „Human Resources Development“, Operational Program.
- „European Scientist`s Night 2014“ Project, „Horizon 2020“ Program.
- Project BG051PO001-3.1.08-0040 „Refining management systems in Medical University – Varna“, „Human Resources Development“ Operational Program.
- Project BG051PO001-3.1.08-0040 „Refining management systems in Medical University – Varna“, „Human Resources Development“ Operational Program.
- „The Rights to Work and Live with Dignity”, Municipality Varna Project.
- „Disasters – difficult for disabled people discrimination to overcome”, Municipality Varna Project.
- „Reliable Help for Disabled People”, Municipality Varna Project.

- „Awareness – an Advocacy and Protective Means and the right to Choose Freely”, Municipality Varna Project.

*Characteristics of the scholarly activity of the candidate*

Nikolina Radeva's scientific work is mainly in the field of Disaster Medicine, structured in several basic areas:

- Analyzes of definitions and basic terms used in disaster medicine and other related disciplines. Classifications. Key features of disaster situations.
- Chemical accidents and consequences for Varna region, causing health and environmental problems.
- Management, Planning and Organization of Population Protection in Disaster Situation.
- Medico-geographic characteristics of ecosystems and impacts – in-depth studies of floods, fires, earthquakes, etc. disaster situations.
- Psychological problems (stress) in emergency situations.
- Surveys on the assessment of the awareness and training of medical staff and the population for disaster situations.
- Studies on groups at risk and specifically for the group of people with disabilities
- Analyzes of the medical consequences of disaster situations and recommendations for improving the health of the population.
- Biological problems of marine water pollution and experiments with experimental animals and other studies.

The protection of the population in case of disasters plays a significant role in the applicant's scientific production. In the monograph “Civil Protection Current Aspects in Disasters” the definitions of the basic terms used in disaster medicine and other related disciplines are assembled and analyzed. Descriptions of Disaster Situations from different authors and databases are presented. There is an analysis of the organizational structure and management of the population protection activity during disasters, which is based on the Disaster Protection Act (as amended) and other regulations. The analysis of the data shows that a number of problems and difficulties arose in the health care system during disaster situations. The ways to overcome them are highlighted. The tasks and activities in mass disasters have been elaborated in detail – triage and decontamination, compared with the opinions of other authors and the experience of many countries.

Another areas in the applicant's scientific publications are the environmental disasters that characterize the Varna Black Sea region. The potential risk of toxic substances in the region of Varna, possible accidents and consequences for the city have been elaborated and presented, and the preparation for the provision of post-accident medical assistance for workers has been studied.

Chief Assist. Prof. Radeva also studied fires, floods, earthquakes, chemical accidents and their consequences for the Varna region.

Psychological problems (stress) in distress situations are the other major area of the applicant scientific work. The applicant dissertation with the topic "Prevention of stress as a significant problem for groups at risk in disaster situations" is in this area. The risks of disaster situations for groups at risk in the territory of Bulgaria (and in particular the North-Eastern Region) are identified. Two studies have been carried out on stress at groups at risk – people with disabilities until December 2010, before the amendment to the Civil Protection Disaster Protection Act, and then in the period 2016-2017. The preparation of people disabled for disaster situations has been studied. Training strategies for prevention and stress management of groups at risk in disaster situations have been prepared. Relevant recommendations have been made to provide effective assistance and support to risk groups during disasters, and guidance has been given to optimize disaster management and planning activities with emphasis on disability.

The level of stress and effects – somatic and psycho-emotional in a social group are also researched. A study was conducted in students – 160 people from Medical University – Varna to determine the level of stress and the main conclusion is that serious stress happens even in young people.

The level of stress and effects on certain behavioral attitudes in a social group were also studied, as well as the manifestations of stress in the elderly.

Chief Assist. Prof. Nikolina Radeva participated also in experimental studies with experimental animals and presented the results of the experiment:

1. Distribution of Rubidium 86 and Methionine 75 Selenium in the organs of rats after physical tension and treatment with protein hydrolysate and vitamin C

The results revealed: Physical tension impairs the blood flow and reduces the accumulation of Methionine 75 Selenium, while the treatment with hydrolysate and vitamin C has a positive effect on almost all organs.

### *Scientific contributions*

The scientific contributions of Senior Assistant Professor Radeva could be summarized in the following main areas:

#### **Applied scientific:**

- Identification and assessment of global and national disaster risk with focus on the Northeast Planning Region in the Republic of Bulgaria for the period 1900-2017.
- An algorithm for detailed disaster risk assessment has been developed.
- Study of the stress effects on groups at risk - people with disabilities before and after the change in the Disaster Protection Law, namely the formation of the Directorate-General for Fire Safety and Population Protection.
- The preparation of people with disabilities for disasters has been researched.
- Training strategies for the prevention and management of stress of groups at risk in emergency situations have been developed.
- Recommendations have been made to optimize disaster relief planning and management activities with a focus on groups at risk.

#### **Scientific-theoretical:**

- For the first time in Bulgaria a Handbook on Self-aid and Mutual Assistance in Emergencies for Disabled has been developed and disseminated.
- For the first time in Bulgaria a leaflet has been developed and distributed to prepare people with disabilities in case of disasters.
- A questionnaire was developed to monitor the groups at risk of stress and 400 adults with disabilities were interviewed with 90% reduced working capacity from the North-East Planning Region in the Republic of Bulgaria.
- A questionnaire has been developed to study the preparation of people with disabilities for disasters and 200 adults with disabilities with 90% reduced working capacity, using aids from the city of Varna, were interviewed.
- Protection, self-aid and mutual assistance packages for groups at risk in different types of disasters have been developed to prevent stress in traumatism: Bandage package (for wounds and traumas); A package for radiation defense (in case of radiation breakdown), containing modern proven and approved means for radiation defense – against damaging actors of ionizing

radiation; Family hygiene-anti epidemiological package (at home and in the office) in case of epidemiologic danger; Package in case of chemical breakdown (at home and in the office).

In summary, it can be concluded that scientific works, as a whole, contain scientific-applied, scientific-theoretical and scientific-educational contributions to Disaster Medicine and the scientific contribution of Chief Assist. Prof. Radeva cover the qualitative and quantitative criteria and meet the requirements for an occupation of Associate Professor at the Medical University - Varna.

### ***Educational activity***

Senior Assistant Professor Radeva has 4 years of teaching experience in “Disaster Medicine” course unit. She has successfully participated in the conduction of lectures and exercises with students from different specialties in Bulgarian and English in the following disciplines:

- “Disaster Medicine”;
- “Health provision in disaster situations”;
- “Disaster and emergency preparedness”;
- “Preparation for terrorist attack and counterterrorism”;
- “Health provision in disasters and mass casualty crises”.

### ***Compliance with the requirements of the Medical University – Varna for the academic position "Associate Professor"***

The report showed that Senior Assistant Professor Radeva fully covers, and for a certain group of indicators exceeds the requirements of the Regulations for development of academic staff in the Medical University – Varna for the academic position "Associate Professor".

### ***Personal impressions***

I have known Chief Asst. Prof. Hikolina Radeva for more than 5 years. We have worked together on some of the projects of MU Varna and I know her as innovative, inquisitive and organized. I have witnessed her advancement both as a scientist and as an educator. Being a real professional, Chief Asst. Radeva attempts to optimize the practice of specialists involved in disaster and emergencies prevention and protection of the population in her research. Most of her interesting studies search for solutions for putting them into practice and help different

groups of the population to react adequately in case of emergency or disaster.

All the submitted documents for the competition prove that her continuing training at prestigious educational institutions either in Bulgaria or abroad has affected her innovative thinking. I highly appreciate her working capacity and readiness for work as well as her skills to take decisions.

Radeva is well-intentioned to colleagues and students, helpful and polite, she is a respected colleague and professional.

### **CONCLUSION**

Chief Assist. Prof. Nikolina Radeva combines pedagogic and scientific work. She is a correct researcher with serious scientific interests and significant scientific and empirical contributions. Her predicative thinking, excellent communicative skills and ability to work in a team stand out. Chief Assist. Prof. Nikolina Radeva, PhD is the only candidate in the competition for the academic position of Associate Professor in the Higher Education area 7. Health and sports, professional field 7.4. Public health and specialty Disaster medicine for the needs of the Department of Disaster Medicine and Marine Medicine at the Medical University Prof. Dr. Paraskev Stoyanov – Varna. Based on the positive vote and in view of the above mentioned and in accordance with the criteria of the Development of Academic Staff in the Republic of Bulgaria Act and the Regulations for the development of the academic staff in the Medical University – Varna, I strongly encourage the members of the honorable Scientific Council to appoint Chief Assist. Prof. Nikolina Radeva, PhD, to the position of Assistant Professor, for the needs of the Department of Disaster Medicine and Marine Medicine at the Medical University Prof. Dr. Paraskev Stoyanov – Varna.

**Reviewer: /signed/**

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