

## STATEMENT

**Assos. Prof. Dr. Desislava Nikolaeva Koleva-Georgieva MD, PhD, FEBO**

**Department of Eye Diseases, Faculty of Medicine,**

**Medical university Plovdiv**

Member of the scientific council, included by order № P-109-1/05.01.2023r. of Rector of Medical university Varna „Prof. Dr. Paraskev Stoyanov”.

**About:** Dissertation for the award of the educational and scientific degree "Doctor" in the field of higher education 7. Health care and sports, professional direction 7.1. Medicine, and in the scientific specialty "Ophthalmology", code 03.01.36.

**Topic: "Live microstructural analysis of rare eye diseases with modern technologies"**

**Author:** Dr. Maria Rumenova Boyadzhieva, PhD student at the Department of Eye Diseases and Visual Sciences of the Faculty of Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

**Scientific supervisor: Corresponding member Prof. Dr. Hristina Nikolova Grupcheva, MD, FEBO, FICO(Hon), FBCLA, FIACLE, Head of the Department of Eye Diseases and Vision Sciences, Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.**

With the decision of the Academic Council of the University of Varna and the order of the Rector with № P-109-1/ 05.01.2023r. and Protocol No. № 40/29.10.2018r., I was appointed to prepare opinion on the procedure for acquiring the educational and scientific degree "Doctor" in the scientific specialty Ophthalmology of the candidate Maria Rumenova Boyadzhieva MD at the Medical University - Varna.

### **Biographical data about the doctoral student:**

Dr. Maria Boyadzhieva was born on 30.12.1983. in Sofia. She finished his secondary education in 2002. in science and mathematics high school "Acad. Sergey P. Korolyov" Blagoevgrad, majoring in biology and English. In the period 2003-2009, he studied medicine at the Varna Medical University "Prof. Dr. Paraskev Stoyanov". Since 2009 worked in Emergency medical care and Emergency department, and a year later became part of the team of Intensive Respiratory Department of "St. Marina" Hospital - Varna (today - Department for Invasive Treatment and Non-Invasive Ventilation - OILNV). In 2016 began to specialize in ophthalmology at the Specialized Hospital for Eye Diseases for Active Treatment-Varna Ltd. (SBOBAL-Varna). Since 2017, she has been working as a part-time assistant at the Department of Ophthalmology and Vision Sciences, and since 2018, after passing a competitive exam, she has been appointed

as an assistant at the aforementioned department. In the same year, she was enrolled as a full-time doctoral student at the Medical University - Varna. In 2020, he acquired a specialty in ophthalmology. Dr. Boyadzhieva continuously improves her qualifications by annually attending scientific meetings and conferences in the country and abroad. Participated in many courses and specializations, among which: Orthokeratology Course - Paris (2019), Summer School in Linköping under the guidance of Prof. Nil Lagali (2017) and numerous trainings in Bulgaria. There are over 17 scientific publications in national and international journals, of which 3 are related to the dissertation work, and 19 citations. He is part of the author team of a textbook on eye diseases, edited by Prof. Dr. Hristina Grupcheva, MD. FEBO, FICO(Hon), FBCLA,FIACLE. Her professional interests are in the field of diseases of the anterior segment of the eye.

#### **Characterization and evaluation of the dissertation:**

The structure of the dissertation is in accordance with modern standards and requirements. The dissertation is written on 157 standard pages and illustrated with 14 tables and 46 figures. The paper includes the following sections: Contents – 1 page, Introduction – 3 pages, Abbreviations used – 1 page, Summary – 3 pages, Abstract – 3 pages, List of figures and tables – 5 pages, Literature review – 36 p., Aim, tasks and hypotheses- 1 p., Materials and methods- 31 p. Results- 38 p., Discussion- 7 p., Conclusion- 1 p., Conclusions- 2 p., Contributions- 1 p., List of publications - 1 page. Bibliography - 8 pages, Appendix - 14 pages.

The literature reference includes 142 literary sources (125 in Latin and 17 in Cyrillic), of which 68 were published after 2017.

The scientific work of the PhD student Dr. Boyadzhieva is properly structured in terms of sequence and volume of the sections.

The exposition is presented clearly and in a good scientific style.

#### **Relevance of the subject:**

Rare diseases are a public health burden due to the severity of their manifestations and the total number of people they affect. In Europe, rare eye diseases are the leading cause of vision loss among children and young people. Unfortunately, these diseases affect not only vision, but also a person's well-being, his opportunities for education and employment. In modern medicine, the focus is not only on the treatment of individual nosological entities, but also on increasing the quality of life of patients. All these factors indicate that a better and modern understanding of the problem is extremely important, which makes the work of Dr. Maria Boyadzhieva extremely relevant and timely.

**The literature review** consists of a summary of the prevalence and incidence of rare diseases, sources of information and data on rare diseases, clinical picture of rare diseases, diagnosis, treatment and prevention of rare diseases and rare eye diseases.

The aim of the dissertation work is to follow the path of patients with rare eye diseases, to evaluate the registration regime, to include eye diseases in the national register for rare diseases and to create a model for a clinical register for the benefit of daily ophthalmological practice, for which purpose 6 tasks, namely:

1. Overview of the European rules and registration regimes for rare diseases and rare eye diseases. Review of the National Rare Disease Registry.
2. Assessment of knowledge about rare diseases among ophthalmologists.
3. Creation of a model for registration of a rare eye disease - Aniridia.
4. Clinical evaluation of rare eye diseases according to the Orphanet classification.
5. Creation of a model for a publicly available national register for rare eye diseases in Bulgaria.
6. Development of a plan to create an expert center for rare eye diseases in Bulgaria.

In the course of the research, covering a 5-year period from 2017 to 10.2022, an in-depth study of the published literature and publicly available data on rare diseases, including rare eye diseases, as well as follow-up of patients with rare eye diseases was carried out. Criteria for inclusion and exclusion from the study have been determined, and the methodology includes a documentary method, a survey method, modeling and clinical research - clinical methods for evaluating rare eye diseases.

The results of the scientific work are clearly presented and follow the order of the set tasks. They are originals and are the result of the PhD student's own research work. They are clearly described and well illustrated with tables and figures. They show that the majority of participants meet patients with rare eye diseases, with 52.63% indicating that they meet a patient with a rare eye disease monthly, 39.47% - 1-3 times a year and only 2.64% - do not meet such patients in their practice, with more than half of the participants indicating that they do not treat and refer patients with rare eye diseases. 7.9% added the answer "yes and no", and 39.47% indicated that they treat rare eye diseases. The analysis of the questionnaires prepared in the present reading regarding the awareness of rare eye diseases of specialists and specialists in eye diseases, shows an almost unanimous positive response of the participants for the need to create a registry for rare eye diseases - 97.44% answer "Yes" to the question "Is there a need for a registry of rare eye diseases in Bulgaria?", confirming the relevance and significance of the present scientific work.

The discussion is well precisely and clearly structured and articulated, highlighting the importance of rare eye diseases as a global problem, the lack of specific health policies and the lack of expertise in the field at the global level, leading to additional physical and psychological suffering for patients and their families. The benefits of building a center of expertise for rare eye diseases, which would help the individual patient, the respective affected family to receive up-to-date and accurate information about the disease itself and the treatment options, are discussed.

**The conclusions** follow the logically presented results and correspond to the set goal and tasks. The scientific work ends with 10 well-structured conclusions, the most important of which include:

1. The study confirms the need to create an expert reference center for rare eye diseases.
2. Based on the conducted in-depth and analytical analysis of the data, the need to include more rare eye diseases in the National List of Rare Diseases has been proven.
3. The analysis of the European rules and registration regimes for rare diseases and rare eye diseases proved the need to build a new national program for rare diseases, supporting the National Register of patients with rare diseases and updating Regulation No. 16 of 2014. of the Ministry of Health in line with European legislation.
4. On the basis of the present study, it has been proven that the creation of an up-to-date, accessible and functional registry for rare eye diseases is not only possible, but can represent a step forward in epidemiological and clinical studies in this field - the lack of reliable epidemiological and clinical data , generated in local conditions, is a significant obstacle to effective planning and management of health care costs for any country, including Bulgaria.
5. The study confirms the need for the participation of Bulgaria and a Bulgarian expert center for eye diseases in the European reference networks for improving the care and diagnosis of rare eye diseases.
6. It is necessary to update the standard on "Medical genetics", Ordinance No. 26 of the Ministry of Health and the diagnostic algorithms and indications for conducting genetic and genomic research
7. The results of the analysis of the questionnaires confirm the need to increase awareness of rare eye diseases among the population and medical specialists.

#### **Contributions of scientific work:**

In the self-assessment, the contributions are divided into 3 groups – contributions of a cognitive nature (4), contributions of a scientific-applied nature (4) and contributions of a confirmatory nature (2). The contributions that highlight the work developed by Dr. Boyadzhieva have not been studied so far in Bulgaria and are the first initiative to improve the management of patients with rare eye diseases in the country, by promoting the creation of a registry for rare eye diseases, the creation of an expert center and model of a rare eye disease for inclusion in the list of rare diseases of the Republic of Bulgaria. An important scientific and applied contribution is the main conclusion and development of a system for registering rare eye diseases in Bulgaria and creating an expert council.

#### **Featured Posts:**

In connection with her dissertation work, Dr. Maria Boyadjieva presents 3 publications in scientific publications, 2 of which are in international scientific publications and 1 participation in a scientific forum.

#### **Conclusion:**


The dissertation work "Live Microstructural Analysis of Rare Eye Diseases with Modern Technologies" by Dr. Maria Rumenoa Boyadzhieva is a current and original scientific development and is the doctoral student's own contribution to ophthalmology in Bulgaria. It meets

all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB), the Regulations for the Implementation of the ZRASRB and the Regulations of the Medical University - Varna. With his presentation, the doctoral student demonstrates knowledge, a didactic approach, analytical skills and the ability to formulate conclusions.

This gives me the reason to vote positively and to propose to the respected Scientific Jury to start the procedure for awarding the ONS "Doctor" in the field of higher education 7. Health care and sports, professional direction 7.1. Medicine, and in the scientific specialty "Ophthalmology" of Dr. Maria Rumenoova Boyadzhieva.

Date: 05.06.2023

Plovdiv

Prepared the statement:  .....

/Assoc. Prof. Dr. Desislava N. Koleva-Georgieva, MD, PhD, FEBO/