

OPINION

by **Prof. dr. Snezhana Murgova, MD, PhD**

Head of the Department of Eye Diseases, ENT Diseases and Maxillo-facial surgery at the Medical University of Pleven, external member of the scientific jury, appointed by order No. R-109-170/28.04.2026 of the Rector of MU-Varna, on the basis of the Act for the Development of the Academic Staff in the Republic of Bulgaria (ADASRB) and the Regulations for its implementation, as well as the Regulations on the conditions and procedure for acquiring scientific degrees and occupying academic positions at MU - Varna

Regarding

Dissertation for the award of the educational and scientific degree "Doctor" in the field of higher education 7. Health and Sports, professional field 7.1. Medicine, under the doctoral program "Ophthalmology" of **Dr. Mariya Stoeva Stoeva-Milanova**, a full-time doctoral student, on the topic "**Control of myopia**", with scientific supervisor Cor. Mem Prof. Dr. Christina Nikolova Grupcheva, MD, FEBO, FICO (Hon), FBCLA, FIACLE

Biographical data: Dr. Maria Stoeva Stoeva-Milanova graduated from the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna in 2002. She obtained her specialization in "Ophthalmology" in 2016. Since 2018, she has been a lecturer at the Department of Optometry and Occupational Diseases, Faculty of Public Health, Medical University - Varna, and since 2019 she has been working as an ophthalmologist at USBOBAL - Varna. In 2019, Dr. Stoeva was enrolled in full-time doctoral studies.

Relevance of the problem: The increasing incidence of myopia worldwide, its association with various eye complications and even potential disability, as well as the shift in the age of onset to younger age groups, turns this ametropia into a socially significant problem, and makes the topic of the dissertation relevant. The increasingly early onset of myopia is a risk factor for its progression and potential eye complications, which necessitates the need to conduct studies related to its control. Along with the impact on individual health, myopia also leads to serious social and economic consequences. The costs associated with treatment, the elevated risk of visual impairment and the increasing financial burden on health systems make research aimed at the control of myopia a particularly significant and pertinent area.

Structure of the dissertation: The dissertation submitted to me for opinion is 225 pages long, contains 34 tables and 49 figures. It consists of 5 chapters, corresponding to the aim and set tasks.

Literature review: The presented literature review is thorough and well-structured, supported by appropriately adapted tables and figures. The pathophysiology and epidemiology of myopia, the risk factors for its occurrence and progression, as well as modern methods of control and their application worldwide have been analyzed in detail. Attention has also been paid to the latest trends in this field. Three main conclusions have been formulated, reasoning the need for conducting an in-depth study, which is the basis of this dissertation work.

Aim and tasks: The aim is clearly formulated - a prospective study and analysis of the demographic characteristics and degree of myopia, as well as an assessment of the clinical efficacy of the applied methods for control of myopia.

To achieve the stated aim, 6 tasks have been set.

Material and methods: The study was conducted on the territory of the University Specialized Hospital for Eye Diseases for Active Treatment, USHEDAT - Varna over the period between 2020–2025 and included 92 patients, distributed into homogeneous groups according to predefined criteria. Modern documentary, sociological and clinical research methods were used. The gathered data was processed with appropriate statistical methods, guaranteeing the reliability of the results.

Results: All tasks were completed, and the results were presented in detail and well illustrated in tabular and graphical form. Patients were distributed into four therapeutic groups, balanced by gender and degree of myopia, which ensures reliability and statistical validity of the analysis. In terms of the spherical equivalent (SE), 78% of the participants had low-grade myopia, and nearly 82% had astigmatism, with mean values of SE -4.27 D and Cyl -0.82 D. A predominance of the female gender was established, as well as in the group of patients spending between 3 and 6 hours a day working at close distance range and between 1 and 3 hours outdoors. A familial burden of myopia was found in 56 of the studied subjects, with 31 having both parents with myopic refraction. Higher quality of life indicators were reported in the patient groups using multifocal contact lenses and Ortho-K lenses. Participants with myopia above -6.00 D demonstrated higher levels of anxiety and lower visual quality compared to the other groups. The lowest progression rates of axial length (AL) was observed in patients with Ortho-K lenses and on

atropine therapy, while the highest progression was noted in the control group with glasses ($p < 0.001$). The Ortho-K lens group displayed a statistically significant lowest progression of both AL and SE, followed by the atropine therapy group, especially compared to patients using soft contact lenses and glasses.

There was a trend towards AL increase, more pronounced after the first year of application of the respective method for myopia control, as well as an expected deepening of negative SE values with progressive myopia. Faster progression of SE and AL was found in patients between the ages of 8 and 12 years, as well as in females. The main risk factors for myopia progression are found to be female gender, presence of two parents with myopic refraction, annual progression of SE ≤ 1.00 D, early age of onset ≤ 13 years, and SE values ≤ -6.00 D. The analysis of the questionnaires allows for additional assessment of quality of life, visual comfort, and anxiety levels in patients with myopia.

Discussion and conclusions: The discussion chapter presents a consistent and in-depth analysis of the obtained results, and their significance is asserted through a comparison with data from the international scientific literature. The conclusions are clearly formulated and follow the logical sequence of the attained results.

Contributions: The contributions of the dissertation are clearly formulated in a cognitive, scientifically applied and practical aspect. A thorough analysis of the current scientific literature related to the epidemiology, mechanisms of progression and modern methods for myopia control in children and adolescents has been carried out. Of particular value is the assessment of the effectiveness of the various approaches to myopia control, including their impact on the quality of life, subjective symptoms and the progression of the spherical equivalent and axial length.

In connection to the dissertation, Dr. Stoeva-Milanova presents two publications.

The abstract is structured in accordance with the requirements, and its content corresponds to the dissertation.

Conclusion

The dissertation work of Dr. Stoeva-Milanova is original. The work clearly demonstrates in-depth knowledge, serious scientific research labour and a professional approach to the issue under consideration. The aim of this study as well as the set tasks related to it have been fulfilled. The work is structured in accordance with the Act for the Development of the Academic Staff in the Republic of Bulgaria and the criteria for acquiring the educational and scientific degree "doctor",

specified in the Regulations of the Medical University of Varna. The relevance of the topic, the volume and quality of the conducted research, as well as the achieved results and contributions have give me reason to grand my **positive assessment** of the dissertation work of Dr. Maria Stoeva-Milanova on the topic "Control of myopia" and to recommend to the esteemed members of the Scientific Jury to vote positively for awarding the scientific and educational degree "doctor" to Dr. Maria Stoeva Stoeva-Milanova in the scientific specialty "Ophthalmology".

Pleven

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