

To the Chairman of the Scientific Committee,
appointed by Order № P-109-232/20.05.2025
of the Rector of the Medical University

“Prof. Dr. P. Stoyanov”, Varna

REVIEW

by Prof. Petar Hristov Petrov, MD, DSc
Medical University – Plovdiv

regarding the doctoral dissertation of **Dr. Darina Alexieva Davidova** for the acquisition of the educational and scientific degree "Doctor" in the scientific specialty Obstetrics and Gynecology on the topic:

“TREATMENT WITH CO₂ LASER IN UROGYNECOLOGICAL CONDITIONS” within the field of higher education 7. Healthcare and Sports, in the professional field 7.1 Medicine, specialty Obstetrics and Gynecology.

Dr. Darina Alexieva Davidova is a specialist in obstetrics and gynecology with over 10 years of professional experience in clinical and outpatient gynecology, teaching, and scientific work. She was born on 17.09.1988 in the town of Krumovgrad and currently lives and works in the city of Burgas. She completed

her Master's degree in Medicine at the Medical University – Plovdiv (2007–2013), after which she obtained a specialization in Obstetrics and Gynecology (2014–2018) at the same university. In 2019–2020, she enhanced her qualifications with a second Master's degree in Health Management at the Higher School of Agribusiness and Regional Development – Plovdiv.

Her professional path includes positions at Pazardzhik General Hospital, University Hospital "Deva Maria" – Burgas, and SMC "New Life" – Burgas, where she is currently practicing as an obstetrician-gynecologist. Since 2021, she has also been an assistant at the "Prof. Dr. Asen Zlatarov" University – Burgas, where she teaches courses in obstetrics and gynecology.

Her research interests focus on innovative technologies in gynecology, particularly the treatment of urogynecological conditions using the CO₂ laser. The topic of her dissertation is **“Treatment with CO₂ Laser in Urogynecological Conditions,”** with numerous published scientific articles on the subject, including in the *Black Sea Journal of Medicine and Public Health* and *Medical Review*. Her research also includes topics such as stress urinary incontinence, polycystic ovarian syndrome, infertility prevention, and the consequences of cesarean section.

Dr. Davidova has completed specialized courses in colposcopy, hysteroscopy (Level I), ultrasound in obstetrics and gynecology (Level I), and is qualified in the use of CO₂ laser in gynecological practice.

She actively participates in many national medical forums and conferences, including the National Conference on Innovations in Obstetrics and Gynecology, the National Conference on Public Health, the Autumn Medical Forum, and the National Midwifery Conference. She has presented reports on laser treatment, the early postoperative period, assisted reproduction, and the risks associated with cesarean section.

Dissertation Structure

The dissertation submitted for review by Dr. Darina Alexieva Davidova is written in standard academic Bulgarian and comprises 147 pages, including 86 figures, 1 table, and 3 survey questionnaires. A total of 202 literature sources are cited—9 by Bulgarian authors and 193 by foreign authors. The work is properly formatted and meets the requirements of a scientific paper.

Relevance of the Topic

In her dissertation, Dr. Davidova addresses a problem of high relevance and importance in modern gynecology. Urogynecological conditions, especially stress urinary incontinence (SUI), represent a significant challenge to women's quality of life, affecting their physical, emotional, and social well-being. Despite its widespread occurrence, many women remain undiagnosed or insufficiently treated due to shame, low awareness, or fear of invasive procedures.

In this context, the application of the CO₂ laser as a minimally invasive, safe, and effective method for treating SUI offers an innovative therapeutic alternative with proven positive effects on urethrovaginal tissue and symptoms. The present study underscores the need to integrate new technologies into contemporary gynecological practice and contributes to the development of personalized, patient-friendly approaches to treating chronic urogynecological conditions.

Evaluation of the Literature Review

The literature review related to the dissertation topic spans 53 pages. The doctoral candidate demonstrates a clear effort to identify, summarize, and analyze the most significant data and aspects accumulated over the years. Both Bulgarian and international authors are cited in sufficient numbers.

The review is structured logically and professionally and holds considerable academic value.

Objectives and Tasks

The aim of the dissertation is clearly defined and justified by the literature overview. Its realization is grounded in 8 specific tasks. I believe both the goal and the individual tasks are realistically and precisely formulated.

Evaluation of the “Materials and Methods” Chapter

This chapter covers 3 pages. The clinical study involves 107 female patients. The methods used in this research are deemed appropriate, modern, and scientifically justified, providing a reliable foundation for analyzing the therapeutic effectiveness of the CO₂ laser in the treatment of stress urinary incontinence and other urogynecological conditions in clinical practice.

A wide range of modern statistical methods was applied to process the results and evidence. I find the methodological approach and statistical tools used by the doctoral candidate to be appropriate and logically applied, ensuring the reliability of the presented results.

Personal Results and Discussion

The results obtained from the implementation of the tasks are presented across 82 pages in 5 sections. The candidate presents her own results in several well-illustrated sections. The discussion of the results is provided for each chapter in a well-reasoned and comparative manner, and the author offers her own views on the discussed topics. This is original, considering the lack of similar studies on the topic in Bulgaria.

Conclusions

Eleven conclusions have been drawn—exceeding the number of set tasks—due to the complexity and specificity of the topic, which I consider justified.

Contributions

The contributions are optimal in number—five original and five confirmatory. They reflect the candidate's achievements in both theoretical and applied aspects and are substantive.

Scientific Publications

Dr. Davidova has a sufficient number of relevant and quality publications related to her dissertation—three scientific articles and three conference presentations, all as first author.

Final Conclusion

The dissertation submitted by Dr. Darina Davidova represents an in-depth scientific study of the issues related to CO₂ laser treatment in urogynecological conditions. It thoroughly examines the advantages and limitations of the therapeutic methods used. The work addresses a current and significant problem in urogynecology. The research is original and contributes to the field.

The analysis of the scientific development and data confirms that the work meets the scientometric criteria recommended by the Medical University “Prof. Dr. Paraskev Stoyanov” – Varna for a dissertation defense.

Dr. Darina Davidova is a young researcher and specialist with the necessary qualifications, deep theoretical and methodological knowledge, original scientific approaches, and excellent organizational skills. I believe that the results of her research will be recognized by the Bulgarian scientific community.

With this opinion, I express my strong conviction that Dr. Darina Davidova's dissertation fully meets the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the related regulations, as well as the requirements of the Rules for Academic Development at the Medical University “Prof. Dr. Paraskev Stoyanov” – Varna.

I recommend that the esteemed members of the extended departmental council vote positively for the defense of the dissertation of Dr. Darina Alexieva Davidova and that she be awarded the educational and scientific degree of Doctor.

Заличено на основание чл. 5,
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