

Opinion on educational science degree "Doctor"

OPINION

by Assoc. Prof. Dr. Elka Nikolaeva Radeva, PhD

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External member of the scientific jury for Medical University – Varna

(Decree No. P-109-153/13.03.2025 of the Rector of Medical University - Varna)

on the doctoral dissertation for the award of the educational and scientific degree of "Doctor"

Professional field: 7.2 Dental medicine

Doctoral program: Therapeutic Dental Medicine

Author: Dr. Maryana Rosenova Kirova

Form of doctoral studies: full-time

Department: Conservative Dentistry and Oral Pathology, Faculty of Dental Medicine, Medical University – Varna

Topic: "Assessment of changes in hard dental tissues in patients with bulimia"

Scientific supervisor: Assoc. Prof. Dr. Tsvetelina Borisova-Papancheva, PhD

Faculty of Dental Medicine, Medical University - Varna

1. General presentation of the procedure and the doctoral student

Dr. Maryana Rosenova Kirova graduated as a Master of Dental Medicine in 2019. Since 2019, she has been a full time assistant at the Department of Conservative Dentistry and Oral Pathology, Faculty of Dental Medicine - Varna. From 2020 to 2023, she specialized in "Operative Dentistry and Endodontics," receiving her specialization diploma on June 1, 2024

On December 3, 2021, Dr. Kirova enrolled as a full-time doctoral student in the doctoral program "Therapeutic Dental Medicine" at the Department of Conservative Dentistry and Oral Pathology, Faculty of Dental Medicine - Varna, for a period of 3 years, under the decree No. P-109-539/03.12.2021 of the Rector of Medical University - Varna, and was withdrawn with decree No. P-109-153/13.03.2025.

The doctoral student has submitted electronic copies of 3 full-text publications (only reviews) related to the dissertation.

Structure of the dissertation: The dissertation is presented in 170 pages contains 6 appendices, 57 figures and 35 tables.

The structure of the dissertation includes: introduction - 1 page, literature review – 50 pages, aim and objectives - 1 page, materials and methods - 13 pages, results and discussion presented together for each task - 141 pages, conclusions - 1 page, contributions - 1 page, bibliography - 19 pages, publications and scientific presentations related to the dissertation - 1 page, appendices - 6 pages.

2. Relevance of the dissertation topic

The presented dissertation examines the current problem related to the study of the condition of hard dental tissues in eating disorders such as Bulimia nervosa. The study of dental erosion and hypersensitivity due to this condition contributes to developing existing scientific knowledge and practice.

3. Understanding the problem

The literature review covers 50 pages, presented by chapters and related to future own research. It is based on 299 literature sources, with 18 in Cyrillic and 281 in Latin script (56% from the last 10 years).

The literature review analyzes the main characteristics of eating disorders, prevalence rates, age groups, and gender. The clinical picture in patients with Bulimia nervosa is presented, including various mechanisms of acid erosion affecting enamel and dentin.

Different classifications of dental erosion and systems for assessing tooth wear, dental hypersensitivity, and caries in patients with Bulimia nervosa are discussed. The role of saliva as a diagnostic indicator, changes in parotid gland volume, and various methods for treating dental erosion and hypersensitivity are analyzed.

The literature review concludes with a summary of unresolved issues related to studying the impact of the eating disorder Bulimia nervosa on hard dental tissues.

The analysis of the literature review demonstrates a deep understanding of the problem by the doctoral candidate.

4. Research methodology

Based on the analysis from the literature review, the aim of the dissertation is formulated, namely: to analyze the relationship between Bulimia nervosa and deteriorated oral health, due to the role of self-induced vomiting as a leading risk factor, to investigate clinically oral complications resulting from the condition.

Only diagnostic clinical methods have been used.

In Task 1 (a total of 60 patients, 30 with Bulimia nervosa and 30 in the control group without Bulimia), the qualities of saliva (Saliva Check Buffer Kit (GC America)) were analyzed in patients with Bulimia nervosa, including stimulated and unstimulated saliva, quantity, viscosity, pH of saliva, and buffering capacity (GC Saliva Test Buffer), compared to the indicators of the control group.

In Task 2, changes in dental status in patients with Bulimia were identified.

In sub-task 2.1, primary and secondary carious lesions, restored teeth, and their localization were identified. A visual-tactile method using a mirror and probe under good lighting was used. The DMFT index was the main index for assessing caries, to study the spread of carious lesions.

In sub-task 2.2, the clinical picture of erosive defects of hard dental tissues was examined, evaluating their localization and dimensions. The BEWE index (Basic Erosive Wear Examination) was used, where severity of dental erosion is recorded from 0 to 4, depending on the amount of affected hard dental tissues.

Task 3 investigated dentin hypersensitivity in patients with Bulimia nervosa (30 patients). Two methods were used: tactile stimulus using a dental probe and cold stimulus using an air stream from the dental unit.

The materials and methods selected in the dissertation correspond to the set tasks for achieving the aim.

Appropriate **statistical methods** were used for data processing.

The studies were conducted in Clinical Halls for "Conservative Dentistry and Oral Pathology" at the Faculty of Dental Medicine, Varna, and the University Dental Medical Center at the Faculty of Dental Medicine, Varna.

The results are well illustrated with 54 figures and 35 tables. They are also discussed in comparison with other similar studies.

Conclusions - 13 conclusions are presented, correlating with the set tasks.

Based on their own research, a protocol for the prevention and treatment of oral complications resulting from Bulimia nervosa has been presented.

5. Characteristics and assessment of the dissertation and contributions

The current dissertation research has investigated changes in hard dental tissues in patients with Bulimia.

A comparative assessment has been made of certain clinically measurable parameters of saliva in patients suffering from Bulimia nervosa, compared to a control group of healthy patients. It has been found that patients with Bulimia nervosa are significantly more affected by reduced salivary secretion compared to the healthy control group.

It has been found that patients with Bulimia have lower pH values, making them more predisposed to maintaining an acidic oral environment and associated risks, while most healthy patients in the control group maintain normal pH values.

More than half of the studied patients with Bulimia nervosa show very low buffering capacity of saliva, greatly reducing saliva's ability to neutralize acids and maintain normal pH values in the oral cavity.

Higher levels of DMFT and DMFS have been established in patients with Bulimia.

The presence of a direct link between dentin hypersensitivity and dental erosions in patients with Bulimia nervosa has been proven. The degree of hypersensitivity was assessed using VAS. Some of the most common provocateurs of hypersensitivity, namely cold thermal stimuli and mechanical irritants, were used.

Based on the overall development, 5 contributions of an original nature, 4 contributions of a confirming nature, and one contribution of an applied nature have been formulated.

6. Assessment of publications and personal contribution of the doctoral student

Copies of 3 scientific publications related to the dissertation have been presented in Bulgarian journals. The doctoral candidate is the first author in all of them. Dr. Maryana Kirova has also presented 3 scientific communications at national congresses and forums.

I consider the dissertation work and its contributions to be the personal work of the doctoral student, carried out under the guidance of her supervisor.

The proposed recommendations for dental practitioners are essential for clinical practice.

I have some recommendations for the presented dissertation, namely:

- The text in tables 11, 13, and 17 should be in Bulgarian.
- In the discussion on pages 88, 89, 106, and 126, there should be more than one author with whom to compare the results.
- Conclusions 5, 9, and 11 may be omitted, as they reflect general provisions.
- The way the publications related to the dissertation are presented does not make it clear in which journal they were published, as well as the volume, issue, and pages.

These comments do not diminish the value of the dissertation.

7. Author's abstract

The abstract is presented on 72 pages and includes 16 tables and 35 figures. The content of the abstract meets the requirements and comprehensively reflects the obtained results.

CONCLUSION

The dissertation contains **scientific and scientifically-applied results that represent an original contribution to science and meet all the requirements** of the Law on the Development of Academic Staff in the Republic of Bulgaria (LDASRB), the Regulation for the Implementation of LDASRB, and the Regulation of Medical University - Varna.

The dissertation on the topic "**Assessment of changes in hard dental tissues in patients with bulimia**" shows that the doctoral candidate **Dr. Maryana Rosenova Kirova** possesses in-depth theoretical knowledge and professional skills in the scientific specialty of therapeutic dental medicine, demonstrating qualities and skills for independent scientific research.

With this position, I give my **positive assessment** of the conducted study, presented by the reviewed dissertation, abstract, achieved results, and contributions, and **I recommend to the esteemed scientific jury to award the educational and scientific degree of "Doctor" to Dr. Maryana Rosenova Kirova** in the doctoral program in Therapeutic Dental Medicine

05.05.2025 г.
Sofia

Author of the opinion:

Заличено на основание чл. 5, §1, б. „В“ от Регламент (ЕС) 2016/679
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(Assoc. Prof. Dr. Elka Radeva, PhD)