

OPINION

prof. Roman Emilov Tashev, MD, PhD, DSc.
Department of Physiology and Pathophysiology,
Faculty of Medicine at MU – Sofia

Subject: Dissertation work defense of Dr. Gabriela Georgieva Panayotova on the theme: “Study of the therapeutic possibilities of biofeedback training as a method for reducing stress and improving the mental health of foreign medical students” for the award of the educational and scientific degree “*PhD*” in the doctoral program “Pathophysiology”, Field of higher education: 7. Health and Sports, Professional field: 7.1 Medicine.

Scientific supervisor:

Prof. Dr. Margarita Stefanova Velikova, MD

General presentation of the procedure and the doctoral student

The opinion was prepared in accordance with Order No. P-109-283/30.07.2026 of the Rector of the Medical University-Varna.

The presented set of materials on electronic media is in accordance with the Procedure for acquiring the "PhD" at MU-Varna.

This opinion has been prepared in accordance to the Law of the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for the Implementation of the Academic Staff Development Law and the Regulations for the Conditions and the Procedure for Acquisition of Academic Degrees and Academic Position Occupation in the Medical University – Varna.

I have not found any omissions in the procedure and the documentation submitted by Dr. Gabriela Georgieva Panayotova.

I declare that I have no joint scientific works with the doctoral student.

Professional Development

PhD student Gabriela Georgieva Panayotova was born in 1995 in the town of Gorna Oryahovitsa. In 2020, Panayotova graduated from the Faculty of Medicine, Medical University of Varna and received the educational and qualification degree "Master of Medicine". From 2020 until now, she has been an assistant professor at the Department of Physiology and Pathophysiology, Faculty of Medicine, Medical University-Varna. In 2023, she was enrolled as a full-time doctoral student in the doctoral program in "Pathophysiology" at the same department. She obtained her specialty in physiology in 2025.

Dr. Panayotova speaks English, Spanish and German.

Actuality and significance of the dissertation topic

The dissertation is dedicated to a current, still insufficiently well-researched and discussed topic in the scientific literature. Today, stress is considered one of the biggest problems of modern society. In the event of a very long stress reaction and the body's inability to restore its disrupted homeostasis, its normal functions are damaged, and prolonged stress on the part of the central nervous system leads to emotional overexertion, confusion, unstable concentration, development of depression and cognitive disorders. There are studies that highlight the high levels of stress among international medical students. Managing stress and improving mental health in these students is a current scientific and clinical issue. The main medications for

treating depressive and anxiety disorders are from the group of anxiolytics and antidepressants. An inevitable consequence of their use is the development of serious adverse side effects. Biofeedback (BF) is a psychosomatic type of technique that can offer a non-pharmacological approach to improving mental health, in which individuals learn how to effectively regulate a number of physiological processes in order to improve physical, mental, emotional, and spiritual health.

A strategic goal and current task of the study is to investigate the efficacy of biofeedback, as a therapeutic program, for reducing stress and improving mental health among foreign medical students.

The dissertation of Dr. Gabriela Georgieva Panayotova is dedicated to this problem.

Knowing the problem

The dissertation is properly constructed, well and eruditely written. The latter covers 185 pages. The research is well argued with a comprehensive and in-depth literature review of 57 pages. The bibliography is comprehensive and contains 645 literary sources, all of which are in Latin. The good knowledge of the problem and the correctly presented information are impressive, which for the most part reflects literary data from recent years, representing the level of recent knowledge about stress, depression, anxiety disorders, their etiology, pathophysiology, clinical picture, data on biofeedback and its clinical application.

The presented literature review, illustrated with 6 figures and 2 tables, is systematized and selectively focused on the specific tasks of the dissertation and provides a clear idea of Dr. Panayotova's knowledge of the problem, in understanding and interpreting the literary sources. It should be noted that the material included in the review is presented in good Bulgarian, which is also characteristic of the author's subsequent presentation.

Aim and tasks of the dissertation

The aim of the dissertation is to evaluate the therapeutic potential of biofeedback training as a method for reducing stress and improving the mental health of foreign medical students.

To achieve this aim, Dr. Panayotova has set herself **8 tasks**, which are clearly formulated and provide an opportunity for very well-targeted research.

The working hypotheses are defined separately. They are adequate to the set goal and objectives.

From the **“Material and Methods”** sections, it is clear that Dr. Panayotova has correctly selected the participants, methods, and equipment, which are described in detail and critically. Adequate and informative methods of different nature were used to resolve the aim. A total of 47 foreign students enrolled in the English-language medical program at the Medical University of Varna participated in the study. Students meeting the specified criteria for inclusion in the program were divided into two groups (training group — 24 participants and control group — 23 participants).

The research was conducted in a logical sequence.

It should be noted that this section is organized and very well illustrated with 5 figures and appropriate descriptions of the research conducted.

To process and analyze her own data, Dr. Panayotova used appropriate statistical methods that provide a wide range of options for descriptive, comparative, multivariate and longitudinal statistical processing, which creates a reliable basis for discussing the data obtained and the conclusions drawn from them.

Results and discussion

The studies were conducted in a logical sequence. The results and discussions are presented in 7 chapters in a comprehensible scientific style, as the separate studies illustrated in 28 figures, 28 tables and 7 appendices. This creates perspicuity, clarity and easier perception of the results obtained. After each chapter, the obtained data are discussed.

Overall, I give a positive assessment of her own research.

As a result of the precisely performed work and the proper discussion of the results, **9 conclusions** were drawn. The conclusions drawn correspond to the tasks set and accurately and correctly reflect the most significant results. I accept the conclusions.

The dissertation have been achieved **contributions** that are very correctly divided into contributions of scientific-theoretical original nature (7 in number) and contributions of a confirmatory nature (4 in number). I accept the contributions. They truly reflect what has been achieved.

The proposed practical recommendations regarding the introduction of screening for stress and psycho-emotional state of students, as well as the proposal for training teachers and university psychologists in the application of biofeedback, make a very good impression.

Publications related to the dissertation

In connection with the dissertation, Dr. Panayotova has presented a list of 3 published scientific articles, 3 of which are in English, in all of which she is the first author. With the results of her dissertation, Dr. Panayotova has participated in a total of 4 international scientific forums, and in all 4 of them she is the first author.

The presented scientific papers are related to the topic of the dissertation and contain data from the conducted research.

Based on the above, I assess the dissertation work of Dr. G. Panayotova as her personal work, fully meeting the requirements and recommended scientometric criteria for awarding the educational and scientific degree "PhD".

In conclusion, my assessment of the dissertation presented by Dr. Gabriela Georgieva Panayotova on the theme: "Study of the therapeutic possibilities of biofeedback training as a method for reducing stress and improving the mental health of foreign medical students" is positive and with this opinion I express my belief that the work meets the accepted requirements for the award of the educational and scientific degree "PhD" " in the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Rules for its Application, as well as the specific Criteria for occupying academic positions and acquiring scientific degrees at MU-Varna.

Based on the above, I will vote "YES" and recommend to the esteemed members of the Scientific Jury to vote positively and award Dr. Gabriela Georgieva Panayotova the educational and scientific degree "**PhD**" in the doctoral program "Pathophysiology", Field of Higher Education: 7. Health and Sports, Professional Field: 7.1 Medicine

08.09.2026

Sofia

Заличено на основание чл. 5,
§1, б. „В“ от Регламент (ЕС)
2016/679

/prof. Roman Tashev, MD, PhD, DSc./