

## **REVIEW**

by Prof. Darina Naydenova Hristova, MD, PhD

Head of the Department of Hygiene and Epidemiology, Faculty of Public Health

Medical University "Prof. Dr. P. Stoyanov" – Varna

**REGARDING:** THE DOCTORAL THESIS FOR AWARDING THE EDUCATIONAL AND SCIENTIFIC DEGREE OF PHILOSOPHY DOCTOR IN THE DOCTORAL PROGRAMME OF HYGIENE (Incl. OCCUPATIONAL, COMMUNITY, SCHOOL, RADIATION, etc.), PROFESSIONAL FIELD 7.1. MEDICINE, FIELD OF HIGHER EDUCATION 7. HEALTHCARE AND SPORTS

### **THESIS SUBJECT:**

Assessment of the Psychoemotional Tension Levels in Managers and Options  
for Stress Control through an Active Physical Programme

by

Tatiana Boykova Mateva, MD

Full-time doctoral student at the Department of Hygiene and Epidemiology,  
Faculty of Public Health, MU-Varna

I have been appointed to serve as a member and as a chairperson of the Scientific Jury based on Order No P-109-169/ 25.03.2025 of Prof. Dr. Dimitar Raykov, MD, PhD, Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna, and according to Protocol No 1/ 31.03.2025 and the decision of the Faculty Council of the Faculty of Public Health, Protocol No242/ 19.03.2025 I have been designated to submit a review on Dr. Tatyana Boykova Mateva's thesis

as part of the defence procedure for obtaining the educational and scientific degree of Philosophy Doctor ([Protocol No. 1 from the first meeting of the Scientific Jury).

*Brief data on the professional career of the doctoral candidate Dr. Tatyana Boykova Mateva.* The entire procedure for enrolment in the doctoral programme, taking the doctoral minimum exam, and referral to public defence complies with the legal provisions and the Regulations of MU "Prof. Dr. P. Stoyanov" – Varna. Dr. T. Mateva was enrolled in a full-time doctoral programme for obtaining the educational and scientific degree of Philosophy Doctor. Her thesis subject is on: **Assessment of the Psychoemotional Tension Levels in Managers and Options for Stress Control through an Active Physical Programme.** The doctoral research is in the field of higher education 7.3. Sports, Doctoral Programme in **Sports Psychology**, with research supervisor Prof. T. Dimitrova, MD, PhD. After a successful internal defence on March 18, 2025, the PhD candidate was granted the right to public defence.

The doctoral student is a graduate of the Medical University "Dr. P. Stoyanov" – Varna. After her graduation in 1992, Dr. Mateva worked as a resident physician at the Obstetrics and Gynaecology Department of St. Anna General Hospital in Varna. Later, she served as Head of the Health Services, Emergency Medical Care, in the village of Kitka, Avren municipality, Varna region. For the last 25 years, she has been balancing two positions at once: as the Medical Director of Boiron Bulgaria and a physician at the Occupational Health Service at Medical Centre Mladost, Varna. Dr. Mateva is a specialist with a focus on preventive strategies: she is certified in two specialities –Occupational Medicine (2016) and Nutrition and Dietetics (2020). She is a member of the Bulgarian Medical Association (BMA), Bulgarian Academic Society of Occupational Medicine (BASOM), Bulgarian Society of Nutrition and Dietetics (BSND), and Bulgarian Medical Homoeopathic Organisation (BMHO). Due to her expertise in

management and organisational skills, paired with her competencies in the field of prevention, in 2022, she initiated the establishment of the National Association of Practical Dietetics and Integrative Medicine (NAPDIM), where Dr. Mateva is on the board of directors. In the last 3 years, she has played a key role in organising the annual national dietetic symposium, Bulgarian Dietetic Days.

### **Characteristics and evaluation of the thesis**

The thesis is in line with current academic standards and requirements. It is presented on 128 standard pages. The structural sections of the thesis are well-balanced and in logical sequence: theoretical framework (literature review), methodology, including aim, tasks and research tools, results and discussion, recommendations, conclusions, final remarks and contributions. There are 172 cited literature sources, of which 2 are in Cyrillic and 170 in Latin. The thesis includes 34 tables and 27 figures, which very well represent the scope of research and set the stage for an in-depth discussion regarding the results. The literature review presents a concise overview of contemporary knowledge while reflecting the candidate's deep comprehension, substantial experience, and individual stance on the researched issue.

*Relevance of the thesis subject.* The doctoral candidate focuses on a significant issue and addresses both the practical side and the public health implications: psychoemotional tension in management personnel and the options for stress control through an active physical programme. The stressful environment and the information flow surrounding today's people, as well as their often high anxiety, provoke serious, time-resistant deviations in the regulation of neuro-endocrine processes. Stress has been proven to be associated with numerous medical complications and psychosomatic pathology. The consequences of psychoemotional tension are catalysed by a number of other factors related to social status, financial security, age, personality traits, marital status, etc. The



effects of these mutually potentiating factors can pose health risks for management staff because of the specific demands of their roles. To date, studies focused on stressors in management personnel (CEO positions) are few. The lack of effective long-term stress management strategies and the presence of social stigma on this issue make this study particularly relevant. The most successful approach to stress management is the holistic approach, including regular physical activity.

*The literature review* and study of available literature sources on the thesis subject are well-structured in seven subsections. The physiological aspects, definition, and development of the concept of stress are examined in depth from a historical perspective. Particular attention is paid to contemporary views on the pathophysiological aspects and the social significance of stress. The analysis of occupational stress is highlighted as a key element in the review, including different groups of stressors (nature of work, career development, role-related stress, work relationships, organisational environment, and interface between work and home). The benefits of physical activity for psychosomatic health and stress control are also emphasised.

The aim of the thesis is clearly defined – to establish the correlation between psychoemotional levels and physical activity in management personnel in order to design strategies for reducing stress. Six specific tasks are formulated, logically related to the research objectives.

*The methodology* of the research is presented in detail. Appropriate psychometric tools have been selected that fully correspond to the aim and tasks of the thesis. An array of specifically selected methods is applied: documentary, sociological, quantitative (occupational-physiological – ECG, response time, Dot cancellation test), laboratory (thyroid hormones), imaging (thyroid ultrasound), statistical and graphical methods. The subject of the study is management personnel (leaders,

executives) from across the country. The study design includes 3 phases (determining eligibility for participation, examining maximum and minimum stress levels), which are combined in one cycle. A study participant finishes one complete cycle in three months.

The main part of the thesis consists of *analysed results*. They are sufficiently detailed and well-illustrated. For the period 2021–2023, 152 executives aged 30–60 years, working in various fields (production, communications, finance, informatics, trade), were examined at the Medical Centre Mladost, Varna.

The majority of participants included in the study reported hypodynamia in their daily lives. More than half (55.3%) are physically inactive compared to 44.7% who are physically active. Most commonly, management personnel practice fitness and jogging. The study features a higher representation of women, which can be attributed to the increasing trend of women taking on leadership roles. Worldwide studies show that females are more actively interested in healthy lifestyles, assessment of neuropsychological tension, and approaches to coping with stress. Women seek health-related information through various channels, including online networks, more often (48.7%) than men (39.5%).

The stress level was assessed using a specialised Four-Dimensional Symptoms Questionnaire (4DSQ). Managerial positions suggest high levels of distress, as this group is usually exposed to extreme levels of professional stress. Dr. Mateva finds that stress leads to a subjective feeling of depression and sleep disturbances. Classical tests were also used for stress analysis: The Bourdon-Wiersma test, as well as the productivity and success ratios before and after the weekend. The doctoral candidate indicates a pattern of lower values in the success ratio after weekend days, while there is no such trend in the productivity ratio examined before and after the weekend. Response time to stimulation is related to cognitive function and stress levels. Analysis of this indicator shows distinct variations: it



is lower in physically active individuals and higher in physically inactive individuals. The doctoral candidate explains the shorter response time after the weekend in executives who exercise with the beneficial effects of physical activity on stress levels and brain performance.

The doctoral candidate formulates five *conclusions* corresponding to the set goals and tasks. She finds that:

1. The methodology for stress assessment is adequate for the purposes of the study, and the measured stress values correspond to general averages for the population.
2. Indicators associated with high stress levels are similar in both genders and both groups.
3. There are significant differences in response time after the weekend in all studied groups, regardless of gender and physical activity
4. Active Physical Programme (APP) does not significantly affect stress levels in managers and leaders, but does affect response time after rest.
5. Response time after the weekend reflects general stress levels but also serves as an indicator in assessing individual productivity, particularly in "management personnel".

Five recommendations have been formulated based on the data evaluated in the thesis. They concern the role of the Active Physical Programme (APP) as a sanogenic factor reducing overall stress levels. The programme is recommended for a range of job roles, but would be of key importance for management personnel with predominantly intellectual work and increased cognitive demands. The recommendations are addressed to employers and occupational health specialists and concern both the active implementation of APP and screenings for psychoemotional tension in management personnel. Such programmes would improve overall health status, quality of life, and professional productivity among

management personnel. Terms such as "management personnel" and "active physical programme" are defined. For the first time worldwide, a methodology has been developed for indirect, combined (self-assessment, instrumental, laboratory, and Dot cancellation test) evaluation of stress levels. It can be utilised as a framework for subsequent studies. A user-friendly methodology has been created, which is used to compare management personnel with an active physical programme and those without physical activity, according to multiple criteria. Indirect indices for stress levels are a good practice and are suitable for use in various fields of activity.

*The thesis summary* is prepared according to requirements and fully reflects the thesis content, presenting in detail the main results, conclusions, and contributions of the research.

Dr. Tatyana Mateva has presented 4 research papers and 5 participations in scientific forums related to the thesis subject.

*Personal impressions.* I have known Dr. Mateva for many years. I had the pleasure of being the supervisor of her specialisation in Nutrition and Dietetics. She is distinguished by high professionalism, curiosity, and ethics. One of her greatest assets is her teamwork-oriented approach and her ability to respond quickly in critical situations. Dr. Mateva is an accomplished specialist in preventive medicine. She herself occupies the position of a "leader" capable of motivating her team members.

## **Conclusion**

The thesis presented for review, **Assessment of the Psychoemotional Tension Levels in Managers and Options for Stress Control through an Active Physical Programme**, fully complies with the requirements of MU-Varna. It is a significant scientific study on public health issues with undisputed theoretical and,

above all, applied contributions. The issue at hand is both relevant and timely, the literature awareness is high, and the main goal and tasks are formulated clearly and competently. The obtained results provide a large volume of scientific information – analytically presented facts, expertly interpreted, and focused on practical applications. The formulated conclusions and recommendations are accurate and align well with the results. The candidate has all the grounds for advancing their expertise in this particular field of public health.

I confidently provide my *positive assessment* and propose to the other members of the respected Scientific Jury to vote positively for awarding the educational and scientific degree of Philosophy Doctor to **Tatyana Boykova Mateva, MD** – full-time doctoral student in the doctoral programme of **Hygiene (including occupational, communal, school, radiation, etc.)"**, professional field **7.1 Medicine**, field of higher education **7. Healthcare and Sports** at the Department of Hygiene and Epidemiology, Faculty of Public Health, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna.

03/05/2025

Prepared the review

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

/Prof. Darina Naydenova ~~ginslava~~ MD, PhD/