

REVIEW

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**REGARDING: PROCEDURE FOR DEFENSE OF A DISSERTATION FOR THE
AWARDING OF THE EDUCATIONAL AND SCIENTIFIC DEGREE "DOCTOR" IN THE
DOCTORAL PROGRAM "HYGIENE (INCLUDING OCCUPATIONAL, COMMUNITY,
SCHOOL, RADIATION, ETC.)", PROFESSIONAL FIELD 7.1 MEDICINE, AREA OF
HIGHER EDUCATION 7. HEALTHCARE AND SPORTS**

TOPIC:

**MANAGEMENT OF HEALTHY AND SAFE WORKING CONDITIONS
AT SPECIALIZED HOSPITAL FOR ACTIVE TREATMENT IN OBSTETRICS AND
GYNECOLOGY "PROF. DR. D. STAMATOV" – VARNA**

by

**Dr. ZLATINA PANDELIEVA
(full-time PhD student)**

SCIENTIFIC SUPERVISORS:

**PROF. DR. TEODORA DIMITROVA, MD
PROF. DR. TSANKO PAUNOV, MD**

Grounds for the Review:

I present this review in my capacity as a member of the Scientific Jury, appointed by Order No. R-109-169/25.03.2025 of Prof. Dr. Dimitar Raykov, DMSc, Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna. Based on Protocol No. 1/29.04.2025, I was assigned to present a review of the dissertation by Dr. Zlatina Pandelieva for the awarding of the educational and scientific degree "Doctor".

The dissertation was approved for public defense by decision of the Departmental Council of the Department of Hygiene and Epidemiology, Faculty of Public Health at the Medical University – Varna (Protocol No. 243/09.04.2025).

General Assessment of the Submitted Documents for Defense:

The review was prepared on the basis of documents submitted both in print and electronic form, which fully comply with the requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria, the Rules for its implementation, and the Rules for academic career development at MU – Varna.

The review of the documents confirms the full compliance of the procedure with these requirements. Dr. Pandelieva has completed the tasks set out in both her individual and group training plans in the Doctoral School. The requirements related to the development of the dissertation and the associated publications have been met. The doctoral student's original studies began after approval by the Ethics Committee for Scientific Research at the Medical University – Varna. All required documents are clearly described and well-organized.

Doctoral Student's Career Profile:

Dr. Zlatina Pandelieva graduated with a Master's Degree in Medicine from MU "Prof. Dr. Paraskev Stoyanov" – Varna in 2003. She also holds a Master's Degree in Health Management and Social Medicine from the same university (2016). She has acquired two specialties: Pediatrics (2010) and Neonatology (2017). Her professional experience includes positions at the Emergency Medical Center – Varna; the Neonatology Department of MBAL – Shumen; AGPPMP "Zlatevi" Ltd. – Varna; the Neonatology Department of MBAL "St. Anna" – Varna; and DCC V – Varna "St. Ekaterina". Since 2017, she has been Head of the Neonatology Department at Specialized Hospital for Active Treatment in Obstetrics and Gynecology "Prof. Dr. D. Stamatov" – Varna. Dr. Pandelieva began her academic career as a part-time assistant in the Department of Hygiene and Epidemiology, MU – Varna. Between 2016 and 2017, she conducted practical training for medical students in English in hygiene and epidemiology. As of March 2025, she is an assistant in neonatology at the Department of Obstetrics and Gynecology, MU – Varna.

She has participated in numerous specialized and qualification courses with theoretical and practical focus, both domestically and abroad.

Dr. Pandelieva is proficient in English and German.

After successfully passing a competition in 2020, she was admitted as a full-time doctoral student in the doctoral program "Hygiene (incl. occupational, community, school, radiation, etc.)" at the Department of Hygiene and Epidemiology, Faculty of Public Health – MU Varna (Order No. R-109-49/31.01.2020). She has

been discharged with the right to defend (as evident from the attached documentation).

Relevance and Significance of the Dissertation Topic:

The topic of the dissertation "Management of Healthy and Safe Working Conditions at Specialized Hospital for Active Treatment in Obstetrics and Gynecology "Prof. Dr. D. Stamatov" – Varna is particularly relevant and significant in the current context, and the PhD candidate Dr. Pandelieva skillfully argues this relevance.

Approximately 3% of workers in the EU are employed in the healthcare and social sectors, being engaged in ensuring the health and well-being of European citizens. These workers are exposed to a variety of workplace risks, which require attention, especially in the analysis of occupational health and safety data. The diversity of professions within the healthcare sector defines the broad range of risks due to complex working conditions. These include biological agents (exposure to various infectious organisms through skin contact or needlestick and cut injuries); chemical agents (surface disinfectants, medical consumables, aerosolized medications, anesthetic gases, etc.); antineoplastic agents (used in chemotherapy for malignant conditions and cytotoxic drugs administered to both cancer and non-cancer patients in healthcare facilities).

Due to the high intensity of work and the demanding responsibilities faced in the workplace, healthcare professionals often encounter psychosocial risks associated with high stress levels and burnout. Other adverse factors include extended working hours, shift work, hazardous environments, and daily exposure to human suffering and death. These may lead to poor mental and physical health, highlighting the need for activities aimed at identifying such risks and developing effective prevention policies.

General Characteristics of the Dissertation:

The dissertation submitted for evaluation meets the requirements set forth in the Law for the Development of Academic Staff and its implementing regulations. It consists of 153 pages and includes all required sections according to the regulations of the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna for awarding the academic degree "Doctor" in medicine. The dissertation is illustrated with 13 tables, 53 figures, and 3 appendices. The bibliography includes 207 references. In terms of structure, content, technical formatting, scientific style, and language, the dissertation fully meets academic standards and represents a completed scientific work.

The title is accurate and clearly reflects the content. The introduction emphasizes the significance of the problem.

The literature review spans 64 pages and is structured to provide a thorough and multifaceted examination of the problem. Dr. Pandelieva comprehensively describes the priority health and work capacity risks in healthcare according to

literature (biological, physical, chemical, psychosocial, ergonomic). Special attention is given to risk management and the necessity of preventive measures. The healthcare and social care sectors have made notable progress in workplace safety management, but still face challenges such as legal requirements, staffing shortages, and stigma related to mental health. The potential integration of new technologies, such as artificial intelligence (AI), is critical to the sector's future, as AI can automate certain tasks and reduce physical and psychosocial risks.

This section of the dissertation demonstrates the PhD candidate's awareness of the research topic, ability to work with literature sources, competent interpretation of theories, and a strong sense of responsibility and accurate referencing. These qualities enable Dr. Pandelieva to convincingly justify the objectives and tasks of her own research.

The aim of the dissertation is clearly defined – to identify the priority risks and opportunities for improving healthy and safe working conditions in the Specialized Obstetrics and Gynecology Hospital “Prof. Dr. D. Stamatov” EOOD - Varna. Achieving this aim is tied to six specific tasks, which are clearly and logically formulated and define the scope of the research.

The study design employs several methodologies, including documentary, sociological (qualitative and quantitative), instrumental measurements of indoor air quality indicators, and statistical and graphical methods. The study population consists of professionals aged over 18 who provide subjective and objective assessments of risk factors arising from work processes and environments in a specialized obstetrics and gynecology hospital. A “Questionnaire for Employee Involvement in Risk Assessment” was developed, covering three domains: subjective risk assessment from work processes; risks related to the work environment – biological agents and surgical smoke, and their evaluation methodology.

The results form the core of the dissertation. This section is exceptionally well-structured and illustrated with clearly presented tabular data and colored graphical figures. The results reflect Dr. Pandelieva's integrity in handling scientific data, applying appropriate analytical methods, and performing in-depth interpretations. Her analysis merits particular attention and is highly rated for its sound structure, logical coherence, and consistency within the methodological framework. Her ability to interpret data and synthesize scientific information is commendable.

The survey involved 61 employees of Specialized Obstetrics and Gynecology Hospital “Prof. Dr. D. Stamatov” EOOD - Varna, predominantly from the medical and midwifery professional groups. The average total work experience of the group is 20.75 ± 12.7 years, with an average of 10.03 ± 8 years in the current facility. The subjective assessment of the work environment as risky is statistically significantly influenced by demographic factors such as gender, age, and overall and specialized experience at SBGAL “Prof. Dr. D. Stamatov” – Varna. Gender stands out as a key

determinant in emotional support needs and expression, while age affects readiness for positive reappraisal and behavioral engagement. Further studies are necessary, as no current research specifically addresses the influence of demographic factors on subjective risk perception in obstetric and gynecological hospitals.

Medical professionals often perform tasks involving prolonged standing, repetitive motions, and awkward postures, which can lead to musculoskeletal problems. These ergonomic burdens are recognized as significant risks in the healthcare sector. Healthcare workers are at risk of contact with infectious agents, necessitating strict safety protocols and the use of personal protective equipment (PPE).

The type of surgical intervention affects the dynamics of airborne pollutants in operating rooms. The use of electrosurgical tools results in significantly higher values of all three monitored indoor air quality indicators (fine particulate matter up to 2.5 μ m, fine particulate matter up to 10 μ m, and carbon dioxide).

Poor health among medical personnel adversely affects patient care quality. Accidents are more common among staff working shifts longer than 12 hours, and mental fatigue leads to medical errors.

Employment insecurity, high work intensity without sufficient breaks, lack of social support, excessive workload, and time pressure are psychosocial risks contributing to stress and emotional exhaustion among healthcare professionals, ultimately reducing staff effectiveness.

Results from the Work Ability Index study indicate correlations with risk factors linked to work process characteristics, such as subjective workplace risk assessment, self-assessed psychological strain, and perceived stress levels. Emotional resilience among doctors and midwives serves as a potential strategy for preventing negative health outcomes.

Workplace policies aimed at improving mental well-being among healthcare staff should include at least three core components: infection control and prevention, provision of necessary PPE, and preparedness plans for hospital-acquired infections.

Dr. Pandelieva draws summarizing conclusions consistent with the defined objectives, tasks, and findings of her study.

Conclusions and Recommendations:

As a result of the analyses and findings, conclusions and recommendations were formulated for health promotion and prevention of negative effects related to workplace risks among employees at the Specialized Obstetrics and Gynecology Hospital "Prof. Dr. D. Stamatov" EOOD - Varna.

The focus is placed on priority risk factors arising from working conditions in specialized obstetrics and gynecology hospitals, including ergonomic, organizational, psychological risks, as well as biological and toxicological agents.

Health and safety at work in these hospitals are ensured through comprehensive assessment and management of physical and chemical risks, consideration of ergonomic challenges, and implementation of mandatory preventive programs.

Biological risk management should include: use of personal protective equipment (PPE) such as gloves, masks, protective goggles, and aprons; strict hand hygiene and surface disinfection protocols; isolation of patients suspected of infection; staff vaccination against hepatitis B and airborne infections such as influenza; and adequate prevention programs to limit exposure to electrosurgical smoke in operating rooms. Training staff in the correct use of chemicals and safe work techniques is essential.

Mental stress among obstetricians-gynecologists and midwives is influenced by subjective perceptions of health risks in the workplace, the level of physical and emotional workload, and awareness of the risk of making fatal mistakes.

The PhD candidate appeals to all stakeholders – employees, employers, healthcare managers at different levels, obstetricians-gynecologists, and midwives in both hospital and outpatient settings – to use and apply the findings of this study to support workplace health prevention.

The data from this study should also be used by occupational health services in developing a Bulgarian methodology for identifying, assessing, and managing workplace risks in the healthcare sector.

Contributions:

The contributions of this study are six in number, with both original and applied value. I believe they are accurately described and fully endorse them. The contributions underscore the scientific value of the dissertation as they:

- ◆ Assess workplace risks in a specialized hospital for active obstetric-gynecological treatment within Bulgarian practice.
- ◆ Introduce, for the first time in Bulgaria, a comprehensive methodology for subjective assessment of mental health in healthcare workplaces.
- ◆ Pilot a national-level monitoring system for air quality in operating rooms during electrosurgery.
- ◆ Develop an original questionnaire for employee involvement in the risk assessment process at specific workplaces within Specialized Obstetrics and Gynecology Hospital “Prof. Dr. D. Stamatov” EOOD - Varna.
- ◆ Apply systematic analysis of both subjective and objective evaluation of environmental parameters in gynecological operating rooms.
- ◆ Implement, for the first time worldwide, a four-dimensional design to study neuropsychological workload levels in healthcare using the Work Ability Index,

Perceived Stress Questionnaire, Self-assessment Questionnaire on Work Environment, and Lifestyle.

Evaluation of the Abstract:

The abstract is 67 pages long, well-structured, and contains the main results of the scientific study, a list of related publications, and participation in scientific forums.

In relation to the dissertation, Dr. Pandelieva presents three scientific publications and has participated in three scientific forums. She is the first author of two of the publications, which indicates her personal involvement in their development. This publication activity fully meets the quantitative criteria set by the regulations of MU – Varna for awarding the academic degree "Doctor".

Critical Notes and Recommendations:

I have no substantive remarks regarding the dissertation.

Summary:

I have before me a completed scientific work that confirms the successful achievement of the objectives of the doctoral program. I commend the scientific supervisors Prof. Dr. Teodora Dimitrova and Prof. Dr. Tsanko Paunov, as well as the PhD candidate Dr. Zlatina Pandelieva, for choosing such an important and interdisciplinary topic that provides opportunities for further discussion.

Conclusion:

I give my overall positive evaluation of the dissertation submitted by **Dr. Zlatina Pandelieva – full-time PhD student** in the doctoral program “**Hygiene (including occupational, community, school, radiation, etc.)**”, professional field **7.1 Medicine**, area 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, on the topic: “**Management of Healthy and Safe Working Conditions at the Specialized Obstetrics and Gynecology Hospital “Prof. Dr. D. Stamatov” EOOD – Varna.**”

The dissertation meets all the requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria, its implementation regulations, and the rules for academic development at the Medical University – Varna.

I give my affirmative vote “**YES**” and with pleasure and conviction recommend to the esteemed Scientific Jury to award the educational and scientific degree “**Doctor**” to **Dr. Zlatina Pandelieva** in the scientific specialty “Hygiene.”

29/05/2025

Prepared by: 
/Prof. Magdalena Platikano

Заличено на основание чл. 5,
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