



REVIEW

By Prof. Dr. Emil Georgiev Kovachev, MD, PhD, Dr.Med.Sc

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on the dissertation for the educational and scientific degree "Doctor", scientific specialty Hygiene (incl. Occupational health, communal, school, radiation, etc.), Department of Hygiene and Epidemiology, Medical University - Varna.

Topic of the dissertation: **Implementing an occupational health and safety management system at SBAGAL "Prof. Dr. D. Stamatov" Varna**

Author of the dissertation – **Dr. Zlatina Yordanova Pandelieva**

Scientific supervisors: Prof. Dr. Teodora Dimitrova, MD and Prof. Dr. Tsanko Paunov, MD

The dissertation submitted for defense contains a total of 151 standard pages and is illustrated with 13 tables, 53 figures and 3 appendices. The bibliography contains 207 literary sources.

Relevance of the problem

In her paper, Dr. Pandelieva addresses a contemporary problem of important medico-social significance. Healthcare workers face a variety of risks from the complex occupational risks in the work environment. They experience high levels of stress, which can lead to poor mental and physical health. Psychosocial risks are associated with high levels of stress and professional burnout, which are common due to the intensity of work and the high demands and responsibilities they face in the workplace.

Overview of the literature review clearly shows that the dissertation candidate has thoroughly researched a variety of contemporary literary sources. The review possesses good cognitive value.

Objective of the study: To identify the priority risks and opportunities for improving the safety and health work conditions in the Specialized Hospital for Obstetrics and Gynecology "Prof. Dr. D. Stamatov" EOOD Varna.

The tasks of the dissertation are clearly formulated and are 6 in number:



1. To perform a literature review of occupational health risks in a hospital for treatment
2. To create a "Questionnaire for involving employees in the risk assessment process"
3. To assess the priority health risks of employees in the specialized hospital for active treatment in the post-covid period with the participation of employees
4. To assess the risk factors arising from the characteristics of the work process in the specialized hospital for active treatment
5. To study the organizational and psycho-emotional risks in the workplace and their relationship with the performance indicators, individual characteristics and lifestyle of employees
6. To assess the risk of exposure to surgical smoke and to formulate recommendations for health promotion and prevention in an operating room for obstetrics and gynecological treatment.

Material and Methodology

The survey included 61 from workers in SBAGAL. The average age is 44.3 ± 13.58 years. The professional groups are mainly doctors and midwives. The dissertation author clearly defines criteria for admission and inclusion in the study:

- ✓ professionals over the age of 18;

Through informed consent, respondents are informed of the following:

- ✓ No significant risks or inconveniences associated with the respondents' participation in the study have been identified.
- ✓ No information about the respondents' identity is collected and will not be processed.
- ✓ The data collected through the study will be used in the development of a methodology for identifying, assessing and preventing risk factors in the workplace.

Results and discussion:

Risk factors arising from the characteristics of the work process in the Specialized Obstetrics and Gynecology Hospital reliably affect the work capacity level of medical specialists. The subjective assessment of work environment as risky reliably affects the work ability indices, the self-assessment of mental stress and the level of perceived stress among the staff. The work ability index depends on both the level of awareness of mental stress in the workplace and on the coping with emotional challenges by doctors and midwives.

Awareness of the high responsibility for patients' life influences the distribution of personnel in the groups with low work capacity, hyperstress and high level of stress perception. The professional groups of doctors and midwives show an influence on the perceived levels of stress, responsibility for people and materials. Doctors more often self-identify as hyperstressed and with a high awareness of responsibility for people, while midwives more often declare concern about the high material responsibility.

The distribution in groups by work ability index is reliably influenced not only by risk factors at the workplace, but also by elements in the employees' lifestyle. Physical activity in leisure time, such as



sports and walking, has a reliable prophylactic role, both in increasing work capacity and in the level of perceived stress at the workplace. Conversely, high levels of perceived stress, self-reported hyperstress, low work capacity and short special experience are associated with sleep disorders.

The literature review identifies ergonomic, organizational, psychological risks, as well as biological and toxicological agents as priority risk factors in working conditions in specialized hospitals for obstetric and gynecological active treatment.

Emerging biological agents in the post-COVID period increase the subjective sensitivity of workers to the well-known risks of blood-borne and multidrug-resistant hospital acquired infectious agents. The management of biological risks in healthcare, including obstetrics and gynecology, should include:

- Use of personal protective equipment (PPE);
- Strict hand hygiene and surface disinfection protocols;
- Isolation of patients with suspected infection;
- Vaccination of personnel against hepatitis B and other airborne infections, such as influenza;
- Adequate prevention programs to limit exposure to electrosurgical fumes for operating room workers.

The mental stress at the workplace of obstetricians-gynecologists and midwives is influenced by the subjective feeling of risk to one's own health at work, the level of physical and emotional strain, the awareness of the risk of making fatal mistakes, the feeling of adequacy of the preventive measures taken and the relative share of administrative commitments.

Occupational health and safety in a specialized obstetrics and gynecology hospital is ensured through a comprehensive assessment and management of both physical and chemical risks, taking into account ergonomic challenges and a mandatory program of preventive measures including:

- provision of specific ergonomic equipment
- Noise control by reducing unnecessary alarms, using soundproofing materials and ensuring quiet periods in intensive care units.
- Prevention of slips and falls through regular maintenance of floors, use of anti-slip materials and training of staff on safety.
- Radiation protection by providing adequate personal protective equipment (PPE), limiting exposure and regularly monitoring radiation levels.
- Use of patient handling aids, such as hydraulic lifts or mobile platforms;
- Training staff on proper lifting and handling techniques to reduce strain on muscles and joints;
- Improving the working environment by providing sufficient space for movement and adjusting the height of work surfaces to allow staff to work in comfortable positions.



- Use of personal protective equipment (PPE), including gloves, masks and specialized protective aprons, when working with cytotoxic drugs and disinfectants;
- Regular ventilation of work areas, especially where chemicals are handled
- Train staff on proper chemical use and safe work techniques
- Recommend the use of engineering controls that include optimal ventilation systems, airflow controls, and effective filtration systems. Studies have shown that unidirectional vertical airflows are more effective at reducing levels of bacteria-carrying particles in operating rooms than horizontal airflows

Evaluation of conclusions and contributions

In her thesis, Dr. Pandelieva formulates 6 original contributions, has 3 publications and 3 participations in scientific congresses and symposia related to the topic of the dissertation. It is particularly important to emphasize the original contributions, namely:

1. Workplace risk is assessed in a specialized hospital for active obstetric and gynecological treatment in Bulgarian practice.
2. For the first time in Bulgaria, a complex methodology for subjective assessment of mental health in the workplace in healthcare is created and applied.
3. Air quality monitoring in an operating room during use of electrocautery is approved at the national level.
4. An author's Questionnaire for the inclusion of workers in the risk assessment process for specific workplaces in SBAGAL is created.
5. A systematic analysis of the subjective and objective assessment of work environment parameters in an obstetric and gynecological operating room is applied.
6. For the first time, a four-dimensional design of the study of the levels of neuropsychiatric strain in healthcare is applied through the Work Ability Index, Perceived Stress Questionnaire, Self-Assessment Questionnaire for Work Environment and Lifestyle.

Critical comments and advice

Dr. Pandelieva has taken into account previously made critical comments.

Teaching and learning activities

Dr. Pandelieva graduated as a medical doctor at the Medical University "Prof. Dr. Paraskev Stoyanov" in Varna in 2003, after which she began working in general medicine practice. In 2010, she acquired a specialty in pediatrics, and in 2017 - in neonatology. Since 2010, she has been working in the neonatology ward at "St. Anna-Varna" Hospital. Since 2017, she has been working in the neonatology ward at SBAGAL "Prof. Dr. D. Stamatov" Hospital in Varna, and since the beginning of 2023, she has been the head of the same unit. Since 2016, she has a master's degree in health management and social medicine. Since 2024, she has been a part-time assistant at the



Department of Obstetrics and Gynecology at the "Prof. Dr. Paraskev Stoyanov" Medical University in Varna, and since 2025 was appointed as an assistant professor in the same department.

Dr. Pandelieva participates in numerous scientific Bulgarian and international forums, as well as has numerous additional qualification courses. Her clinical and scientific interests are in the field of neonatology - primary and long-term respiratory resuscitation, neurological diseases in the newborn period, follow-up of preterm infants.

Conclusion

The presented dissertation work of Dr. Zlatina Yordanova Pandelieva "Implementing an occupational health and safety management system at SBAGAL "Prof. Dr. D. Stamatov" Varna" is a current issue and meets the generally accepted criteria. I would like to recommend to the esteemed members of the Scientific Jury to vote positively for awarding the scientific and educational degree "Doctor" in the scientific specialty "Hygiene (incl. Occupational health, communal, school, radiation, etc.)" to Dr. Zlatina Pandelieva, according to the Regulations for the Development of Academic Staff at the Medical University - Varna.

Date:

June 3rd 2025

Prof.d-r E.k

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