

ATTITUDE

BY

Assoc. Prof. Dr. Maya Grigorievna Lyapina, PhD, DSc,

Medical College "J. Filaretova" - Medical University – Sofia

Basis: member of the Scientific Jury, appointed by Order No. RD-454/21.09.2022 of the Director of the National Center of Public Health and Analyzes - Sofia and Decision of the Scientific Council of the National Center of Public Health and Analyzes (Protocol No. 20/16.09.2022).

Subject: Dissertation work submitted for obtaining of the educational and scientific degree PhD in the scientific specialty "Hygiene" in professional field 7.1. "Medicine" from the field of higher education 7. Health care and sports.

Author of the dissertation: Dr. Irina Dimitrova Dimitrova - Toneva, doctoral student of independent training at the "Health at work" Department, "Public Health and Health Risk" Directorate, National Center for Public Health and Analyzes – Sofia, entitled "Occupational exposure to blood and biological fluids in healthcare workers in hospital care and status of pre- and post-exposure prophylaxis".

Supervisor: Assoc. Prof. Katja Vangelova, PhD

The presented dissertation of Dr. Irina Dimitrova Dimitrova - Toneva meets the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for the Terms and Conditions for Acquiring Scientific Degrees and Occupying Academic Positions at the National Center for Public Health and Analyzes.

Biographical data and professional development of the doctoral candidate

Dr. Irina Dimitrova Dimitrova - Toneva graduated from higher education with the educational and qualification degree "Master" in Medicine at the Medical University - Sofia in 1985. She is a doctoral student of independent training at the "Health at work" Department, Directorate "Public Health and Health risk", National Center for Public Health and Analyzes - Sofia. Her long-term professional experience was successively as a resident doctor in the state control system for occupational medicine at the Regional Health Inspectorate in St. Zagora and Sofia (1986-1991), after which, from 1991 until now, she works as a research associate and assistant at the National Center for Public Health and Analyzes. She participated in a number of studies in the field of occupational health, in the development of the National Asbestos Profile of Bulgaria, participated in the training of OSH specialists. She has conducted a number of trainings in the field of occupational medicine: specialized training in occupational physiology, physical and chemical risks at the workplace, risk assessment at the workplace, occupational diseases, health status assessment. He speaks excellent German and working level English. Dr. Irina Dimitrova – Toneva is a

long-standing, experienced and qualified scientist in the field of occupational medicine.

General characteristics of the dissertation work

The presented dissertation has a volume of 176 standard pages and is illustrated with 51 figures and 27 tables. The number of literary sources is 300, of which 21 are in Cyrillic.

The structure of the dissertation meets all the adopted requirements and consists of an introduction - 4 pages, a literature review of 51 pages, divided into the following logically related parts: significance of the problem, economic and humanitarian burden; epidemiology of HBV, HCV, HIV; incidence of sharp injuries among healthcare workers, impact of individual positions - effects after the introduction of Directive 2010/32/EU; health consequences of sharp injuries - transmission of blood-borne pathogens; hepatitis B vaccination among healthcare workers – status and policies; prevention of sharp injuries and their possible consequences; injuries and safe medical devices; strategic documents, normative documents and studies of the sharp injuries in Bulgaria and a conclusion - formulating in 8 points questions requiring further research and justifying the importance of the dissertation, as well as a hypothesis for the research.

Topic relevance

Healthcare sector is characterized by the impact of a wide range of biological, chemical, physical, ergonomic and psychosocial risks and is therefore considered one of the most dangerous. Important is the risk of sharp injuries, where exposure to blood and biological fluids with blood-borne pathogens infection exists. Significant is the incidence of HBV, HCV and HIV infections - diseases of high public health burden among healthcare workers, due to occupational exposures. However, occupational health and safety aspects in healthcare sector are often neglected. There are gaps in the implementation of regulatory policies. At the European level, additional measures for education and information, increased awareness, regulation and policy planning and funding, as well as national surveillance of the types of accidents and circumstances of blood-borne infections are recommended. In this relation, the relevance of the topic of the dissertation is indisputable.

Literature review

In the review of literature, a thorough analysis of the scientific literature was carried out, demonstrating the comprehensive knowledge and understanding of the essence of the problem by Dr. Irina Dimitrova - Toneva. The importance of the problem, its economic and humanitarian burden, the epidemiology of HBV, HCV, HIV as a global health problem, as well as the prevalence of sharp injuries among healthcare workers and the impact of individual positions are examined in detail. The post-implementation effects of Directive 2010/32/EU, the status and policies regarding hepatitis B vaccination among healthcare workers are also discussed, outlining the problem that despite the efforts to promote vaccination, the percentage of immunized healthcare workers is insufficient. Issues regarding the prevention of sharp injuries in the context of the main strategic and national legislation

are also discussed. Studies of sharp injuries conducted in Bulgaria are presented in detail.

Purpose and tasks

The summary and conclusions formulated lead logically to the purpose and tasks. The purpose of the dissertation is formulated precisely and concretely, and the stages of the research are presented as 7 separate tasks that have been completed.

Material and methods

Aiming to achieve the purpose and fulfill the tasks of the dissertation work, the study covered an impressive number of respondents - 2,744 health workers from 19 hospitals in the city of Sofia. The chosen methods are justified with appropriate motivation. An adapted standardized blood exposure self-report questionnaire "Exposure of hospital personnel to blood and blood-borne infections" was used, along with a questionnaire on work characteristics and shift organization, stress, fatigue and subjective assessment of health status. Stressors and resources were assessed using a questionnaire based on the short version of the German Job Stress Analysis Questionnaire. The methods, collected and processed materials are precisely and accurately described. Mathematical-statistical methods are also appropriately chosen.

Results and discussion

Describing the results, the textual explanation follows the tables and graphs, after the appropriate introduction in the text of the relevant concepts. The discussion of the results comprehensively includes the relationships between the findings for the different groups. The in-depth comparative analysis with the literature sources provides the guidelines for summarization of the results. A high incidence of sharps injury incidents among hospital healthcare workers was found. The analysis of data defined the frequency of incidents in different occupational groups and workplaces - it is alarmingly high among midwives (83.8%), followed by nurses (mostly those working in surgical and emergency/intensive care units) and doctors (most common among surgeons, obstetricians and gynecologists, urologists and anesthesiologists). Overall, a high health risk was identified. On the other hand, a great part of healthcare workers did not report an incident, indicating their inaccurate perception of the risk of infection in an incident involving contaminated blood. Aiming to undertake and prioritize practical actions to solve the problem, one should take into consideration the identified insufficient participation of the Control Authority for Infections in Hospitals, unsatisfactory levels of pre- and post-exposure prophylaxis among health workers and the serious gaps in all aspects of regulatory framework application. As an important practical contribution I consider the outlined need to increase awareness, especially among healthcare professionals and older workers. In the context of the problematics in healthcare sector, the assessment of risk factors relating the frequency of sharp injuries with psychosocial factors such as work organization, main characteristics, fatigue and stress of workers, is theoretically and practically applicable. A significant relation between sharp injuries incidence and shift mode of work, number of night shifts per

month, duration of shifts and overtime was established. The 12 conclusions are logically formulated from the tasks of the study and summarize the most important results. The defined contributions are based on the research performed by the author and the results are well protected by the quality of the research. 8 practical recommendations were formulated.

Author's summary and publications related to the dissertation work


The structure and content of the author's summary of the dissertation are in accordance with the legal requirements. The most important characteristics of the scientific research and the obtained results are presented in a concise but comprehensive manner. The results obtained from the dissertation work are presented 8 scientific publications - 7 in Bulgarian and 1 in international journals, as well as 5 participations in scientific events.

Conclusion

The dissertation presented by Dr. Irina Dimitrova-Toneva is an independent and in-depth study of a clearly formulated and relevant problem and contains specific scientific-theoretical and scientific-applied results. The applied research methods are adequately selected and properly described. The results are presented comprehensively and in a logical sequence. The discussion of the results shows the qualification of Dr. Irina Dimitrova-Toneva and her capacity for in-depth analysis. The formulated conclusions give reason to expect that the results achieved will be practically applied.

Basing on the above, I give a POSITIVE VOTE for the dissertation work of Dr. Irina Dimitrova-Toneva and propose to the Scientific Jury that she was awarded the educational and scientific degree "PhD".

Sofia, 26 Oct. 2022



Assoc. Prof. Maya Lyapina, MD, PhD, D.Sc.