



ATTITUDE

BY

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Basis: member of the Scientific Jury, appointed by Order No. RD-20/15.01.2024 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. 30/11.01.2024).

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: Ralitza Ivailova Stoyanova, 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** "Stress and work capacity among healthcare professionals in hospital care".

Supervisor: Assoc. Prof. Katja Vangelova, PhD

The presented dissertation of Ralitza Ivailova Stoyanova 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

Ralitza Ivailova Stoyanova graduated from higher education with the educational-qualification degree "Ecologist - master's degree in environmental protection" at the Sofia University "St. Kliment Ohridski", Faculty of Biology in 2009. 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 professional experience has been successively as an independent expert in the field of ecology (2009 – 2013), then, until 2016, as an expert and from 2016 and currently works as an assistant at the National Center for Public Health and Analysis. Participated in a number of studies related to safety and health at work, assessment of occupational risk factors for different occupational groups, hormone screening. She has conducted a number of trainings and participated in seminars and webinars in the field of work physiology and psychology in Bulgaria and abroad. He speaks English well. Ralitsa Stoyanova is a qualified scientist in the field of work physiology.

General characteristics of the dissertation work

The presented dissertation has a volume of 141 standard pages and is illustrated with 30 figures and 31 tables. The bibliography includes 172 literary sources, of which 14 are in Cyrillic.

The structure of the dissertation meets the requirements and consists of an introduction - 2 pages, a literature review of 24 pages, divided into the following logically related parts: stress at work with discussed psychosocial risks in the workplace and occupational risk factors in health care; biochemical characterization of stress, biomarkers of stress; impact of stress and shift work on workers' health; concept of working capacity; conclusion as well as hypothesis for the research.

Topic relevance

The healthcare sector is characterized by the impact of a wide range of workplace risks, including psychosocial risks. Psychosocial risks can exert serious adverse effects on mental and physical health, as well as lead to negative economic consequences. Work-related stress is the second most common health problem after musculoskeletal disorders. According to the European Agency for Health and Safety at Work, psychosocial risks are considered more challenging and more difficult to manage than 'traditional' risks.

In connection with the staff shortage of health care specialists in hospital care, which has deepened over the years, frequent overtime and shift work, in lack of time, and unsatisfactory payment - factors that serve as an additional psychosocial stressor for this professional group. Another challenge is the increase in the average age of workers in this sector and the need for them to have a good level of work ability to meet the requirements of their work tasks, given the normal aging processes, the presence of chronic or other diseases. However, occupational health and safety aspects of healthcare workers are often neglected. In connection with the above, the relevance of the topic of the dissertation is indisputable.

Purpose and tasks

The conclusion drawn from the literature review, as well as the formulated hypothesis for the study, logically point to the goal and tasks. The purpose of the dissertation is formulated precisely and concretely, and the stages of the research are presented as 5 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 contingent - 1811 health care specialists from 19 hospitals in Sofia. The chosen methods are justified with appropriate motivation.

A stress evaluation questionnaire was used, based on the short version of the German Tool for Stress Analysis in Health Professionals with added questions on subjective assessment of high-tempo and stressful work and the need to maintain constant concentration. The subjective evaluation of health status and the presence of psychosomatic complaints were also tracked. In a group of 48 hospital nurses, salivary cortisol concentration was monitored in parallel with a questionnaire at the end of each work shift, including seven questions about various stress symptoms. Work capacity and its determinants were assessed using the Work Capacity Index developed by the Finnish Institute of Occupational Health. The methods, collected and processed materials are precisely and accurately described. Mathematical-statistical methods are also appropriately chosen.

Results and discussion

When describing the results, the textual explanation follows the tables and graphs, after the introduction of the relevant concepts in the text. In the discussion of the results, the relationships between the findings for the different groups have been comprehensively examined. Guidelines for summarizing the results are also provided by the comparative analysis with the literary sources. The main psychosocial risks and determinants of stress and work capacity have been identified for the covered contingent of health care specialists – shift, night and overtime work at the background of an aging workforce; characteristics of work requiring concentration and tension and performed at a high pace, emotionally demanding and unsatisfactory payment. The above contributes to the prevalence of psychosomatic symptoms. The high values of emotional and physical exhaustion ratings are objectified by the established levels of cortisol in saliva in nurses - a study carried out for the first time in our country. Factors determining the levels of work capacity among the studied population are discussed using the index of work capacity. I consider as an important practical contribution the outlined possibility to develop differentiated measures aiming to improve the work organization and to increase the work capacity for different health care specialists groups that are based on the analysis of the work capacity. Recommendations have been formulated to limit health risk for health care professionals in hospital care. The 12 conclusions formulated logically follow the tasks of the study and summarize the most important results. The defined contributions are based on the research results.

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 obtained results are presented in a concise but comprehensive manner. The results obtained from the dissertation work are presented by the doctoral student in 6 publications - 5 in Bulgarian and 1 in international scientific publications, as well as 6 participations in scientific events.

Conclusion

The presented dissertation work is an independent and in-depth study of an actual problem, with concrete scientific-theoretical and scientific-applied results achieved. Research methods are properly selected and properly described. The results are comprehensively presented, well-illustrated and in a logical sequence. The discussion of the results shows Ralitsa Stoyanova's good preparation. The formulated conclusions give grounds for expecting their practical applicability.

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

Sofia, 12 Feb. 2024



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