НАЦИОНАЛЕН ЦЕНТЪР ПО ОБЩЕСТВЕНО ЗДРАВЕ И АНАЛИЗИ
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OPINION

on the dissertation on the topic

"Economic and social effects of the implementation of an innovative training model for prevention and first aid after occupational accidents in the Republic of Bulgaria"

by **Slavi Hristov Pachalov**

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Prepared the opinion: Professor Plamen Stoyanov Dimitrov, MD, PhD - Elected as a member of the scientific jury by order No. RD-147/18.03.2026 of the Director of the National Center of Public Health and Analyses

Topicality of the dissertation

The topic of the dissertation, dedicated to the economic and social effects of the implementation of an innovative model for training in prevention and first aid in occupational accidents, is particularly relevant from both a scientific and practical point of view. In the modern economy, a large part of the population spends a significant part of their time at the workplace, which makes occupational safety and accident prevention a key element of public health and social protection policies.

Ensuring healthy and safe working conditions is a prerequisite for limiting accidents, reducing occupational diseases and increasing productivity. Effective prevention brings not only health benefits, but also significant economic and social effects, since occupational accidents lead to serious costs for the health system, social security and employers.

Despite the measures taken, occupational accidents remain a serious problem in a number of economic sectors. Incorrect or delayed provision of first aid can aggravate the condition of the injured person and lead to more serious consequences. Therefore, first aid training in the workplace has a crucial role in limiting adverse effects and increasing the readiness of employees to respond adequately in crisis situations.

An additional argument for the significance of the study is the need to improve existing training models and implement innovative approaches that will increase the effectiveness of training. New educational models can improve the knowledge and practical skills of employees, as well as develop the general culture of occupational safety.

In this context, the dissertation work has a significant contribution both to the development of scientific knowledge in the field of public health and occupational safety, and to the improvement of practical mechanisms for the prevention of occupational accidents and limiting their social and economic consequences.

Summary of the dissertation work

The dissertation work contains 175 pages and is illustrated with 63 figures and 17 tables. It is developed in six main chapters. The bibliography includes 171 literary sources.

Goals, objectives, methodological tools

In order to answer the research question, Slavi Pachalov sets as the main goal to develop an innovative training model for the prevention and provision of first aid after work accidents in the Republic of Bulgaria, as well as to assess its effectiveness, including the economic and social effects of its implementation.

To achieve the set goal, five clearly formulated tasks have been set for solution, which are aimed at: analyzing the regulation and conduct of first aid training in Bulgaria and by organizations and countries outside our country; creating an innovative model for conducting first aid training, which will contribute to the prevention of work accidents and more effective and timely provision of first aid; conducting a survey on the effectiveness of the developed innovative training model; analyzing the social and economic effects of the occurrence of work accidents, as well as the implementation of the innovative training model.

In the economic analysis carried out by the doctoral student, the hypothesis of the presence of a net present economic benefit from conducting first aid training is established and proven.

The methodological tools used in the dissertation work include a set of theoretical, empirical and statistical research methods that allow analyzing the effects of first aid training in the workplace and its social and economic results. Documentary analysis was very successfully applied to study data related to occupational accidents, as well as to analyze the costs of compensation and the socio-economic consequences of occupational injuries. This method allows using official statistical sources and regulatory documents related to health and safety at work. I highly appreciate the developed questionnaire (test) for assessing the theoretical knowledge of first aid of the trainees. The questionnaire was used to conduct entrance tests and to assess the effectiveness of the training. During the different stages of the study, the tests contained between 10 and 12 questions, with a total of 14 different questions used to test knowledge, which indicates the extremely good knowledge of the questionnaire method on the part of the doctoral student. Descriptive analysis was used to assess the social and economic consequences of occupational accidents and to interpret the results of the study. The dissertation applied a cost–benefit analysis (CBA) to assess the economic efficiency of first aid training. Through this approach, the doctoral student skillfully compared the costs of training with the potential economic benefits, such as reduced medical costs, hospitalization costs and compensation for occupational accidents. The results were appropriately expressed by the indicator net present benefit (NPB). Multiple statistical methods were also used to process and visualize the large amount of data collected.

Results obtained

The results of the study show a significant positive effect of the implementation of the developed innovative model for first aid training in the workplace. The study involved workers from different industries, and the testing process involved individuals with different education and professional experience.

The analysis of theoretical knowledge shows a significant improvement in the level of preparation of the trainees after the training. The share of correct answers to questions related to the basic principles of first aid increases significantly after each subsequent training. For example, for a question related to the general algorithm for first aid, the share of correct answers increases from 38.8% before the first training to 73.1% after it and reaches 84.0% after subsequent trainings, with statistical analysis showing high significance of the established differences ($p < 0.05$).

A similar trend was observed in the questions related to cardiopulmonary resuscitation, where the percentage of correct answers increased from 25.1% to 45.5%, and subsequently reached 70.0%, which confirms the positive impact of the training on the knowledge and skills of the participants.

In addition to increasing knowledge, the study also shows significant socio-economic benefits from implementing the training. The cost-benefit analysis conducted demonstrates that investments in first aid training can lead to a reduction in costs related to work-related accidents, medical care, hospitalization and compensation, as well as an increase in labor productivity.

The results obtained prove that systematic first aid training and the implementation of innovative training models can significantly improve the preparedness of workers for incident response, increase workplace safety and contribute to limiting the social and economic consequences of work-related accidents.

Conclusions and contributions

The author presents 8 conclusions, a logical conclusion to the dissertation work.

8 contributions have been made, of a scientific-theoretical and scientific-applied nature, which I accept. The dissertation work would have gained a lot if it had logically, based on the conclusions and contributions, derived recommendations aimed at specific institutions that are relevant to the issue.

Scientific publications

In connection with the dissertation work, 3 publications have been prepared, in all of which the PhD student is the first author. One of the publications is in journal indexed in Web of Science.

Abstract

The abstract fully reflects the achievements of the doctoral student, synthesizes the content of the dissertation and is fully compliant with the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the Regulations on the terms and conditions for acquiring scientific degrees and occupying academic positions at the National Center of Public Health and Analyses for the acquisition of the PhD degree.

Conclusion

I positively assess the presented dissertation. The basis for this assessment is the relevance of the problem, the significance of the set goal, the fulfillment of the set tasks, the modern methodological approach used and the results obtained. The dissertation of Slavi Hristov Pachalov demonstrates the competence of the author, his serious and profound scientific and practical interest in the field of first aid training in Bulgaria. The dissertation meets all the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the Regulations on the conditions and procedure for acquiring scientific degrees and occupying academic positions in the National Center of Public Health and Analyses. The above considerations give me reason to confidently propose to the members of the esteemed jury to highly evaluate the dissertation and to vote positively for awarding the PhD degree to Slavi Hristov Pachalov.

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/Prof. Plamen Dimitrov, MD, PhD/