

RECENSION

from

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Concerning: dissertation work for awarding the scientific and educational degree of
“doctor”

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Theme: „FLOODS – HEALTH AND ECOLOGICAL PROBLEMS FOR THE DANUBE REGION”

Supervisor: Prof. Hristianna Romanova, MD, PhD, DSc.

The dissertation work of the doctoral student has been discussed, accepted and scheduled for dissertation defense in front of a scientific jury of an extended departmental council of the Department of Disaster Medicine and Maritime Medicine of the Medical University of Varna “Prof. D-r Paraskev Stoyanov”.

D-r Petrova was born in 1971 in Lovech. In 1995 she graduated as MD from the Medical University of Pleven. From 1996 till 2016 she worked as a primary care physician at different positions. Since 2016 till now she is an assistant professor at the Department of Hygiene, Medical Ecology, Occupational Diseases, and Disaster Medicine, sector “Disaster Medicine”, at the Medical University of Pleven. She acquired specialties in Occupational Medicine and Disaster Medicine in 2020. She teaches Disaster Medicine and Medical Provision in Disasters to bachelor and magister students (in Bulgarian and English).

The work of D-r Petrova is dedicated to a contemporary and significant problem of public health not just on a national, but international scale as well. Analyses demonstrate a trend for constant increase in flooding events. They come first in frequency and incurred economic losses. This necessitates a profound and all around study, analysis and formulation of the most important problems to be solved by the institutions engaged in

protection, medical provision and increased awareness and preparedness of the population for proper conduct in floods.

The dissertation work of d-r Petrova presented to me for recension, has a total volume of 168 pages. It is illustrated with 10 tables, 44 figures, 7 maps, 3 schemes and 8 annexes. The bibliography includes 200 sources, of which 119 in Cyrillic and 81 in Latin. The primary sources date to the last years, which has allowed the doctoral student to present an in-depth review of literature, treating the subject in light of the most contemporary studies domestically and abroad. The dissertation work is written in contemporary scientific language and in good style. The doctoral student works correctly with the scientific terminology used in the text.

The literature review consists of seven parts in a way, that follows chronologically the main aspects of contemporary studies and publications, related to the problems researched by the author. Bulgarian and foreign publications from the last decade are competently analyzed. Especially in-depth, detailed and useful are the analyses and estimates of the doctoral student concerning: the significant risk of catastrophic floods in Europe and Bulgaria, the features and consequences of floods, medical provision for the population and the ecological problems taking shape.

In conclusion, I should note, that the synthesis of literature sources and the material presented in this chapter by the doctoral student, deserve a high merit. Exceedingly rich in detail, competently and critically appraised by the author, it demonstrates her high awareness in the concerned problematics. The analyses and conclusions made allow d-r Petrova to devise and successfully implement a rational and adequate to the concrete study contemporary methodology.

In the second chapter of the work, on the basis of the in-depth and critically performed literature review, the goal and tasks, as well as the program and methods for performing the scientific study, are clearly defined. Included are 5 tasks of concrete nature, whose implementation corresponds to the set main goal in view of defending the constructed hypothesis in the dissertation work. The tasks are sufficient in number, whereas the author has abstained from including an unnecessarily high number. Performing the set tasks requires an individual contribution from the doctoral student. Adequately and precisely are formulated the subject, signs of observation, the logical and technical units of the study, as well as the design and organization of the study, which all represents the essence of the dissertation work presented for recension. The size of the sample guarantees the achievement of representativeness and the high validity of obtained statistical results in the performed correlations. 240 Bulgarian citizens have been anonymously surveyed – 120

aged 18 to 39 and 120 aged 40 to 64. The reliability of individual primary data is very high. Data is processed using the statistical package IBM SPSS Statistics 19.

The methodological tools used to achieve the goal of the study is exhaustive and adequate to the needs for solving the set scientific tasks. They include description of the sociological methods involved in the study: document analysis; direct individual and group surveys through a specifically designed questionnaire, adapted realistically to Bulgarian settings, on the basis of the performed document analysis, as well as a critical analysis and synthesis of scientific literature.

When processing gathered primary data, the doctoral student uses the following statistical methods: descriptive analysis – arithmetic mean, standard deviation, relative and absolute frequencies. Tests for finding correlation between descriptive data - Тестове за изследване на зависимости между описателни данни – χ^2 Pearson test, Fischer's exact test, nonparametric Kruskal-Wallis test for comparing two or more independent samples. The presented material shows that the author has devised and implemented a contemporary and complex scientific methodology with the help of which she performs successfully her study on an overall massive scale while obtaining trustworthy and reliable results.

The next chapter of the dissertation work is titled "Own studies". The obtained results are presented and analyzed here, where all set tasks of the doctoral student are completely covered.

Analysis of the results from proprietary studies is performed on a good methodological level which has allowed the doctoral student to come to meaningful inferences and conclusions. Here are some of them:

- The main risk from floods in the Danube region is natural, where the areas with significant potential risk of floods comprise 49% of all populated places and municipalities;
- According to the preliminary assessment of risk of floods out of all functioning water bodies (rivers, lakes) 43.13% are in a state of serious risk;
- In the two studied municipalities of Pleven and Svishtov established and present are preliminary assessment and plan for managing the risk of floods, as well as a good organization of medical care;
- The performed study shows insufficient acquired knowledge and skills for protection in case of flooding, where a high percentage of respondents (70%) have the mind set for the necessity of increased awareness, knowledge and skills for protection in case of flooding or other natural disaster;

- For the sake of improving their theoretical and practical preparedness, more than 50% of all respondents have expressed their willingness for group participation in school, college or university-based course.

The presented conclusions and suggestions stem logically out of the material presented in the dissertation work. An institutional direction of the of the proposed recommendations addressed to academic circles, Ministry of Health, Main Directorate Fire Safety, Bulgarian Red Cross, regional and municipal authorities, and employers, is present and is of interest in both theoretical and practical aspect.

The work has its doubtless contributions. The contributions pointed out below may be acknowledged as a development of the theory and practice of medical provision in floods. I believe that the dissertation work has significant contributions and value in the following directions:

- The risk of floods for the Danube region is summarized and analyzed, together with the dependent factors and the possible health outcomes and ecological dangers for society;
- Certain schemes for early notification and alert of flood danger in hospitals are proposed together with an organizational scheme in principle for the initial distribution of affected population for evacuation and treatment;
- Major preventive measures in the activities of hospitals are presented, aimed at reducing the negative effects and limiting infectious outbreaks around the time of floods;
- Protocols for the preparation of hospitals are devised and activities and responsibilities of the management, medical personnel, transportation and patients at risk inside and outside the area of flooding, are prepared;
- Both proven and analyzed is the insufficient awareness and self-esteem of know-how and skills for conduct in floods in sociological studies of 240 Bulgarian citizens;
- Brochures have been prepared for raising the awareness and knowledge of the population on matters pertaining to floods.

The abstract meets the requirements of the Law for Career Development of the Academic Staff in the Republic of Bulgaria and the Statute for Application of the Law. It reflects correctly the structure and contents of the dissertation work, while accenting on the most important moments and conclusions from the studies.

In relation with the dissertation work the doctoral student has realized three scientific publications, reflecting on separate parts of the dissertation work.

I do not have significant critical remarks concerning the value of the dissertation work. I recommend d-r Petrova to popularize dully among her colleagues the obtained scientific results.

In conclusion I reckon that the dissertation work on the theme of “Floods – health and ecological problems for the Danube region” meets all criteria and giving my positive evaluation, recommend the members of the respected Scientific Jury to award entirely deservedly the educational and scientific degree of “doctor” to assistant professor Rositsa Vasileva Petrova.

23. 02. 2021
Sofia

Member of the scientific jury:



/Prof. Vili Zahariev, MD, PhD/