

REVIEW

by

Prof. Gergana Georgieva Petrova, PhD

Department of Nursing Care, Faculty of Public Health, Medical University – Plovdiv

Member of the scientific jury, appointed by Order of the Rector of MU-Varna "Prof. Dr. Paraskev Stoyanov" No R-109-60/27. 01. 2026, for a doctoral dissertation submitted for the award of the educational and scientific degree of "DOCTOR of PHYLOSOPY";

Topic: DIGITAL AND E-HEALTH LITERACY IN THE TRAINING OF BULGARIAN NURSES;

Author: *Neli Diyanova Petrova* – full-time doctoral student at the Department of "Social Medicine and Healthcare Management", Faculty of Public Health, MU – Varna "Prof. Dr. Paraskev Stoyanov";

Professional field: 7.4. Public Health.

Doctoral programme: "Management of Public Health";

Form of doctoral study: Full-time doctoral student.

Scientific supervisor: Prof. Iskra Slavcheva Mircheva, PhD

I. General Presentation of the Procedure and the Doctoral Candidate

Pursuant to the Order of the Rector of MU-Varna "Prof. Dr. Paraskev Stoyanov", Protocol No 1/02.02.2026, I have been appointed to prepare a *review (in Bulgarian and English)* for the procedure for the award of the educational and scientific degree of "Doctor of Phylosophy" with candidate *Neli Diyanova Petrova*.

The set of materials provided to me in both paper copy and electronic format for the preparation of this review is in accordance with the Academic Staff Development Act and the Regulations for the Development of Academic Staff at MU – Varna "Prof. Dr. Paraskev Stoyanov" (last updated by Protocol No. 35 of 09.02.2026), Section IV. Conditions and Procedure for Obtaining the Educational and scientific degree "Doctor", Annexes 1 and 2, and includes the following documents:

- Order of the Rector of MU – Varna "Prof. Dr. Paraskev Stoyanov" for the appointment of a scientific jury of 5 habilitated members;
- Application to the Rector for initiating a defence procedure;
- Curriculum vitae, signed by the doctoral candidate;
- Copy of the diploma for completed higher education at the Master's degree level;
- Enrolment order;
- Records of completed doctoral minimum examinations – in the specialisation and in a foreign language;
- Minutes of the department council with a positive decision on readiness for defence;
- Order for graduation with the right to defend;
- Declaration of originality;

- List of publications related to the topic of the dissertation, signed by the doctoral candidate;
- Photocopies of publications related to the dissertation topic;
- Declaration of accuracy of the submitted documents;
- Declaration of registration of profiles in scientific databases;
- Similarity report from the plagiarism detection programme from the Publishing Department of MU-Varna "Prof. Dr. Paraskev Stoyanov";
- Certificate of an active profile with a full list of scientific publications in Google Scholar and ORCID, issued by the library of MU-Varna "Prof. Dr. Paraskev Stoyanov";
- Certificate of acquired specialisation;
- Abstract in Bulgarian and English – formatted according to the requirements;
- Dissertation.

Lecturer Neli Diyanova Petrova – full-time doctoral student at the Department of "Social Medicine and Healthcare Management", Faculty of Public Health, MU – Varna "Prof. Dr. Paraskev Stoyanov" – was graduated by Order of the Rector of MU-Varna "Prof. Dr. Paraskev Stoyanov", Order No. R-109-60/27.01.2026.

I would like to note that the documentation submitted to me in both paper copy and electronic format is **diligently and well organised and provides a complete picture of the candidate.**

The doctoral candidate presents 2 full-text scientific publications, published in the journal Varna Medical Forum. The journal is included in the National Reference List of Contemporary Bulgarian Peer-Reviewed Scientific Publications, issued by MU-Varna. *A favourable impression is created by the fact that the doctoral candidate is the sole author of all publications*, which is itself a guarantee of her genuine contribution to each of the presented scientific works on the dissertation topic.

II. Brief Biographical Information about the Doctoral Candidate

Lecturer Neli Diyanova Petrova – full-time doctoral student at the Department of "Social Medicine and Healthcare Organisation", Faculty of Public Health, MU – Varna "Prof. Dr. Paraskev Stoyanov" – was born in Varna. In 2007, she obtained a Bachelor's degree in "Business Management" from Varna Free University "Chernorizets Hrabar – Varna". In 2009, she obtained a Master's degree in "Public Health". Since 2016, she has acquired a specialisation and is a specialist in "Medical Informatics and Health Management".

She began her academic career as a part-time assistant in the winter semester of the 2019/2020 academic year at the Department of "Social Medicine and Healthcare Organisation", Faculty of Public Health, MU – Varna "Prof. Dr. Paraskev Stoyanov". Later, after winning a competition, she was appointed as a full-time assistant in the Department of "Medical Equipment, Electronic and Information Technologies in Healthcare". In 2021, she was appointed head of the first-year group for the specialisation "Biomedical Engineering and Technology" – both full-time and part-time programmes. After winning a competition, she was enrolled in a doctoral programme (full-time) at the Department of "Social Medicine and Healthcare Organisation", Faculty of Public Health, MU – Varna "Prof. Dr. Paraskev Stoyanov".

Since 2025, she has been appointed as a lecturer in the Department of "Medical Equipment, Electronic and Information Technologies in Healthcare" at the same faculty.

Relevance of the Topic and Knowledge of the Problem

The dissertation is structured with an introduction and three chapters, followed by a conclusion, findings, contributions, recommendations, bibliography, appendices and questionnaires. It spans a total of 149 pages and is illustrated with 40 tables and 79 figures. Three appendices are attached.

The topic chosen by doctoral candidate **Neli Diyanova Petrova** is highly relevant. Her strong educational and pedagogical background enables her to conduct an in-depth study of digital and e-health literacy in the education of Bulgarian nurses. The author demonstrates good familiarity with the problem under discussion, as well as with its adjacent areas. In the work, a total of 228 references are cited, all in Latin script, 17.5% of which were published in the last five years.

Introduction – *a favourable impression is created by the fact* that the doctoral candidate skillfully guides the reader into the topic by describing the reasons for choosing the subject, its significance and contribution. The introduction is one page in length.

The literature review spans 23 pages and is well structured and formatted. It reflects not only the doctoral candidate's thorough knowledge of the topic but also the precision and relevance of her approach to the subject. A positive impression is made by the author's terminological and conceptual clarifications. The doctoral candidate examines the essence and importance of the modern concept of e-Health, the new concept of digital literacy, and specifies health-related information literacy and digitalisation. She systematically addresses problem-solving using digital technologies, the development of digital literacy in healthcare, and among healthcare professionals. Particular attention is given to the impact of digital literacy on student nurses, the necessity of digital literacy for nurses, and communication and collaboration in healthcare through digital technologies. The e-health literacy of nurses is examined in particular detail, with both enabling and risk factors for its development outlined.

A favourable impression is created by the concise presentation of problems in e-healthcare in Bulgaria and the well-argued need for the introduction of a Nursing Informatics academic discipline, as well as the development of an appropriate teaching module in this field.

Notable is the precise development of Chapter Two: Research Methodology. In this chapter, the research hypotheses (four in total) are well formulated and serve as a solid foundation for the successful development of the overall dissertation research.

The objective is clearly, precisely, and accurately formulated. An optimal number of tasks – 7 – are identified to achieve the objective.

The subject and object of the study, its indicators and units, are clearly and precisely defined. The applied research methods are appropriate, and the supplementary instruments are noteworthy. The overall methodological framework of the dissertation research is underpinned by the logical sequence of its execution.

Characteristics and Assessment of the Dissertation

Chapter Three: Empirical Analysis of E-HEALTH Skills in Nursing Education in Bulgaria presents **the results of the study**.

This chapter is considered particularly valuable and carries the greatest weight and contribution to the overall dissertation research. The original research of doctoral candidate

Neli Diyanova Petrova is based on results obtained from questionnaires developed for this purpose: a Questionnaire for Assessing Digital and e-Health Literacy in the Work of Bulgarian Nurses and a Questionnaire for Assessing Digital and e-Health Literacy in the Education of Bulgarian Nurses. The results obtained and their discussion fully address the research questions posed. The objective and tasks also directly correspond to the conclusions drawn. During the research, the doctoral candidate – under the supervision of her scientific supervisor – applied validated questionnaires, covering 101 practising nurses and 110 students from the "Nursing" programme.

The results are appropriately illustrated through tables and colour figures. At the end of this chapter, through statistical hypothesis testing, consolidated findings are logically derived. Based on the results of this chapter, the doctoral candidate proposes the inclusion of a module entitled "Nursing Informatics and Critical e-Health Literacy" in the training process of nurses (and/or other healthcare professionals). The module has a total duration of 15 teaching hours and is structured to meet the needs of practical integration of e-health skills. *The development of this module is of a distinctly applied and practical nature.*

Additional weight to the dissertation research is provided by the well-structured conclusion.

Contributions and Significance of the Work for Science and Practice

Thirteen significant findings are presented, along with specific recommendations addressed to healthcare institutions, higher education institutions, professional organisations and the management of medical establishments, aimed at enhancing the digital and e-health competence of nurses. Three theoretical contributions and four applied contributions are formulated.

Personal contribution of the doctoral candidate: The submitted dissertation has been carried out entirely by the author.

III. Abstract

The abstract spans 66 pages and meets the requirements for this type of document. Its content and formatting provide a comprehensive overview of the entire dissertation.

IV. Personal Impressions: None.

In conclusion, I would like to express my conviction that the submitted dissertation possesses all the qualities required for this type of work. The overall research has been carried out with accuracy and precision. The data analysis has been performed correctly. The work is the sole achievement of the candidate and demonstrates that the author has the qualities and skills necessary for conducting independent scientific research.

The scientific work submitted to me for review fully meets the requirements of the Academic Staff Development Act and the Regulations on the Conditions and Procedure for Acquiring Academic Degrees and Occupying Academic Positions at MU – Varna "Prof. Dr. Paraskev Stoyanov".

From this position, I respectfully propose that the members of the scientific jury duly recognise the scientific work thus presented.

All the facts presented above give me solid grounds to confidently express my positive assessment and to propose that the distinguished scientific jury **VOTE IN FAVOUR AND AWARD Neli Diyanova Petrova THE EDUCATIONAL AND SCIENTIFIC DEGREE OF "DOCTOR"** in professional field 7.4. Public Health, under the doctoral programme "Management of Public Health".

18.03.2026

Plovdiv

Заличено на основание чл. 5, §1, б. „В“ от Регламент (ЕС) 2016/679
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Prepared by:

(Prof. Gergana Petrova, PhD)