

## STATEMENT

by Prof. Makreta Todorova Draganova, MD, PhD

Head of the Department of Health Care Management, Medical Ethics and Information Technologies; Vice Dean of the Faculty of Public Health, Medical University – Pleven; appointed as a member of the Scientific Jury by Order No. R-109-60 dated 27.01.2026 of Prof. Dr. Dimitar Raikov, MD, PhD, Rector of Medical University Prof. Dr. Paraskev Stoyanov, Varna, and by Minutes of meeting No. 1/02.02.2026 of the Scientific Jury, designated for the preparation of a Statement on the dissertation thesis entitled:

### **“DIGITAL AND E-HEALTH LITERACY IN THE TRAINING OF BULGARIAN NURSES”**

developed by Neli Diyanova Petrova, a full-time doctoral student in the doctoral programme “Public Health Management”, professional direction 7.4. Public Health, enrolled by Order No. P-109-513/01.12.2021.

**Scientific supervisor:** Prof. Iskra Slavcheva Mircheva, MD

#### **1. Outline of the procedure and brief biographical and career profile of the doctoral student**

By Order No. R-109-513/01.12.2021 of Prof. Dr. Valentin Ignatov, MD, PhD, Rector of Medical University – Varna, Neli Diyanova Petrova was enrolled as a full-time doctoral student in the doctoral programme **“Public Health Management”** in the field of higher education **7. Health and Sports**, professional field **7.4. Public Health**, at the Department of Social Medicine and Health Care Organization, Faculty of Public Health, Medical University – Varna.

The period of study is three years, starting on 01.12.2021.

The submitted set of documents, in both paper and electronic format, complies with Article 69 of the Rules and Regulations for Academic Staff Development of MU “Prof. Dr. Paraskev Stoyanov” – Varna (2022) and includes all required documents.

The documentation also includes the protocol of the foreign language examination and the protocol of the PhD minimum examination.

Neli Diyanova Petrova was born in 1984 in Varna, Bulgaria. In 2007, she graduated with a Bachelor’s degree in Business Administration from Varna Free University “Chernorizets Hrabar”, Varna, and in 2009 she obtained her Master’s degree in Public Health from Medical University – Varna. In 2016, she acquired a recognized specialty in Medical Informatics and Health Management.

The doctoral student is registered in ORCID and has an ORCID ID and a Google Scholar profile.

Neli Petrova began her teaching career in 2019 as a part-time Assistant Professor at the Department of Social Medicine and Health Care Organization, Faculty of Health Care, Medical University – Varna, where in 2021 she was enrolled as a full-time doctoral student. In 2020, she was appointed as a full-time Assistant Professor at the Department of Medical Equipment, Electronic and Information Technologies in Health Care of the same faculty and teaches in the specialty **Nursing and Midwifery**.

Neli Petrova is fluent in English and has excellent computer literacy.

## **2. Overview of the thesis and its relevance**

### **Relevance of the topic**

The topic proposed by Neli Petrova is of considerable relevance. Given the daily use of information and communication technologies to improve health care services, diagnostics, and health management, the digital competence of nurses is essential.

The responsible management of patient health information and its registration in a personal Electronic Health Record (EHR) have been one of the major challenges for practicing nurses in recent years. A number of studies conducted in Bulgaria demonstrate that the adequate competence of health care professionals is an objective prerequisite for the effective implementation of electronic health care in the country.

The objective significance of the problem requires further research in the field and the search for alternatives to optimize digital and e-health literacy in the training of Bulgarian nurses. This is also the main aim of the dissertation thesis.

### **Thesis structure**

The dissertation is structured in a classical research format and includes the following three main chapters: Chapter 1 – Literature Review; Chapter 2 – Methodology of the Study; Chapter 3 – Empirical Analysis of E-health Skills in Nursing Education in Bulgaria. It also includes conclusions, recommendations, and contributions and comprises a total of 149 standard pages. It is illustrated with 79 figures, 40 tables, and 3 appendices. The dissertation submitted for review includes a sufficiently rich bibliography consisting of 228 sources, of which 4 are in Bulgarian and 224 are in Latin script.

## **3. Evaluation of the structural parts of the dissertation**

### **Literature review and awareness of the issue**

Neli Petrova demonstrates comprehensive knowledge of the issue. She has conducted an in-depth analysis and offers a creative evaluation of the available literature relevant to the topic. The review is logically structured into ten main parts, each of which includes five

sections. In the literature review, the doctoral student demonstrates competence regarding the historical development of digital literacy.

Data from studies conducted in Bulgaria have been analysed, proving awareness of the problem and a positive attitude towards e-health care on the part of nurses and midwives, as well as the need to increase digital literacy among practicing health care professionals. The doctoral student presents data and results from a number of studies demonstrating an increasingly tangible need for change in this direction.

The review is written in an academically appropriate style. In terms of volume, the literature review is proportionate to the overall thesis. The references are cited fully and accurately. Most of them are from the last decade.

### **Research methodology**

The main objective of the study is to identify, analyse, and assess the levels of digital and e-health literacy among nurses and nursing students by constructing and testing index structures to measure key aspects of digital competencies.

Seven tasks are completed within the framework of the study, and they are logically and adequately formulated in order to achieve the aim.

Four working hypotheses relevant to the aim and objectives of the research were outlined.

The study included two groups of participants:

- 101 nurses selected through stratified random sampling from the University Hospital “St. Marina”, Varna;
- 110 students majoring in **Nursing** at Medical University “Prof. Dr. Paraskev Stoyanov”, Varna.

The study was approved by the Research Ethics Committee (REC) of MU – Varna (Protocol No. 5/17.10.2024).

The questionnaire developed for the purposes of the study is original and comprehensive. It is based on European and international studies, such as the Digital Health Literacy Instrument and established international concepts, and was subsequently adapted to the Bulgarian context. It includes six information domains of digital and electronic health literacy.

The selected research methodology contributes to the achievement of the predefined aim and provides an adequate response to the tasks addressed in the dissertation.

**The results** are presented clearly, in a well-structured and logical sequence corresponding to the seven tasks of the study.

The relationship between the hypotheses and the analysis of the results is skilfully presented. It is demonstrated that age, professional experience, and education are significant factors for a large part of the six indices studied.

Based on the results and the corresponding analysis, the inclusion of a module entitled “Nursing Informatics and Critical E-Health Literacy” in the education of students majoring in Nursing is proposed. The proposed programme has a teaching load of 15 hours, and alternatives for the implementation of the curriculum are offered. The recommendations for the use of simulation environments and digital training platforms to improve the digital competencies of the modern nurse deserve special attention.

The thirteen conclusions in the dissertation are based on the main components of the study—the theoretical part, as well as the quantitative and qualitative research—and are relevant to the tasks of the study.

#### **4. Overall assessment of the thesis and its contributions**

I fully accept the contributions of the **cognitive-theoretical and practical-applied nature** presented by the doctoral candidate. The dissertation is an in-depth study of such a current issue as the challenges of modern nursing practice in the context of digitalization and the opportunities for optimizing the competencies of health care professionals in the field of digitalization and information technologies.

One of the strengths of the dissertation is the idea of introducing innovations into nursing curricula related to an individualised and personalised approach to training, which would allow each student to adapt according to their level of digital competence. Emphasis is placed on the need for nurses to complete their education with an acceptable level of literacy in the field of e-health, as well as with skills that will enable them to apply modern technologies effectively in the treatment and care of patients, i.e. to provide better health services and health education to the community.

**The abstract** correctly reflects the structure of the dissertation and contains the most significant results and conclusions of the study.

Two thesis-related papers are referenced, including one actual publication in a collection of papers in *Varna Medical Forum 2025*, 14(2), of which the doctoral student is an independent author.

I have no personal impressions of the doctoral student. My indirect impressions are of a thorough researcher, analyst, and innovator who should periodically apply the tested toolkit to all medical specialists.

#### **CONCLUSION**

The presented dissertation is distinguished by its topicality, originality, methodological innovation, and precision. The overall organization and conduct of the study are the personal work of the doctoral candidate and prove her strong research capabilities.

The dissertation contains scientific and scientifically applied results that represent an original contribution to science and meet the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria (LDASRB), the Regulations for its implementation, and the regulations of MU – Varna. The submitted materials and dissertation results comply with the specific requirements adopted in connection with the regulations of MU – Varna for the implementation of the LDASRB.

The dissertation work demonstrates that the doctoral candidate, Neli Diyanova Petrova, possesses in-depth theoretical knowledge and professional skills in the scientific specialty “Public Health Management”, and shows qualities and abilities for independent scientific research.

In view of the above, I give my *positive evaluation* of the conducted research presented in the reviewed dissertation, abstract, and achieved results and *contributions, and I propose to the esteemed members of the Scientific Jury that Neli Diyanova Petrova be awarded the educational and scientific degree of Doctor in the scientific specialty “Public Health Management”*.

20.03.2026

Prepared the statement:

(Prof. M. Draganova, PhD)

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