

REVIEW

by **Assoc. Prof. Maria Dimitrova Rohova-Yordanova, PhD**

Health Economics and Management Department, Faculty of Public Health, Medical University - Varna

of PhD thesis for obtaining an educational and scientific degree "Doctor" higher education field 3. *Social, Economic and Legal Sciences*, professional subfield 3.7. *Administration and Management*, scientific specialty "*Organisation and Management outside the Sphere of Material Production (in Healthcare)*"

PhD candidate: **Valeriya Veselinova Nikolova**

PhD thesis: **System of indicators for measuring and evaluating the quality of healthcare in Bulgaria**

Scientific supervisor: **Prof. Antoniya Slavcheva Dimova-Yordanova, PhD**

The review is prepared according to the Order № P-109-194/28.04.2022 of the Rector of the Medical University - Varna and Proceedings № 1/11.05.2022 of the scientific jury meeting for determining reviewers on the procedure for awarding educational and scientific degree "Doctor" with candidate Valeriya Nikolova.

1. General information about the procedure

Valeriya Veselinova Nikolova has completed a doctoral program in *Organisation and Management outside the Sphere of Material Production (in Healthcare)* in the professional subfield 3.7. *Administration and Management*, higher education field 3. *Social, Economic and Legal Sciences*. The PhD candidate has been enrolled in full-time education by Order № P-109-85/01.02.2019 of the Rector of the Medical University - Varna at the Health Economics and Management Department under the scientific supervision of Prof. Antoniya Dimova-Yordanova, PhD with the topic of the PhD thesis *System of indicators for measuring and evaluating the quality of healthcare in Bulgaria*. The PhD candidate passed the exams of the doctoral program successfully, completed all the activities in the individual curriculum, collected the necessary ECTS credits and had positive attestation marks for all academic years of study. The doctoral program was completed on time, and Valeriya Nikolova was disenrolled with the right to public defence by Order № P-109-62/02.02.2022 of the Rector of MU-Varna. Based on a decision of the Department Council of the Health Economics and Management Department (Proceedings № 6/19.04.2022) and a decision of the Faculty Council of the Faculty of Public Health (Proceedings № 184/202.04.2022), Valeriya Nikolova has granted the right of public PhD defence by Order № P-109-194/28.04.2022 of the Rector of MU-Varna.

The required documents in compliance with the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its Application and the Regulations for the Development of the Academic Staff at MU-Varna have been submitted.

2. Brief information about the PhD candidate

Valeriya Nikolova graduated from the High School "Najden Gerov" in Varna with a foreign language profile. She holds a bachelor's degree in Healthcare Management (2012) from the Medical University "Prof. Dr P. Stoyanov" – Varna. In 2015, she obtained a master's degree in Pharmaceutical Management at the Medical University – Varna. Since 2020, she has been enrolled in a specialisation in Medical Informatics and Health Management at the Medical University - Varna. In 2020, she completed an online course in Leading Healthcare Quality and Safety at George Washington University.

Valeriya Nikolova began her professional career in 2011 as a medical representative at the pharmaceutical company ABO Pharma in Varna. From 2016 to 2017, she was involved as an organiser of curricula and academic programs at the Medical University "Prof. Dr P. Stoyanov" - Varna. Since 2017, after winning a competition, he has been employed as an assistant professor at the Health Economics and Management Department, Faculty of Public Health, Medical University - Varna. Valeriya Nikolova holds seminars in Management Theory, Introduction to Healthcare Management, Health System Organization, Quality Management in Healthcare, Change Management in Healthcare, Human Resources Management, Organisational Behavior and Leadership in the bachelor and master programs in Healthcare Management, Pharmaceutical Management, Optometrist, Management of Nursing Care and Information Technology in Health Care. She is a member of the Bulgarian Scientific Union of Public Health. She speaks English.

Valeriya Nikolova has participated in scientific forums, including abroad, has publications in scientific journals, and is involved in the research project "Health System Performance Assessment in Bulgaria: Efficiency, Equity, Resilience", funded by the Fund "Nauka" of the Medical University - Varna. Her teaching and research experience has proven professional commitment, consistency and purposefulness in finding solutions to significant problems and challenges for science and practice.

3. General characteristics of the PhD thesis

The PhD thesis embraces a total volume of 182 pages, of which 123 are the essential part. All parts of the content are logically interconnected. The thesis includes an introduction, research design, theoretical bases of quality in healthcare and approaches for its measurement and evaluation (first chapter), measurement and evaluation of the quality of healthcare in Bulgaria (second chapter), attitudes and information needs of citizens and medical professionals to quality and its measurement (third chapter), a system for measuring and evaluating the quality of healthcare (fourth chapter) and conclusion. The PhD thesis contains four appendices with a total volume of 40 pages, presenting the results of the analysis of the legislation for measuring and assessing the quality of healthcare in Bulgaria and the main research tools - questionnaires for citizens and medical professionals.

The results are well illustrated with 26 tables and 32 figures. A total of 175 publications are presented in the reference list, of which 53 are in Bulgarian and 122 - in English. The cited publications correspond to the research problem and embrace an extended period - from 70 years of the 20th century to 2021. Most of the cited sources were published in the last ten years, demonstrating the author's awareness of the contemporary views in the field. The sources are appropriately cited and provide reliable evidence of the proposed ideas and solutions.

4. Relevance and significance of the research problem

The PhD topic is one of the most significant problems of health systems, which has been relevant for several decades. The PhD thesis of Valeriya Nikolova approaches this issue through a different perspective, which has been underresearched in Bulgaria - the effective health systems performance and its assessment.

Systematic measurement, monitoring and evaluation of medical care are becoming increasingly important in the current context, with current trends and changes affecting healthcare. This problem concerns not only the single health care establishment but also the health system as a whole and its capacity to meet the patients' needs and perform its core functions. Since this issue does not only concern the national health system, it has been recognised internationally. This stands out as one of the main highlights of international organisations' policies, such as the World Health Organization, the Organisation of Economic Co-operation and Development, the Commonwealth Fund and their programming documents. In many countries, systems of indicators for measuring and assessing the quality of healthcare have been developed and constantly updated, serving as a basis for assessing the health system performance and its ability to achieve better outcomes. All this proves the significance and relevance of the research problem.

The quality of healthcare in Bulgaria and its measurement and evaluation at the national level have been not sufficiently explored. Numerous studies have been conducted on the quality of health services, quality assessment at the local level, and measuring the quality of medical care in different health care establishments. However, at the national level, from the health system perspective, there is a shortage of studies for Bulgaria. The topicality is convincingly argued, both in theoretical and applied aspects. The professional training of the PhD candidate also contributes to the scientific and applied results of the research. This gives me a reason to appraise the research problem as topical and dissertable.

5. Research design

The aim of the study is precisely defined and well-argued based on the literature review and the current problems in the context of the national health system performance. The aim is to *develop a system of criteria and indicators for measuring and evaluating the quality of healthcare in Bulgaria*, which contributes to quality management at the national and local level, as well as meeting the information needs of medical professionals, patients and society as a whole. Achieving this goal results from the implementation of five research objectives, which cover in a logical sequence the main phases of the research. Three theses have been formulated, and there is a clear relationship between the theses, the aim and the objectives of the study. These theses are consistently proven by the performance of research objectives.

According to the problem statement and the aim, the research's object and subject are appropriately defined.

The research methods include analysis and summary of scientific publications, content analysis of conceptual frameworks for health system performance assessment in different countries, analysis of regulations, analysis of quality of healthcare in Bulgaria, and sociological surveys among two categories of respondents (citizens and medical professionals) with specially developed tools (questionnaires) and statistical methods for the analysis of research results (graphical method, analysis of results with one-dimensional distributions and cross-

tabulations and statistical methods for dependency testing). The methods are purposefully selected, well-founded and directly related to the research's aim, objectives and theses. The PhD candidate has also correctly indicated the research limitations, which are mainly related to the research approach and methods of the study.

The study is well constructed, including all the necessary details that determine its design. The particular components are logically connected. Indisputable advantages are the in-depth analysis of the legislation, the existing information sources in Bulgaria, as well as conducted sociological surveys among citizens and medical professionals, which despite the limitations, allow studying the problem through the lens of health care providers and consumers of health services. This makes the obtained results interesting and significant.

6. Evaluation of the structure and content of the study

The **first chapter** presents the theoretical statements on the research problem. The literature review is relatively thorough and purposeful. It demonstrates the awareness of the PhD candidate on current issues of the research topic, as well as the ability to summarise, systematise and interpret scientific concepts and ideas.

The theoretical statements about the content and understandings of quality in general, quality of and quality in healthcare, and the approaches and tools used for its measurement and evaluation are summarised and analysed. Various authors' opinions on the nature of quality are considered, and its distinctive features are derived. The definitions of quality in healthcare are analysed, emphasising its particularities and essential characteristics and the so-called quality components. An important part of the study is clarifying the difference between the quality of and quality in healthcare and outlining the scope and levels of analysis of the two concepts. The author expresses a reasoned point of view on some controversial theoretical statements.

Summaries of quality measurement and evaluation and the systematisation of the various approaches and tools used internationally are essential for operationalising the understanding of the quality of healthcare. An interesting point is the study of the international experience in health systems performance assessment and systematising the criteria and indicators for quality measurement. A total of 15 conceptual frameworks and their sets of indicators for measurement and evaluation were studied, and 905 quality indicators were derived. This significant study of international experience provides a reliable foundation for developing a system of indicators for measuring and assessing quality, consistent with the specifics of healthcare in Bulgaria. The literature review ends with summaries and conclusions that correspond to the aim and objectives of the research.

The **second chapter** systematises and analyses the regulations used to ensure the quality of medical care in Bulgaria, the existing practices for measuring and evaluating the quality of healthcare, and the available data. The information is systematised according to several criteria based on the literature review. The analysis of the current legislation and medical standards follows the components of the quality of healthcare presented in the first chapter, which allows not only to highlight the primary deficiencies in the regulatory requirements but also to outline opportunities for their improvement, which is one of the significant contributions of the research. The second chapter ends with an analysis of the available data on the quality of healthcare in Bulgaria, based on which the areas for amplification and verification of the information are identified.

The results of the conducted sociological surveys and their discussion are exhaustively presented in the **third chapter** of the PhD thesis, in which two main parts are distinguished. The first part analyses the results of the survey among citizens. The method for collecting information and the steps in conducting the study, as well as the limitations are accurately described. The demographic and socio-economic characteristics of the respondents are commented. The citizens' perceptions about the quality of healthcare, their needs for information, and their opinion about the quality of healthcare in Bulgaria were studied. This confirms the results of other studies on the need for formal information sources about health care establishments and the quality of medical care they provide. The study pays special attention to the patients' understanding of 'high quality', examined through the perspective of the quality components.

The second part of the third chapter presents the results of a survey conducted among medical professionals. They provide a valuable perspective, complementing the results of the previous survey and at the same time highlighting some important differences in the perceptions of key stakeholders. This enables the identification of the basic problems that hinder the quality assurance of the provided health services. Based on the results of the two surveys, the assessments of the citizens and medical professionals for the quality of healthcare in Bulgaria are also compared. The components of quality that should be used for its assessment at the national and local levels, according to the respondents, are also summarised. This allows for identifying differences in the perceptions of citizens and medical professionals. At the end of the third chapter, the information needs of the two groups of respondents are summarised, and the conclusions are outlined.

In the **fourth chapter**, based on the results of the analyses and surveys, a conceptual model of a system of indicators for measuring and evaluating the quality of healthcare in Bulgaria is proposed. The conceptual model is presented consistently and reasonably, defining its purpose and scope. The model embraces the quality components related to the structure, process or result depending on the problems and levels at which their solution is sought. An indisputable contribution of the PhD thesis is the developed system of indicators for measuring and evaluating the quality of healthcare in Bulgaria, including 89 indicators grouped by quality components and the relevant evaluation criteria. The operationalisation of the conceptual model is essential for healthcare quality management and its continuous improvement. The indicators also guide the necessary data and information to be collected, summarised at different health system levels. The consistent study of the research problem and the application of a sound methodological complex purposefully constructed provides a reliable justification of the presented conceptual model and the system of indicators. At the end of the fourth chapter, an approach for implementing the system is proposed. Thus, the study is complete.

In general, the PhD thesis follows the logical sequence set by the aim and objectives of the study. The scientific style is followed. The results give me a reason to conclude that the aim of the dissertation has been achieved.

7. Contributions and significance of the PhD thesis to the science and practice

The abstract of the PhD thesis points out five contributions. The predominant part of them has an applied character. Understanding the different levels of quality definition (quality of and quality in healthcare) is substantiated and developed. A relation is made between this understanding and the health system performance assessment concept. A significant

contribution to the management of the quality of healthcare in Bulgaria is the proposed conceptual model and the developed system of indicators for measurement and evaluation based on the quality components. Research tools for studying the perceptions and attitudes of citizens and medical professionals to the quality of healthcare in Bulgaria and its measurement have been developed and tested. Based on the results, their information needs have been identified. The possibilities for measuring the quality of healthcare in Bulgaria, provided by the current regulatory framework and the available data, are analysed. The need for improving the existing regulatory framework and the information provision is substantiated. The outlined approach for implementing a system for measuring and assessing the quality of healthcare in Bulgaria deserves special attention.

These contributions result from in-depth and focused research and reflect the achievements of the study. The significant problem to which the dissertation is dedicated provide an opportunity to expand and continue the research.

8. Publications on the PhD thesis

The author's abstract indicates three publications on the dissertation topic. Two publications were presented at scientific forums: one in Bulgaria and one in Slovenia, published in English in an international edition. The presented publications cover the minimum scientific requirements for obtaining the educational and scientific degree "Doctor" in the professional subfield 3.7. Administration and Management, according to the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its Application and the Regulations for the Development of the Academic Staff at MU-Varna. They were published in 2020 and 2021 and reflect some highlights and results related to the different parts of the study.

9. Assessment of the PhD thesis abstract

The abstract of the PhD thesis is prepared in a volume of 45 pages, with reference to the contributions and a list of publications on the topic. It meets the requirements and, in a synthesised form, reflects the dissertation's content. In the abstract, the PhD candidate focuses on the research design and presents the main results, the author's solutions, and recommendations on the research problem.

10. Critical remarks and questions to the PhD candidate

During the discussion of the dissertation's draft in the Health Economics and Management Department, I made several critical remarks and recommendations to the PhD candidate, which she conscientiously has reflected in the final version.

However, when analysing the results of the sociological survey among citizens, it should be taken into account that the survey was conducted online, following an invitation on social media, which implies the so-called voluntary response bias. Although the PhD candidate correctly described the data collection method and pointed out the limitations, it should be noted that citizens' information needs are mainly outlined for a particular group with specific demographic and socio-economic characteristics. It is not entirely clear to what extent they would remain the same if the profile of the respondents changed. From this perspective, I recommend that the PhD candidate continue her research on the problem.

The PhD thesis is an author's product, demonstrating the professional competence and high commitment of the PhD candidate in the issue, as well as competence for planning and conducting scientific research. The mentioned remarks and recommendations do not change the overall positive impression of the study and the skills for theoretical generalisations and empirical analyses demonstrated by the PhD candidate.

I would like to raise the following questions to the PhD candidate:

- (1) Would other stakeholders' viewpoints change the balance in the proposed system of criteria and indicators for assessing the quality of healthcare in Bulgaria?
- (2) The study has identified significant deficits in terms of information quality assurance. If it is not possible quickly to organise their filling in, which data collection should be given priority?

11. Conclusion

The PhD thesis examines a significant problem for the health systems performance and its assessment, which is not sufficiently explored in Bulgaria. The research is planned and conducted precisely and reflects the sound theoretical knowledge of the PhD candidate and her skills for analysing empirical results and, on this basis, drawing sound conclusions and recommendations. Specific scientific and applied contributions have been achieved, which outline opportunities for development.


The PhD thesis meets the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its Application and the Regulations for the Development of the Academic Staff at Medical University – Varna.

The mentioned strengths of the PhD thesis are the reason to give a **positive assessment** and to offer the award of educational and scientific degree "Doctor" in the scientific specialty "*Organisation and Management outside the Sphere of Material Production (in Healthcare)*" in professional subfield 3.7. *Administration and Management* of **Valeriya Veselina Nikolova**.

June 14, 2022

Varna

Reviewer:



/Assoc. Prof. Maria Rohova, PhD/