

REVIEW

By: Assoc. Prof. Nadia Rumenova Veleva, PhD, Head of Department "Pharmaceutical Sciences and Social Pharmacy", Faculty of Pharmacy, Medical University – Pleven

Member of the scientific jury according to Order No. РД-24/13.01.2023 by the Director of National Center for Public Health and Analysis

Reviewer according to Protocol No1/18.01.2023 from the first meeting of the Jury

Regarding: procedure for awarding PhD degree in the scientific 7. Healthcare and Sport, scientific field 7. 1. Medicine, PHD program "Social medicine and healthcare management"

PhD candidate: Adriana Miroslavova Dacheva

Topic of the PhD thesis: Application and Implementation of Time-Driven Activity-Based Costing Methodology in Ophthalmic Clinics in Bulgaria for patients with macular degeneration

1. Information about the PhD candidate

Adriana Dacheva holds a Bachelor's degree in Bulgarian Philology (2014) and a Master's degree in Translation and Editing with English Language (2016) from the Sofia University "St. Kliment Ohridski". In 2017 she completed her postgraduate qualification in Health Management. In the period from November 2021 to November 2024 she's enrolled in a PhD program in Social Medicine and Health Management at the NCPHA.

Since 2016 she has been working in HTA Ltd successively as technical assistant, office manager, budgetary impact analyzer and department manager. Since January 2021 she is partner and operations director in HTA Ltd, Bulgaria. Since 2017 she takes active participation in the annual scientific forums organized by ISPOR.

Adriana Dacheva's scientific interests are in the fields of health technology assessment, pharmacoeconomics, value measurement for health care, patients' quality of life measurement, risk management agreements, innovative payment models for gene therapies etc. Adriana Dacheva has 33 participations in scientific forums and publications.

2. Relevance of the PhD thesis topic

The relevance of the PhD thesis topic is due to the fact that in the recent decades we have witnessed an exponential development of innovative health technologies, which are gaining more and more importance in the provision of health care. New technologies are among the main drivers of the ever-increasing healthcare costs and set unprecedented challenges for the authorities related to meeting the health needs of the population.

Recently, the number of publications on the problems of health technology assessment in our country is increasing, primarily for medicinal products, but there are only

few specific and in-depth studies in the area that is the subject of this dissertation, namely organizational technologies and time-driven activity-based costing.

The PhD thesis reviewed meets the need for such type of research and provides a model for the implementation of TDABC methodology in two ophthalmic clinics in Bulgaria for patients with macular degeneration. Despite the fact that this methodology is well-established in the world practice it is barely used in our country. Thus I consider that the opportunities outlined in the PhD thesis for possible implementation of the TDABC methodology in Bulgarian everyday practice could potentially lead to enhancement of medical and economic effectiveness of our healthcare system.

3. General characteristics of the PhD thesis

The PhD thesis is presented and structured in a way that meets the legal requirements. It is written in 130 pages and consists of an introduction, an exposition in five chapters, a conclusion, as well as supplementary 27 pages of references and appendices. 25 tables and 12 figures are included in the main text. The bibliography contains of 113 sources, of which 10 are in Cyrillic and 103 are in Latin.

The literature review is written in 52 pages and presents in detail the concept of the TDABC methodology through leading examples from the world practice, as well as information about the disease of the patients that are subject of the dissertation work, namely macular degeneration, associated with age.

In a theoretical aspect, the dissertation presents various leading examples from world practice of the application of the value-based health care methodology, and in particular - the application of the TDABC methodolog, as well as the role of health technology assessment for value measurement in healthcare.

The cost-benefit optimization of measuring patient-reported outcomes related to the implementation of TDABC is discussed and the key components for implementing the concept of value-based health care are outlined.

The aim of the study follows logically from the critical analysis of the literature and is well formulated. In fulfillment of this complex goal, 7 tasks are proposed, which derive logically from the literature review, the conclusions formulated by it and the 5 working hypotheses of the study.

A set of quantitative and qualitative research methods was used, such as observation, timing, interview, analysis of electronic records, analysis of costs, analysis of processes,

analysis of the management structure and technical solutions, TDABC-valuation, etc. which are adequately selected and lead to the fulfillment of the set goals and tasks.

4. Evaluation of the scientific and applied-scientific results

The results and their discussion are presented in detail in chapters four and five in 57 pages, illustrated with tables and graphs. They fully cover the tasks set and are interpreted correctly, ending with summarizing conclusions.

In practical terms, the dissertation offers an adapted model for the application of the TDABC methodology in ophthalmology for patients with macular degeneration in two clinics in Bulgaria. An algorithm (initiating macular degeneration questionnaire, process plan and financial model) has been created that is applicable at the local level and leads to significant optimization of processes and vacation of practical capacity. A methodology for evaluating the quality of care (through regular measurements of key performance indicators) has been introduced, which can provide a competitive advantage and help to track the effect of the applied therapy. This model is an organizational innovation that can be successfully implemented at the national level.

5. Evaluation of scientific and scientific-applied contributions

As a result of the study, 8 conclusions were formulated that correspond to the tasks set, 4 recommendations and 6 contributions (3 of a scientific-theoretical nature and 3 of a scientific-applied nature).

I believe that the general conclusions of the study and the formulated specific recommendations to all stakeholders will be useful for transforming the currently ineffective healthcare funding system in Bulgaria from fee-for-service payment to value-based payment, covering all health services, products and activities that together determine how successfully the patient's needs are met. I do accept the scientific and scientific-applied contributions formulated by the PhD candidate.

6. Evaluation of the PhD thesis-related publications

The candidate presented 8 publications related to the PhD thesis (3 articles and 5 abstracts). All of them directly correspond to the topic of the PhD thesis. Adriana Dacheva is a single author in 1 of the publications and the first author in 6 of them.

The publications presented fully cover the minimum national requirements for acquiring PhD degree.

7. Evaluation of the abstract

The abstract presented synthesizes the content of the dissertation work, correctly describes the methodology used and presents in a convincing way the most important results, conclusions and recommendations of the research.

8. Critical remarks and recommendations

The 113 literature sources used are appropriate in terms of content but only 10 publications are in Cyrillic. That misbalance could have been avoided, since recently a lot of publications on health technology assessment and value measurement in healthcare are available in our country, and their analysis could have contributed to a more comprehensive presentation of the Bulgarian experience.

The literature used is not arranged and described, according to the Bulgarian National Standard requirements for bibliographic citation.

At the end of the discussion chapter, the limitations of the studies conducted should have been indicated, that c have been useful for future research on the problem, which I recommend that the PhD student continue to develop.

Conclusion

The reviewed PhD thesis "**Application and Implementation of Time-Driven Activity-Based Costing Methodology in Ophthalmic Clinics in Bulgaria for patients with macular degeneration**" is an original, independent and profound study on a relevant problem of great practical importance. It complies with all the requirements of the Law for the development of academic staff in the Republic of Bulgaria, the Rules thereto and the relevant rules of NCPHA. Therefore I vote positively for the PhD thesis and propose that the candidate **Adriana Miroslavova Dacheva** is awarded the educational and academic degree "**doctor**" in the scientific field **7.1 Medicine**, PHD program "**Social medicine and healthcare management**".

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February 17, 2023


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Assoc. Prof. Nadia Veleva, PhD