



OPINION

by **Assoc. Prof. Hristina Viktorova Lebanova, Ph.D.**

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External member of the Scientific Jury, approved by Order No. 24/13.01.2023 of the Director of the National Centre for Public Health and Analysis and based on Protocol No. 1/18.01.2023 of the first meeting of the Scientific Jury.

On Ph.D. thesis for the doctoral program *Social medicine and health management*

Ph.D. candidate: *Adriana Miroslava Dacheva*

Topic: *"Application and implementation of the TDABC methodology - activity-based costing and its duration in ophthalmology clinics in Bulgaria in the treatment of patients with macular degeneration"*

scientific supervisors: Prof. Plamen Dimitrov, MD, Ph.D.
Prof. Tony Vekov, D.Sc.

General presentation of the procedure and the Ph.D. candidate

The submitted set of materials on paper/electronic media is in accordance with Article 70(1) of the Regulations on the Conditions and Procedures for the Acquisition of Scientific Degrees and Academic Positions at the National Centre for Public Health and Analyses.

In connection with the dissertation, the Ph.D. student has submitted 3 full-text publications.

All documents have been submitted and comply with the requirements of the ZRASRB (Law for the development of the academic staff in the Republic of Bulgaria) and the Regulations of the National Center for Public Health and Analytics.

Adriana Dacheva was born on 14.08.1991. She holds a Bachelor's degree (major in Bulgarian philology) and a Master's degree (major in English translation-editor) from Sofia University "St. Kliment Ohridski". In 2017 she also obtained a postgraduate specialization in Health Management from the European School of Economics and Management. She has been enrolled as an independent doctoral student at the National Centre for Public Health and Analysis since 2021. Adriana Dacheva was discharged with the right to defense by Order № ПД-22/12.01.2023г.

The Ph.D. candidate has a professional background in the field of health technology assessment.

Relevance of the topic

The dissertation proposed for consideration for the Ph.D. degree by Adriana Dacheva with the title *"Application and implementation of the TDABC methodology - activity-based costing and its duration in ophthalmology clinics in Bulgaria, in the treatment of patients with macular*

degeneration" is relevant to the scientific and practical interests in the field of organization in the health care system and the applied payment models.

The dissertation is 157 pages long. It is illustrated with 12 figures, 25 tables, and 1 appendix. The bibliography consists of 113 literature sources covering all significant publications of Bulgarian and foreign collectives on the subject.

The dissertation is entirely within the scope of the doctoral program and professional field. The content, scope, own research conducted, and conclusions drawn are comprehensive and have a good balance in terms of both individual elements and future applications and contributions.

Methodology of the study

5 scientific hypotheses are formulated and 7 tasks are set. The set tasks correspond to the aim of the thesis - to conduct an external evaluation, cost analysis, process analysis, management team structure, and technical solutions in two ophthalmology clinics (Clinic 1 and Clinic 2) as a concept when performing an ophthalmic procedure of intravitreal administration of VEGF-inh. in patients with macular degeneration using the TDABC methodology - costing based on the activity and its duration.

Characteristics and evaluation of the thesis and contributions

The dissertation presents a 53-page literature review on the individual elements of the topic, using 113 contemporary Bulgarian and foreign sources. The literature review is extremely detailed, with the Ph.D. student introducing the concept of value measurement in healthcare (VMHC) and activity and time-based costing (TDABC). The review is richly illustrated with examples of the application of the methodology in practice in both the United States of America and European countries.

The materials and methods used in this dissertation are exhaustively listed. Historical, sociological, and statistical methods are used.

The results of the research are presented comprehensively, coherently, and logically in Chapter IV of the thesis. The set tasks have been fulfilled.

An external evaluation, cost analysis, process analysis, management team structure, and technical decisions were performed in two ophthalmology clinics (Clinic 1 and Clinic 2) as a concept when performing an ophthalmic procedure of intravitreal VEGF inhibitor administration in patients with macular degeneration. The "TDABC - activity and time-based costing" methodology was applied, built on appropriate care to achieve the patient's personal goals (personal value) and achieve the best possible outcomes with available resources (technical value).

The results of the studies and the application of the methodology under consideration show that in Clinic 1 the introduction of the methodology is associated with the release of the capacity of the most valuable resource in healthcare - humans. A significant reduction in costs and improvement in productivity through process optimization was observed.

In Clinic 2, the focus is on introducing outcome measurement (health and quality-of-life outcomes for patients), which is linked to providing a competitive advantage and delivering higher-quality patient care. The facility was found to not need process and cost optimization and the system was functioning well.

Critical remarks

As a result of the methodology applied in Clinic 2, the Ph.D. student made recommendations for dispensing the VEGF inhibitor from the clinic's hospital pharmacy and predicted an estimated profit. Hospital pharmacies cannot dispense these types of drugs to patients as they are included in Appendix 1 of the Positive Drug List in Bulgaria and are prescribed per protocol. The estimated average annual profit figure of 67 200 BGN in Table 23 is not applicable in this case.

This critical remark does not diminish the contribution of the thesis and does not challenge the obtained results and drawn conclusions.

Assessment of publications and personal contribution of the Ph.D. student

On the topic of the dissertation, 3 full-text publications have been published, one of which is in a foreign journal. In all three publications, Adriana Dacheva is the first author.

The scientific production of the Ph.D. student meets the requirements of the National Center for Public Health and Analysis for the acquisition of a doctoral degree.

There is a high erudition of the Ph.D. student on the issues, evidence that the research is a personal contribution, representative for the country, and enough specific recommendations, contributions and practical benefits can be formulated.

In general, the dissertation submitted for the acquisition of a doctoral degree by Adriana Dacheva meets the requirements, is relevant, and will form the basis for future research in the field.

Abstract

The presented abstract is following the requirements of the National Center for Public Health and Analyses and reflects the main results presented in the dissertation.

Conclusion

The dissertation *contains scientific-theoretical and applied-practical results, which represent an original contribution to science* and **meet all the** requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria (ZRASRB), the Regulations for the Implementation of the ZRASRB and the Regulations of the National Center for Public Health and Analysis for Academic Staff Development. The submitted materials and dissertation results fully comply with the specific requirements adopted in connection with the Regulation of the NCPHA for the application of the Law for Development of the Academic Staff in the Republic of Bulgaria.

The dissertation work shows that the Ph.D. student Adriana Dacheva **possesses** in-depth theoretical knowledge and professional skills in the scientific specialty of Social Medicine and Health Management, **demonstrating** qualities and skills for independent scientific research.

Because of the above, I confidently give my *positive assessment* of the conducted research, presented by the above-reviewed dissertation, abstract, results, and contributions, and **I**

recommend the esteemed scientific jury to award the educational and scientific degree of 'Doctor' to Adriana Miroslava Dacheva in the Ph.D. program in Social Medicine and Health Management.

17.02.2023 г.

Prepared by:


Assoc. Prof. Hristina Lebanova, Ph.D.