



REVIEW

by

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Faculty of Pharmacy, Medical University – Sofia,

member of the scientific jury, appointed by order No. R-2159/24.6.2024

of the Vice Rector of science & Research Activities of the Medical University – Plovdiv

for the competition for **"ASSOCIATE PROFESSOR"** in the field of higher education 7. "Healthcare and Sports", in the professional field 7.3 "PHARMACY", scientific specialty:

"Pharmacoeconomics and Pharmaceutical Regulation",

for the needs of the Department of Health Care Management, Faculty of Public Health, Medical University – Plovdiv, for teaching the master program "Pharmaceutical Business Management," announced in the State Gazette, issue 35 of 19.4.2024.

At its first meeting, the scientific jury reviewed the documents and admitted **one candidate** to participate in the competition for "Associate Professor" in "Pharmacoeconomics and Pharmaceutical Regulation" for the needs of the Department of Health Care Management, Faculty of Public Health, Medical University – Plovdiv: **Senior Lecturer MSci Pharm Anna Atanasova Mihaylova, PhD.**

The present review has been prepared in accordance with the Law for the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Application of the Law for the Development of the Academic Staff, and the Regulations for Academic Development at the Medical University – Plovdiv (2021).

I. Analysis of the Candidate's Career Profile

MSci Pharm Anna Mihaylova has acquired several bachelor's and master's degrees over a long period from 1992 to 2008. For the purposes of the competition and its professional field 7.3 Pharmacy, it should be noted that she successfully graduated in 2008 from the Faculty of Pharmacy at the Medical University – Plovdiv with a master's degree in the professional field of "Pharmacy". The additional bachelor's and master's programs successfully completed include: Administrative and Health Management and Public Health and Health Management at the Medical University – Plovdiv and the Medical University – Sofia. She has obtained two specializations for post-graduate education (CPD) – Medical Pedagogy and Organization and Economics of Distribution and Pharmacy Practice. Additionally, the presented documents provide evidence of completed courses, qualifications, and specializations, including Crisis Situation Psychology, Time Management and Personal Effectiveness, and others.

The candidate's professional career began as a rehabilitator (based on her first acquired education) and subsequently as a head of a drugstore, manager of a retail pharmacy business, and senior lecturer, including as the head of a specialty at the Medical College and the Faculty of Public Health at the Medical University – Plovdiv. Since 1997, Mihaylova has been continuously employed under a primary employment contract at the Medical University – Plovdiv, most recently holding the position of Senior Lecturer in the Department of Health Care Management at the Faculty of Public Health, for which the competition has been announced.

In 2018, Senior Lecturer Mihaylova obtained the educational and scientific PhD degree in professional field 7.3 Pharmacy through the PhD program "Pharmacoeconomics and Pharmaceutical Regulation" at the Faculty of Pharmacy, Medical University – Plovdiv, with a dissertation on "Epidemiological and Pharmacoeconomic Study of Corticosteroid Prophylaxis of

Hyaline Membrane Disease in Premature Infants." This interdisciplinary work is relevant to scientific and practical interests in the fields of neonatology, pharmacy, and pharmacoconomics, as well as to specialists in health care, pharmaceutical regulation, and hospital management.

Anna Mihaylova has over 28 years of professional experience in her field, including more than 25 years as a lecturer at the Medical College and, since the beginning of 2023, at the Faculty of Public Health. This fully meets the primary criterion of academic experience. Mihaylova can also be considered a leading practitioner due to her extensive experience and various positions held. There is a complete alignment between the scientific specialty of the competition and the acquired PhD degree, which is a key requirement for regulated professions according to the current regulatory framework.

Administrative Activities

The candidate Anna Mihaylova possesses extensive and profound organizational, administrative, and professional experience. Since 2008, she has adeptly combined her roles as a lecturer, researcher, and manager in practice under a management contract. For two years, she served as the head of the "Assistant Pharmacist" specialty at the Medical College, and she is currently the head of the Master program "Pharmaceutical Business Management" at the Faculty of Public Health, Medical University – Plovdiv. Evidence of her membership in scientific, professional, and trade organizations and unions is evident.

These diverse positions, numerous activities, and responsibilities, along with her substantial accumulated experience, allow Mihaylova to fully realize her potential as a lecturer, tutor, organizer, and mid-level manager. As a speaker and representative of non-governmental organizations and associations, Anna Mihaylova has participated in numerous national, regional, and international meetings, working groups, and various formats, which for the purposes of this review do not need to be exhaustively listed.

II. General Description of the Submitted Materials for the Competition

The set of documents submitted by Anna Mihaylova for the competition is presented in accordance with the requirements. There are no missing documents; the submitted evidence is accurate, thorough, neatly organized, and systematized, in compliance with the current regulatory documents related to the development of the academic staff. Some scientometric data are missing, as noted below.

At its first meeting, the scientific jury unanimously assessed the complete compliance with the minimum national requirements and decided to admit the candidate for substantive evaluation.

III. Evaluation of the Candidate's Scientific Works for Overall Academic Development

This part of my review includes an assessment of the candidate's scientific and publication activity, specifically:

- General Characterization of Scientific Production and Publication Activity;
- Scientific Activity – Dissemination and Application of Scientific-Practical Achievements;
- Participation in Implementation and Leadership of Projects;
- Scientific-Creative Achievements (Scientific Authority).

Anna Mihaylova has submitted a total of 92 scientific works for evaluation, including full-text publications, which are categorized as follows:

- Monograph: "Good Pharmaceutical Practice in the Training of Assistant Pharmacists," published in 2020, presented as a principal monographic work.
- Co-authored Monograph: "Health Economic Evaluation of Costs for Premature Infants with Respiratory Complications," including a protocol for the division of authorship.
- Contributions to 5 Collective Monographs and Studies:
 - "Management of Pediatric Immunity" with a chapter titled: "Study on Immune-Stimulating Methods and Means to Improve Quality of Life in Children," co-authored, published in both Bulgarian and English.
 - "Application of Bioprinting in Healthcare" with a chapter titled: "Application of Bioprinting in Pharmacy," co-authored.
 - "Design of Medical Specialist Training" – a handbook prepared as part of a university grant, without specific references to the participation of co-authors in individual sections or a protocol for division of authorship.
 - "Methods and Means for Enhancing Immunity in Children" – a handbook for parents.
 - "Ethical and Legal Regulation of Bioprinting in Medicine and Healthcare" – also without specific attribution of authorship for chapters.
- Publications in Scientific Journals: 35 publications in peer-reviewed and indexed scientific journals recognized by global databases.
- Publications and Reports: 51 publications and reports in peer-reviewed journals that are not indexed in international databases.

The educational aids – textbooks, guides, handbooks, practical manuals, and others – presented in the candidate's documentation have been assessed and are included in the following sections of the review:

- Textbook on Medical Devices, 2020
- Practical Manual for Assistant Pharmacists, Part I, 2017
- Practical Manual for Assistant Pharmacists, Part II, 2020
- Guide to Pharmaceutical Care (in Bulgarian and English), 2019

All the monographs submitted in the competition are peer-reviewed, have bibliographic registration (with ISBN), which confirm their quality and significance for the scientific community. It is also noteworthy that the teams for two of the monographs in which the candidate participated are multidisciplinary and were published in the last 5 years.

The primary themes of the publications are quite varied, but predominantly have a medico-social focus, which entirely falls within the scope of the scientific specialty of the announced competition and confirms the author's contributions. I accept the presented publications in their entirety, the impact factor reports of the journals are accurate, as are the calculations for points according to the requirements of the Medical University – Plovdiv regulations.

I would like to delve more deeply into the scientific contributions of the candidate, due to the categorical fact that they significantly exceed the minimum national requirements for the academic position of "Associate Professor."

The candidate's scientific contributions are presented in NINE main groups, some of which are of varying significance, while others are grouped more mechanically. This is attributed to either inexperience or the broad scope of the topics and scientific output.

For me, in evaluating the candidate's publication activity for the purposes of the competition, the systematic, strong, comprehensive, competitive, and convertible scientific production in the following areas stands out:

- **Contributions from the FIRST Group – Leading Theme: PHARMACEUTICAL REGULATION.** The areas covered include: drug and dietary supplement approval and regulation, regulation during crisis situations and combating certain infectious diseases. This group is supported by a total of 4 articles and includes diverse, in-depth studies and conclusions significant to both EU and national contexts. For example, certain drugs and vaccines provided to member states through the mechanism of the Joint Procurement Agreement for medical countermeasures are examined, tracking the overall effect from access to these drugs to improving public health.
- **Contributions from the SECOND Group – Leading Theme: PHARMACEUTICAL CARE.** This group encompasses 14 scientific articles representing in-depth studies on trends in pharmaceutical care and patient counseling, the role of pharmacists in medication review, pharmaceutical care for chronic diseases, care for specific population groups, and the use of information and communication technologies in pharmaceutical care. I accept and highly value the production in this area due to the solid evidence from the research, development into educational aids, and the candidate's practical experience.
- **Contributions from the THIRD Group – Leading Theme: PHARMACOECONOMIC ANALYSIS AND MEDICO-SOCIAL ASPECTS IN PREMATURE INFANTS.** Supporting contributions include the authored monograph, the abstract of the doctoral dissertation, and 5 scientific publications. The health-economic evaluation of prophylaxis and treatment of respiratory complications in premature infants leads to a reduction in neonatal mortality risk and prevention or reduction of additional complications and consequences associated with respiratory diseases, thus improving the newborn's quality of life. From a pharmacoeconomic perspective, there are net savings in costs for saving a newborn's life, which relates to reducing direct costs for medication therapy and overall healthcare costs. Considering the candidate's future career development in the Faculty of Public Health, the supervised master's program, and the considerable experience accumulated, I believe this research area should be deepened, expanded, and integrated into the overall medico-social theme.

The remaining contributions formulated by the candidate are accepted in their entirety, although they carry less weight and significance concerning the announced competition. I have critical remarks regarding Contribution IV.1, which deals with the therapeutic action, advantages, and regulation of dietary supplements, due to the absence of therapeutic (healing) properties for this group of products from both regulatory and medical perspective.

Overall, in support of the candidate's contributions for the competition, 84 publications are presented, which I recognize as relevant. Additionally, the contributions are referenced to 3 monographs, an abstract of the doctoral dissertation, a handbook, and reports on scientific projects. Since obtaining the PhD degree, Mihaylova has shown significant publication activity and participation in scientific projects and forums, which demonstrates her serious commitment and high prioritization of scientific work and engagement.

Among the publications referenced in Scopus and/or Web of Science – a total of 35, published between 2017 and 2024 – Mihaylova is the first author in 7 (20%) and the second author in 13 (37%), highlighting her leading areas of expertise and specific skills.

In publications in non-refereed journals – a total of 51, published between 2012 and 2023 – Mihaylova is the first author in 9 (18%) and the second author in 22 (43%), with 16 publications in Bulgarian and the rest in English.

I accept the presentation of contributions by scientific directions and priorities. At the same time, it would be much more reasonable for an objective evaluation of the works if the contributions were structured into scientific-theoretical, scientific-applied, contributions to the development of education and educational institutions, and contributions to regulatory practice. From the presented directions and leading contributions, I would like to emphasize the importance of the author's scientific-applied contributions to exploring contemporary trends in pharmaceutical care for specific patient groups and conditions, the conducted studies on health-economic approaches and results, and pharmacoeconomics.

Data are presented on participation in two internal university scientific projects; the national scientific program "Young Scientists and Postdoctoral Researchers" of the Ministry of Education and Science; a project under the Norwegian Financial Mechanism; and the international project: STOP COVID-19 STRESS of the University Agency of Francophonie in Central and Eastern Europe.

I have ONE joint publication with the candidate, which constitutes about 1% of the evaluated scientific production.

IV. Evaluation of the Monographic Works Submitted by the Candidate

The leading monographic work submitted by the candidate for the competition is the book titled "Good Pharmaceutical Practice in the Training of Assistant Pharmacists", published in 2020 with ISBN 978-619-236-208-9. This monograph consists of 187 pages and has been reviewed by Assoc. Prof. Bakova and Assoc. Prof. Georgiev. The volume and theme of the monograph fully comply with legal requirements.

The monograph addresses a multifaceted and current issue, specifically the modern concept of good practices in pharmacy, standards and quality rules for pharmaceutical and health services, public health, and education. It weaves various aspects of the training of assistant pharmacists and their formation as healthcare professionals. Anna Mihaylova is credited with authoring the curriculum and course content for the additional subject "Good Pharmaceutical Practice" at the Medical College of Plovdiv.

The second monographic work presented is the co-authored book titled "Health Economic Evaluation of Costs for Prematurely Born Children with Respiratory Complications", published by FastPrintBooks in 2020 with a second expanded edition in 2024. This monograph consists of 283 pages and has been reviewed by Prof. Uchikova and Assoc. Prof. Geuorguiev. The content is divided into three chapters as follows - First Chapter: Detailed examination of preterm birth characteristics, therapeutic behavior, corticosteroid prophylaxis, and surfactant treatment from medical and health-economic perspectives. Second Chapter: Theoretical foundations of pharmacoeconomics and health-economic analyses and studies. Third Chapter: Focuses on the evaluation and analysis of therapy costs for premature children with respiratory complications. The monograph includes a summary, conclusions, and references. The findings from the research indicate that the health-economic evaluation of the preventive effect of prenatal corticosteroid prophylaxis shows benefits concerning short-term therapeutic effects. The need for the use of exogenous surfactant in premature newborns is reduced by corticosteroid prophylaxis during pregnancy. Value-for-money evaluation models show that although surfactant as a drug is expensive, it is more effective regarding short-term therapeutic outcomes.

A division protocol between the two co-authors is provided, showing that candidate Anna Mihaylova has a 46% contribution to the scientific content of the monograph.

I accept the monographic work, acknowledge the candidate's authorship, and highly value its significance for the scientific community. The contribution of this work to the development of pharmaco-economic research in the country is commendable.

V. Citations of the Candidate's Publications in National and International Literature (Publication Impact).

A reference to open citations in Scopus and Web of Science shows the presence of 68 positive citations on the candidate's scientific and publication activity. Citations in peer-reviewed monographs and collective works are 6, and citations in non-refereed peer-reviewed journals are 110. A reference is provided from the candidate's Scopus profile for h-index 5.

No data from Google Scholar citations was provided by the candidate, but an independent search reveals 212 citations. There is also no information available regarding the candidate's i10-index.

The volume and scope of the applicant's citations indicates a very good dissemination and knowledge by the scientific community of the creativity and the results of scientific research. Similar indicators are characteristic of the next level in academic positions.

VI. Comprehensive and Qualitative Assessment of Teaching and Methodological Activity, Including Scientific Supervision of Students, Doctoral Candidates, and Trainees

Anna Mihaylova is actively involved in the education of students in various medical and social disciplines, specifically for the degrees of Master's and Professional Bachelor's, as well as elective courses. Over the past three years, Mihaylova's average annual teaching load has been 684 hours of classroom instruction. Her total average workload, which includes teaching, research, and extracurricular activities, is assessed at 1126 hours. This indicates a substantial commitment to her academic role. Mihaylova has consistently taught these programs, demonstrating her extensive experience and contribution to professional education. From the Academic Year 2022/2023: She has been teaching students in the Master's program in "Pharmaceutical Business Management" at the Faculty of Public Health. Her responsibilities include 100 hours of lectures, 25 seminars, and 16 examinations.

I would like to especially note the active participation of Anna Mihaylova in organizing and conducting the students' training practice and internship in a real environment. I consider this fact as a serious achievement and a form of adaptation and approximation of students' academic knowledge and competencies to the needs of the real environment and business. The topics covered (as seen in the two-part Practice Study Guide) and the acquisition of specific skills are entirely within the scope of the applicant's research interests, practical experience and career.

All this shows that Mihaylova has passed many stages in her academic career, has built a name and has proven herself among the teaching teams and students of the faculty and college, where she is attracted as a member of the academic community.

Among the submitted documents, there is no evidence of the applicant's scientific activities with students and specialists, or at least no such evidence is marked.

The recognition and active collaboration with student collectives helps to establish the authority of academic teachers attracts young, ambitious and excellent students in scientific work and should be an important criterion in evaluating the candidate's achievements.

It is clear from the presented set of documents that Anna Mihaylova has an excellent command of the English language (C1 level with Cambridge certificate), incl. can use it as a job to teach foreign language students and has leadership abilities, excellent communication skills, strong personal adaptability and teamwork in a multicultural environment.

In conclusion, I highly appreciate the professionalism and long-standing pedagogical skills, theoretical and practical training of Senior lecturer MSci Pharm Anna Mihailova, PhD.

VII. Critical Remarks and Recommendations

My critical remarks and recommendations are reflected in the various sections of the review. The overarching connection among them is the recommendation for a clear focus on scientific and publication activities in the candidate's future career development within the chosen field of health economics and pharmacoeconomics research. This focus will define Anna Mihaylova's profile as both an educator and a researcher, contributing uniquely to the Faculty of Public Health and the department that has announced this current competition.

VIII. General Assessment of the Candidate's Compliance with Minimum National Requirements According to Articles 2b, Paragraphs 2 and 3, and the Requirements of Article 2b, Paragraph 5 of the Law on the Development of Academic Staff in the Republic of Bulgaria and Specific Requirements of MU-Plovdiv

The presented documents and facts demonstrate that Senior lecturer Master pharmacist Anna Atanasova Mihaylova, PhD, is a well-established academic specialist, expert, and consultant within the scope of the scientific specialty of the competition, successfully balancing her teaching and research activities. Candidate Mihaylova has progressively advanced through the stages of her academic development, actively and responsibly participating in the teaching and research activities of various departments within the university.

Based on the facts presented in the review, my personal impressions, public and professional activities, and the assessment of the candidate's moral and ethical qualities, I conclude that the teaching and research activities of MSci Pharm Anna Atanasova Mihaylova, PhD, FULLY MEET the requirements for the academic position of **"Associate Professor"** in **"Pharmacoeconomics and Pharmaceutical Regulation"** for the needs of the Faculty of Public Health at MU-Plovdiv. I provide my **complete positive assessment**.

IX. Conclusion for the Candidate in the Competition for the Academic Position of "Associate Professor"

Based on the Law on the Development of Academic Staff in the Republic of Bulgaria, its Implementation Regulation, and the Academic Development Regulation of MU-Plovdiv, I propose to THE ESTEEMED SCIENTIFIC JURY members to cast a positive vote and recommend to the Faculty Council of the Faculty of Public Health at MU-Plovdiv the appointment of **Senior lecturer MSci Pharm Anna Atanasova Mihaylova, PhD, to the position of "Associate Professor" in the scientific specialty "Pharmacoeconomics and Pharmaceutical Regulation"** in the field of higher education 7. "Health and Sports," professional field 7.3 "Pharmacy," for the needs of the Department of Health Care Management, for teaching in the master program "Pharmaceutical Business Management" (announced in State Gazette, issue 35/19.4.2024).

Reviewer:

Prof. Ilko Nikolaev Getov, PhD



Заложено на основание
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