

**To the Chairman of the Scientific Jury,
determined by Order No P-2142/21Jun2024
Plovdiv 4002, V. Apriloff 15A**

To your protocol No1 from 25Jun2024

Attached I present: REVIEW

According to the competition for the academic position 'Associate Professor' in the scientific specialty 'Paediatrics', announced for the needs of Medical University-Plovdiv, Bulgaria, Faculty of Medicine, Department of Obstetrics and Gynaecology in Government Gazette No 35 from 19Apr2024

Reviewer: Assoc. Prof. Dr. Victoria ATANASOVA Georgieva, MD, PhD

Scientific specialties: Paediatrics, Neonatology

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One candidate is admitted to the competition – Dr. Penka Vasileva PETLESHKOVA-Angelova, MD, PhD.

I. Analysis of the candidate's career profile

Dr. Penka Vasileva PETLESHKOVA-Angelova, MD, PhD has a total work experience of 31 years and 2 months, of which 12 years and 6 months in the specialty.

Dr. Petleshkova completed her secondary education at the High School 'G. Dimitrov', Plovdiv, and the university education – at the Higher Medical Institute, Plovdiv. She is a certified specialist in Paediatrics since 10Jul2000, and since 30Jan2012 – in Neonatology. She also completed master's degree in Health Management from 2020.

She worked at the MHAT-Pazardzhik, from 07Jun1993 to 31Jan2010, as follows: 1993-1995 – Children's outpatient ward, 1995-1998 – Children's ward, 1998-2010 – Neonatology ward. She is working in Neonatology ward of the Clinic of Obstetrics and Gynaecology at UMHAT 'Saint Georg', Plovdiv since 01Feb2010 until now.

Academic development

Dr. Petleshkova has been appointed to an Assistant Professor to the Department of Obstetrics and Gynecology of Medical University, Plovdiv since 03Dec2012, and as a Principal Assistant – since 16May2022, as whom she continues to work.

She is enrolled for a free form of doctoral studies to the department of Obstetrics and Gynaecology at the Medical University, Plovdiv in 2016. She defended her doctorate and obtained the educational and scientific degree 'Doctor' in the specialty 03.01.50 'Paediatrics' in 2020 on the topic 'Procedural pain in full-term newborns – assessment and possibilities for influencing with non-pharmacological means'.

Dr. Petleshkova has conducted numerous specializations in our country and abroad to improve her professional qualifications:

- Abdominal echography
- Transfontanel echography
- Salzburg-Columbia seminar
- Neonatal neurology
- Maternal-foetal infections
- Emergencies in neonatology
- Problems of intensive care of the newborn
- New Headway Upper-Intermediate

Dr. Petleskova is fluent in written and spoken English and Russian.

II. General description of the materials submitted for the competition

Dr. Petleshkova has presented, on paper and electronic media, in an excellent and systematic order, all the required materials for participation in the competition for the academic position 'Associate Professor', specialty 'Paediatrics' at the Medical University, Plovdiv: application, professional autobiography, diplomas, certificates, references, list of publications in scientific periodicals, copies of scientific publications, abstracts of papers presented at scientific forums, list of participations in scientific projects, references for: contributions, academic workload, work experience, publications cited in foreign publications, impact factor, etc.

III. Evaluation of the scientific works of the candidate for the overall academic development

A. General characteristics of scientific production and publication activity

Publication activity of Dr. Petleshkova:

Dissertation thesis	1
Independent monograph	1
Chapters printed in collective monographs	2
Articles published in specialized journals	25
Sole or first author	8
Publications in refereed journals	14
Of them, publications with an Impact factor	7
Total IF	6,29
Scopus Hirsh index	3
Participation in international scientific forums	16
With printed abstracts in journals and proceedings with an Impact Factor	1

Dr. Petleskova has presented:

- An abstract of a dissertation work on the topic '**Procedural pain in full-term newborns - evaluation and possibilities for influencing with non-pharmacological means**'
- Published habilitation work – monograph on the topic '**Current problems of foetal and neonatal pain**'
- Published chapters in 2 collective monographs
- A total of 25 published articles

Fourteen of the publications are printed in scientific journals, refereed and indexed in world famous databases of scientific information (Scopus and/or Web of Science only), and seven of them – in the journals with an IF (a total IF is 6.29).

Dr. Petleshkova has participated with scientific reports in 16 international medical congresses and conferences with printed summaries and one summary was published in a journal with an IF and was cited.

The candidate is the first author of 8 of her research papers (3 journals with an IF, 1 in a journal refereed in Scopus and Web of Science, 4 – in non-refereed peer-reviewed journals or in edited collective volumes). Dr. Petleshkova is a second author of the chapters of 2 collective monographs.

The articles were published in Pharmacia, Journal of Environmental Protection and Ecology, Medical Principles and Practice, Journal of IMAB, Open Access Macedonian Journal of Medical Sciences, Biomedical Research, Folia medica, Akusherstvo i ginekologija, Pediatriya, Journal of the Union of Scientists-Varna. Medicine and Ecology Series, MedInfo, Knowledge International Journal.

B. Scientific activity – dissemination and application of scientific and practical achievements among the scientific community

Scientific research of Dr. Petleshkova cover the following areas of **medicine and medical education**:

- Diagnosis, evaluation and treatment of foetal and neonatal pain
- Importance of perinatal factors on pregnancy outcome and neonatal pathology
- Early child development
- Rare diseases and syndromes
- Pharmacology
- Medical education and training

1. Research of the **diagnosis, evaluation and treatment of foetal and neonatal pain** (articles No 1, 4, 6, 14 of p. 13, articles No 1, 2, 4, 6 of p. 14)

Original scientific-theoretical and scientific-applied contributions at national and international level have been made by these articles.

The dissertation thesis of Dr. Petleshkova is the first systematic research of the procedural neonatal pain in Bulgaria and significant original and applied scientific contributions were derived (articles No 1, 4, 6 of p. 13, articles No 1, 2, 6 of p. 14). Diagnosis and evaluation of neonatal pain by two commonly accepted scale (multimodal – Neonatal Infant Pain Scale, NIPS, and monomodal – Neonatal Facial Coding System, NFCS) were presented for the first time in Bulgaria. The clinical appliance of the two scales was confirmed in Bulgarian conditions. The changes of vital signs (respiratory and heart rate, transcutaneous oxygen saturation, and blood pressure) were confirmed as physiological markers of procedural pain for the first time in Bulgaria. The confirmed correlation between the strength of pain calculated via respective scale's scores and vital signs was an original scientific contribution. The conventional and non-conventional methods of anaesthesia of term newborns were proposed for the first time in Bulgaria.

The proposed and accepted in the clinical practice **algorithm of diagnosis and treatment of procedural pain in term newborns** were the original contribution, too (articles No 1, 4, 6 of p. 13, articles No 1, 2, 6 of p. 14).

The independent **monography 'Current problems of foetal and neonatal pain'** was an important scientific contribution (Lax Book LTD, ISBN:978-619-189-1). This is the first and independent monography on this topic in Bulgaria. It was accented in the monography on

the debatable in the past, but generally accepted in modern medicine fact that the newborns feel pain and it is important to minimize it from an ethical perspective to prevent its adverse effect on the early brain development and its subsequent influencing on its cognitive and behavioural functioning.

2. Research of the **importance of perinatal factors on pregnancy outcome and neonatal pathology** (articles No 11, 12, 13 of p. 13)

The relationship between maternal vaginal candidiasis and colonization of the newborn as a risk factor for the clinical manifestation of skin-mucosal neonatal candidiasis and neonatal sepsis was for the first time examined in Bulgaria. It was proven that the influence of this maternal infection depends on the other predisposing factors. A recommended treatment of neonatal infection was taken based on own experience. The results obtained were a part of university project No HO-07/2014 on the topic 'A study on candidal vulvovaginitis in pregnant women and candida colonization in newborns'.

3. Research on the topic **early child development**

'**A program for early detection and follow-up of full-term and premature children born small for their gestational age (SGA)**' conducted by the Varna Society of Paediatric Endocrinology and Bulgarian Association of Neonatology is an important scientific-applied contribution for the early child development. The program serves to early detection of term and preterm SGA and early diagnosis of syndromes and diseases related to SGA. The results will be used to create an algorithm for follow-up and treatment of these children which will be beneficial to the clinical practice of neonatologists, general practitioners, endocrinologists, paediatricians, as well as for the benefit of SGA families, teachers, psychologists, etc. (articles No 3 of p. 14)

4. Research in **rare diseases** (articles No 5 and 7 of p. 14)

Two cases of Poland syndrome expressing phenotype variability which enriches its clinical characteristic, as well as a case of esthensioneuroblastoma with endonasal surgery performed for the first time in our country were published.

5. Research in **pharmacology** (article No 8 of p. 14)

Several various alkaloids which lead to health problems in higher doses are found in the Yohimbine bark. A study with scientific-confirmatory contribution for specifying Yohimbine dose and accurate labelling of any dietary supplement that contains yohimbine bark to prevent adverse effects on people's health was conducted.

6. Research in **medical education and training** (articles No 2, 5, 7, 8, 9, 10 of p. 13 and articles No 10, 11 of p. 14).

The articles No 5, 8, 9, 10 of p. 13 and No 10, 11 of p. 14 represent a scientific and methodological contribution with their experience for a science-based optimization of training of nurses during their pre- and post-graduate internships to form and improve their professional competence. The importance of the mentor during the pre-graduate internship was researched and evaluated. The development of a complex model for a complete procedure of planning, organizing, monitoring and evaluating the pre-graduate internship of the nurses at Medical University, Plovdiv is an original contribution which can be used in the practical education of the other specialities.

The impact of distance learning on the appliance of modern methods for education of the medical specialists (in the context of the COVID-19 pandemic) was studied for the first time in our country in the articles No 2 and 7 of p. 13. The main weaknesses of the learning were

proven – student's passive condition in the learning process and insufficient acquisition of practical exercises and skills.

C. Participation in the implementation and management of projects

Dr. Petleshkova participated in 5 scientific projects – 2 internal for Medical University, Plovdiv, 2 national and 1 international.

- Practical training on the Project BG05M2OP001-2.013-001 'Students internships' – Phase 2
- Project No HO-07/2014, on the topic 'A study on the candidiasis vulvovaginitis in the pregnant women and Candida colonization of the newborns'
- Project No HO-02/2023, on the topic 'Evaluation of the stress level in the urgent obstetrics conditions and a simulation environment – an efficiency of the simulation training and stress control in the urgent obstetrics conditions'
- Collaborative project of the Bulgarian Association of Neonatology and Varna Society of Paediatric Endocrinology Grants ID 64919053 'A program for early detection and follow-up of full-term and premature children born small for their gestational age (SGA)'
- Project 'Omnia' BG05M2OP001-2.016-0007 'Professional development of the teachers'

D. Scientific and creative achievements (scientific authority)

Dr. Petleshkova is known as an authoritative and precise scientist with her scientific-creative achievements. With her professionalism and organization sense, she realises successfully her role as a member of Bulgarian medical association, Association of the scientists of Plovdiv, Bulgarian scientific society of public health and Bulgarian association of neonatology.

E. Supervisor of postgraduates and doctoral students

Dr. Petleshkova is a supervisor of 2 postgraduates. There are not doctoral students supervised by her.

IV. Evaluation of the monography or equivalent publications presented by the candidate on the competition of 'Associate Professor'

The independent monography 'Current problems of foetal and neonatal pain' (Lax Book LTD, ISBN: 978-619-189-1) is an important scientific contribution. It is the first and the only one monography on this topic in Bulgaria. It was accented in the monography on the debatable in the past, but generally accepted in modern medicine fact that the newborns feel pain and it is important to minimize it from an ethical perspective to prevent its adverse effect on the early brain development and its subsequent influencing on its cognitive and behavioural functioning.

The structures of foetal and neonatal nervous system responsible for the perception of pain and their maturation in an evolutionary plan were detailed described and this description points to the need of the pain assessment and management in the newborn with minimal pharmacological means. The chapter of the monography 'Foetal pain' can be used by anatomists, neurophysiologists, foetal morphology and physiology specialists for clarification of pain neurophysiology in the foetus, as well as for new research on the impact of the pain and

other harmful factors on the earliest brain development and its subsequent influence on the cognitive and behavioural development.

The knowledge, diagnosis and assessment of neonatal pain is the basis of prevention of paediatric pain, too. Improving the methods of pain diagnosis and assessment is very common problem with worldwide efforts which will allow maximum influencing its adverse effects in childhood and later.

The monography and dissertation thesis can be used as a basis of improving of pain treatment in paediatrics and in particular in neonatology via current understanding of pain mechanisms, improving pain assessment methods and using alternative treatment methods.

The future possibilities of diagnosis and evaluation of neonatal pain via AI are presented in the monography, too.

V. Reflection (citation) of the candidate's publications in the national and foreign literature (publication image).

- Citations or reviews in scientific editions refereed and indexing in worldwide databases with scientific information or in the monographies and collective volumes – 35 citations, 7 of them in journals refereed in *Scopus* and/or *Web of Science*
- Citations in the monographies and collective volumes with scientific peer review – 5 citations
- Citations or reviews in non-refereed journals with scientific peer review – 62 citations

VI. Complex, qualitative evaluation of the teaching-methodical and teaching activity including scientific guidance of students, postgraduates, doctoral students

A. Teaching activity

Dr. Petleshkova was realized a total of 499 hours in teaching and scientific activity in 2022-2023 academic year as follows:

- At the Medical Faculty of Medical University, Plovdiv: 12 lectures, 298 practical, a committee member of 5 exams
- At the Faculty of Public Health of Medical University, Plovdiv: a committee member in 17 semester exams
- For scientific research – a total of 150 hours.

B. Education of postgraduates

Two postgraduates were enrolled to Dr. Petleshkova since April 2024.

VII. Critical notes and recommendations

I have no critical notes and recommendations to the presented from Dr. Petleshkova documentation.

VIII. An overall assessment of the applicant's compliance with the minimum national requirements according to the art. 2b, p. 2 and 3, according to the requirements of art. 2b, p. 5 from the Law on the development of the academic staff of the Republic of Bulgaria and specific for Medical University, Plovdiv requirements for directions and units with/without clinical activity defined in the Regulations for academic development in the Medical University, Plovdiv.

Scientometric indicators for Medical University, Plovdiv for the occupation of the academic position 'Associate Professor' for units with clinical-diagnostic activity direction 7.1. MEDICINE – comparison with scientometric data of Dr. Petleshkova:

Group	Indicators	Value	Assoc. Prof.	Dr. Petleshkova, MD, PhD
A	1. Dissertation thesis for awarding an educational and scientific degree 'Doctor'	50	50	50
B	2. Dissertation thesis for awarding scientific degree 'Doctor of sciences'	100	-	-
C	3. Habilitation work – monography	100	100	100
	4. Habilitation work – scientific publications (not less than 10) in publications that are referenced and indexed in world-renowned databases of scientific information	60/n for each publication		
D	5. Printed monography which is not presented as a major habilitation thesis	100	200 points 15 articles 10 of them in journals referenced in Scopus and/or Web of Science, including 3 articles with IF	-
	6. Printed book based on the defended dissertation thesis for awarding an educational and scientific degree 'Doctor' or awarding a scientific degree 'Doctor of sciences'	40		-
	7. Publications and reports, published in scientific editions referenced and indexed in world-renowned databases of scientific information	60/n or prorated based on contribution protocol		192.8 (14 articles)
	8. Publications and reports, published in non-referenced journals with scientific reviewing or published in edited collective volumes	30/n or prorated based on contribution protocol		73.2 (11 articles)
	9. Published chapter of collective monography	20/n		20
E	10. Citations or reviews in scientific editions, referenced and indexed in world-renowned databases of scientific information or in monographies and collective volumes	15	110 points	525 (35 citations)
	11. Citations in monographies and collective volumes with scientific reviewing	10	7 citations in journals referenced in Scopus and/or Web of Science	50 (5 citations)
	12. Citations or reviews in non-referenced journals with scientific reviewing	5		310 (62 citations)

Group	Indicators	Value	Assoc. Prof.	Dr. Petleshkova, MD, PhD
E	13. Awarded scientific degree 'doctor of sciences'	40	60 points - 1 scientific project (including intra-university) - awarded speciality (for direction 7.1. Medicine)	-
	14. Guidance of a successfully defended doctoral student (n is the number of co-supervisors of the corresponding doctoral student)	40/n		-
	15. Awarded medical speciality	40		80
	16. Participation in a national scientific or educational project	15		60
	17. Participation in an international scientific or educational project	20		20
	18. Leadership of a national scientific or educational project	30		-
	19. Leadership of an international scientific or educational project	40		-
	20. A published university textbook or a textbook that is used on the school network	40/n		1.6
	21. A published university handbook or a handbook that is used on the school network	20/n		10
	22. Education of the pregraduates, postgraduates, doctoral students (seminars and practical)	30		60
	Ж	Teaching activity:		
Academic workload (lections and practical)			100 points (for the last 2 years x 0.5 p./h)	320
Академична длъжност			200 points (Princ. Ass tant – 100 p. for 1 year)	200
Totally			810	2072.6

IX. Conclusion

Dr. Penka Vasileva PETLESHKOVA-Angelova meets the mandatory and specific conditions as well as the scientometric criteria for the academic position 'Associated Professor'.

Dr. Petleshkova is an authoritative clinical specialist and scientist. She is interested in the novelties of neonatology. Thanks to her scientific research, new therapeutic and diagnostic methods are implemented, which gives the ward of Neonatology significance not only in the structure of Plovdiv University, but also in the entire neonatology community in the country.

I propose to the respected scientific jury to give a positive vote for awarding the Academic position 'Associate Professor' to Dr. Penka Vasileva PETLESHKOVA-Angelova.

14Aug2024

Assoc. Prof. Dr. Victoria ATANASOVA Georgieva, MD, PhD

Заличено на основание
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