

Opinion

From

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For competition for an academic position "Associate Professor", for the needs of the department Pediatric Dentistry at the Faculty of Dental Medicine - MU Varna, on the basis of protocol No. 23/ 22.11.2023 of the FS and Order of the Rector of MU-Varna

R-109-519/ 30.11.2023.

The competition is conducted in accordance with the Academic Staff Development Act, the Regulations for the Application and the Regulations for the Development of Academic Staff at MU - Varna. It was published in the State Gazette, issue 83 of 03.10.2023. The applicant's documents have been prepared and submitted in accordance with the requirements of MU - Varna. Dr Sirma Todorova Angelova, chief assistant, has submitted documents for the competition.

Biographical data and career development

Dr. Sirma Todorova Angelova was born on December 14, 1980 in the town of Dobrich. In 1999 she graduated secondary education at Geo Milev Language School in Dobrich. In 2005 she obtained a Master's degree in International Finance at the University of Economics - Varna. She graduated in Dental Medicine in Varna in 2011. Since the same year she has been an assistant professor at the Department of Conservative Dentistry and Pediatric Dentistry at the Faculty of Dental Medicine, Medical University - Varna. From 2015 to 2017 she was a free doctoral student at the Department of Pediatric Dentistry, Faculty of Dental Medicine. In 2017 she obtained his PhD in Pediatric Dentistry after defending his dissertation entitled "Assessment and prevention of caries risk in children suffering from certain kidney diseases". Since 2015 she has a recognized specialty in Pediatric Dentistry. After a competition in 2018, she is a chief assistant professor in the same department.

Research activity

Dr. Anglelova's research work is in the field of the announced competition. She has published:

- Dissertation for the award of the degree of Doctor entitled: "Assessment and prevention of caries risk in children suffering from some kidney diseases" (23.17.2017)

- Monographic (habilitation) thesis on "Epigenetic and genetic aspects of oral health in persons with pyelonephritis". Publisher - Medical University "Prof. Dr. Paraskev Stoyanov"- Varna. Year of publication 2019, ISBN 978-619-221-201-8

- A total of 83 peer-reviewed publications and papers published in proceedings of national and international scientific forums in the country and abroad until 10.2023, of which:

1. Publications in connection with the dissertation - a total of 3;

2. Publications for the period 2011-2017 - 26 issues;

3. Papers published in the proceedings of national and international scientific forums in the country and abroad for the period until 2017 - 11 issues;

4. Publications for the period 2018 - 2023 - 43 in total, including,

- 8 publications and reports published in scientific journals, refereed and indexed in world-known databases of scientific information,

- 32 publications and reports published in non-refereed scientific journals, peer-reviewed or published in edited collective volumes,

- 3 full-text publications, outside the list of published works.

Among the 40 published papers submitted to the competition, in 24 of them Dr. Angelova is the sole author. In 16 out of the submitted total of 40 published scientific papers, Dr. Sirma Angelova is a co-author, and in 9 of them she is the first author.

Of the 40 scientific papers presented, 24 were published in international journals and 16 in national journals (Varna Medical Forum, Proceedings of the Union of Scientists-Varna, Scripta Scientifica Medicinae Dentalis, Scripta Scientifica Vox Studentium).

Habilitation work

The monographic work deals with oral health in the aspect of complex interaction of factors at the genome level in combination with characteristics of the environment of the

individual. Epigenetics stands out as one of the contemporary fields in various areas of science, dentistry being no exception. The concept of influencing genetically encoded information and modification of phenotypic expression of definitive indicators of oral health under conditions of specific interactions with and between environmental factors is at the epicenter of the problem addressed by the author. Dr. Angelova demonstrates a strong interrelationship between clinical and paraclinical oral health indicators and environmental parameters such as behavior patterns, socioeconomic status, level of education, diet, and attitudes toward one's own health. The in-depth analysis of the condition of hard dental structures and gingival tissue among patients with pyelonephritis in childhood adds clinical relevance and practical-applied value to the habilitation work.

The author emphasizes the potential for remodeling of phenotypic expression of genetic determinants induced and maintained by environmental factors.

PHD thesis

The main contributions concern the assessment of caries risk level, gingival tissue condition in children with pyelonephritis and nephrotic syndrome. Children without diseases were used as control group. The dissertation work of Dr. Angelova used heterogeneous indicators. A complex of: clinical indicators characterizing the condition of hard dental structures, oral-hygienic status and gingival tissues; salivary parameters (pH, blood, nitrites, glucose, leukocytes, secretory immunoglobulin A), as well as behavioral factors with influence on dental caries and the condition of gingival tissue were applied. On the basis of the results obtained, it was found that children with nephrotic syndrome had the highest risk of dental caries and gingival inflammation. The risk of initiation or progression of preexisting carious lesions of the hard dental tissues was lower among children diagnosed with pyelonephritis. The level of risk of dental caries and inflammatory gingival tissue damage was estimated to be the lowest in healthy children.

The conclusions drawn in the course of the study on the oral and dental status of children with diseases of the urinary system, nephrotic syndrome and pyelonephritis, emphasize the need for the implementation of targeted, relevant to the requirements and features of the complicated clinical situation, therapeutic and preventive actions to improve oral health in conditions of widespread diseases of the urinary system.

Contributions

Dr. Sirma Angelova's research contributions in relation to her studies and publications are:

- The impaired general somatic status of children diagnosed with nephrotic syndrome and the need for frequent complex and continuous therapeutic care shifts the attention of parents and children to the general disease. High cariousness of the dentition of these children is found. Patients with pyelonephritis have a lower caries rate. Logically, the caries rate is the lowest among healthy children.
- The type of occlusion serves as a predictor when considering the risk of dental caries in both clinically healthy children and children suffering from certain kidney diseases. This finding is entirely predictable, given the consequences of orthodontic deformities in general, and is of little value.
- Of the three groups of subjects studied, the greatest proportion of children with nephrotic syndrome had pH values that favored the processes of reversible and irreversible demineralisation of hard dental tissues.
- From the condition of soft tissues and the level of plaque control among the individuals in the three groups included in the study, Dr. Angelova concluded that children suffering from nephrotic syndrome were at the highest risk of dental caries. They were followed by patients diagnosed with pyelonephritis with a lower risk of tooth decay. As expected, clinically healthy participants were at the lowest risk of dental caries.
- Based on the disclosed data on the Behavioral Risk Factor Assessment for Dental Caries, it was concluded that study participants diagnosed with nephrotic syndrome were at the highest risk for dental caries. Again, logically, the risk level was lowest among children without comorbidities.
- The lowest level of secretory immunoglobulin A was found in the saliva of participants diagnosed with nephrotic syndrome.
- The principle that increased salivary secretory immunoglobulin A concentration is associated with lower levels of plaque and gingival indices, PLI and GI is confirmed. The decreased level of secretory immunoglobulin A favors the unlocking and advancement of inflammatory responses of the gingival tissue.
- High salivary nitrite concentration correlated with a reduction in the number of carious lesions and carious spots, as well as in the numerical value of PLI and GI indices among children without common diseases and those suffering from pyelonephritis.
- Among patients diagnosed with nephrotic syndrome, salivary nitrites did not show an anticaries effect on cavitated carious lesions. Nitrite was found to have an anticaries effect.

- In combination, secretory immunoglobulin A and salivary nitrites exhibit a synergistic anticaries effect.
- The significance of PLI and GI indicators as predictors of the destructive carious process was verified.
- Salivary nitrite content increases, in contrast to the numerical value of PLI and GI indicators, under conditions of increasing oral pH.
- In the study conducted on the impact of *Candida albicans* in the oral cavity on the prevalence of dental caries, the candidate concluded that these microorganisms do not play a predictive role on the initiation and progression of dental caries among children suffering from pyelonephritis and nephrotic syndrome, as well as in healthy control group participants, which has been confirmed in numerous previous scientific publications.
- In the design and implementation of clinical protocols to control the carious process, the degree of cooperation by patients and their parents should not be neglected.

Dr. Sirma Angelova, has participated in a total of 106 national and international scientific forums. She has actively participated in numerous editorial boards, working groups, organizational teams and courses.

Dr. Angelova participated in a scientific project approved for funding under the Science Fund at the Medical University of Varna. Prof. Diana Ivanova, PhD, with a total project budget of BGN 50 000 (12.2018).

She participated in scientific areas and groups at the Research Institute of Medical University-Varna with Director Prof. Anton Tonchev, MD, PhD in the field of Public Health and Disease Management, Scientific Group. Prof. Bistra Galunska, PharmD (02.2019).

The documents are accompanied by a reference from the Mu-Varna Library for an impact factor of 9.891 from four publications.

There is a submitted reference for 12 citations or reviews in scientific journals refereed and indexed in world-renowned databases of scientific information or in monographs and collective volumes, 31 citations or reviews in non-refereed journals or a total of 43.

Evaluation of teaching and learning activities

Since 2011 and up to the present time she has been conducting exercises with students in the following disciplines: Propedeutics of Pediatric Dentistry, Dental Prophylaxis, Clinic

of Pediatric Dentistry (Bulgarian and English language training program). Dr. Angelova participates in practical and theoretical examinations in these disciplines. From the certificate issued it is clear that her teaching load in the academic year 2018/2019 was 526 hours. For the academic year 2019/2020 the workload is 438 hours, for 2020/2021 the workload is 602 hours, for the following academic year it is 538 hours and for 2022/2023 it is 558 hours, which is above the required minimum standard of 360 hours.

Dr. Angelova's teaching load is evidence of the candidate's heavy workload and serious teaching activity as a university lecturer in student teaching.

As of 11.10.2023 Dr. Angelova has just over 12 years of experience in the field and teaching experience.

Conclusion

On the basis of the submitted documentation, after the analysis of the achievements, I consider that Dr. Sirma Angelova meets all the requirements for the academic position of Associate Professor in Pediatric Dentistry for the needs of the same Department.

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