

SCIENTIFIC REVIEW

on participation in a competition for the academic position of "Associate Professor"

by professional field 7.1 Medicine,

scientific specialty "Hygiene (including occupational, communal, school, radiation, etc.)",

announced in D.V. no. 61 /23.07.2021 .

for the needs of the Faculty of Public Health, Department of Hygiene and Epidemiology at the Medical University of Varna

One candidate appears at the competition -

Ch. Assistant Professor Dr. Rositsa Hristova Chamova, Ph.D.

Reviewer: **Prof. Dr. Teodora Todorova Dimitrova, MD, Ph.D.**

Deputy Dean Educational activity, Faculty of Public Health,

Medical University "Prof. Dr. Paraskev Stoyanov" Varna

Member of the scientific jury according to an order of the Rector of Medical University
- Varna № 109-395 / 20.09.2021,

The necessary documents, prepared by the candidate, are in compliance with the requirements of the Law for development of the academic staff in the Republic of Bulgaria and the Regulations for its application in Medical University „Prof. Dr. Paraskev Stoyanov“ - Varna. The deadline for submitting the documents has been met.

Biographical data and career development of Ch. Assistant Professor Dr. Rositsa Hristova Chamova, MD:

Year of birth: November 7, 1972

Education: Secondary education - Mathematical High School-Yambol (1990); Higher education - Medical University - Plovdiv (1990 - 1996).

Professional path: intern successively in CSMP Yambol and CSMP Varna "(1996 - 2013); Part-time assistant (2009-2011), Assistant (2011-2018), and Chief Assistant (since 2018) in the Department of Hygiene and Epidemiology, MU - Varna since 2014.

Specialties: in Emergency Medicine - 2006 and in Nutrition and Dietetics since 2017.

Scientific degree: Protected scientific-educational degree "Doctor" on the topic:

"Breastfeeding and urinary tract infections in children under 3 years in Varna" (2017)

Membership in professional and scientific organizations: member of the Bulgarian Medical Union, BDHD (Bulgarian Society of Nutrition and Dietetics), BSDGHH (Bulgarian Association of Pediatric Gastroenterology, Hepatology and Nutrition), BNDOZ (Bulgarian Scientific Society of Public Health), EUPHA (European Society of Public Health), BAHO (Bulgarian Public Health Association), ESPGHAN (European Society of Pediatric Gastroenterology, Hepatology and Nutrition).

Evaluation of quantitative and qualitative scientific indicators:

The evaluation of the candidate for the academic position "Associate Professor" - Dr. Rositsa Hristova Chamova is complex and includes research, teaching, and practical activities according to the Regulations for the development of the academic staff at the Medical University "Prof. Dr. Paraskev Stoyanov" Varna. It can be presented and analyzed as follows:

1) Total number of scientific developments

The total publication activity of the candidate contains 37 scientific papers.

Of these, in the current competition for AD "Associate Professor", Dr. Chamova is presented according to ZRASRB from 2018 with:

- Dissertation work: 1;
- Habilitation work: 1;
- Book - monograph based on the dissertation: 1 pc .;
- Full-text articles: and 14 scientific papers, of which:

1. Full-text publications in scientific journals referenced and indexed in world-famous databases with scientific information - 5 pcs.

in: Journal of IMAB (2) and Folia medica (3);

2. Full-text publications in collections of reports from scientific forums in Bulgaria - 2 pcs.

in: Proceedings of the First National Conference "Public Health - a Global Priority in Science and Practice" (2);

3. Full-text publications in magazines - 7 pcs.

in: Practical Pediatrics, Varna Medical Forum (2), Medinfo (2), IJSR, Medical Magazine

Of the 2 publications presented in this way, they are outside the evidence for fulfillment of the minimum requirements for borrowing of AD "Associate Professor".

The total number of points of the indicators (G5-9) is 340, which cover the mandatory minimum of 200 points.

2) Authorship:

From the actual publications in magazines, collections, and monographs on the competition for AD "Associate Professor", Dr. Chamova is the first or independent author in 14 / 87.5% / articles; the second author in 1 / 6.3% / articles, and third and consecutive author in 1 / 6.3% / articles.

3) Citation:

Dr. Chamova's scientific works are cited 8 times in scientific journals, referenced and indexed in world-famous databases with scientific information (1), in monographs and collective volumes with a scientific review (1), and in unreferenced journals with a scientific review (6). The reference for the citations was prepared based on data from the library of Medical University - Varna in the databases Web of Science, Scopus, and Google Scholar.

Dr. Chamova took part in 32 national and international congresses and conferences with 15 reports and 17 posters.

Dr. Rositsa Chamova has active scientific profiles in: Google Scholar, Research Gate, ORCID.

Research and applied activity of the candidate

The main scientific topics in Dr. Chamova's publications are related to nutrition and dietetics and hygiene of children and adolescents. In the personal reference attached to the competition documents for the contribution character of Dr. Chamova's works are formulated 15 main scientific-practical contributions of her works, distributed by scientific directions and as such with scientific character and scientific contributions with scientific-applied and methodical character, which I fully support:

Direction 1. Importance of healthy eating during pregnancy:

- The relationship between maternal nutrition and metabolic programming of diseases in the offspring is analyzed. Modern scientific evidence for the influence of adequate maternal energy intake in the prevention of adverse health effects in pregnancy, associated with both insufficient and excessive weight gain, is presented. Emphasis is placed on the relationship of maternal fatty acid composition of food, especially the maintenance of optimal levels of long-chain polyunsaturated fatty acids, mainly omega-3 and omega-6 fatty acids during pregnancy, with the normal development of the fetus and its impact on health programming. . The role of nutrients, sources of methyl donors during pregnancy, which are necessary for normal growth and development of the central nervous system, is considered. To overcome the risk of nutritional deficiencies, the need for reasonable intake of nutritional supplements by pregnant women, recommended by a doctor in strict compliance with the prescribed doses, was discussed. It is argued that the best strategy to deal with micronutrient deficiencies is a balanced diet.

- Dr. Chamova's monograph "Pregnant Nutrition and Metabolic Programming of Diseases" (2021) has made a great practical contribution to promoting the importance of healthy eating during pregnancy and the relationship between maternal nutrition and metabolic programming of diseases in the offspring. The physiological changes occurring in the female body during pregnancy, requiring a change in lifestyle, respectively in diet are described. Evidence for a link between a pregnant woman's malnutrition and the health of her offspring in later life has been systematized. The available up-to-date literature data on the health effects on the offspring of nutrient overeating from the pregnant woman and the nutritional deficiencies of iron, iodine, zinc, vitamin D, vitamin B12, folate and choline were studied.

- The results of clinical studies on the influence of dietary choline intake during pregnancy on the brain development of offspring are summarized (D 7 - 1). the offspring and the normal closure of the neural tube of the fetus.

- The needs for food supplements (D 8 - 6) during pregnancy are specified and the cases requiring supplementation during pregnancy are commented. Emphasis is placed on the importance of healthy eating during pregnancy and highlights the worrying trend of increasing use of nutritional supplements in recent years, which may be due to the promotion of the health benefits of specific nutrients.

Direction 2. Breastfeeding - a behavioral factor with extremely beneficial health consequences for the child and the mother:

- **The role of breast milk in urinary tract infections**, which are the second most common infections in childhood, with a tendency to recurrence, is reflected and analyzed in detail. The advantages of breast milk in terms of its composition and immunological properties are highlighted. The theoretical basics on the protective functions of breast milk and the epidemiological data on the spread of urinary tract infections at an early age are comprehensively clarified, with the main emphasis on the possibilities for prevention through the application of modern recommendations for breastfeeding practices.

- The importance for the beneficial health effects of breast milk of the **probiotics** in its composition has been studied and popularized. Breast milk is an important source of lactic acid bacteria for the baby - lactobacilli and bifidobacteria, which protect it from infectious diseases. The probiotic potential of the lactic acid bacteria *Lactobacillus bifidus* contained in breast milk is associated with suppression of the development of pathogenic bacteria in the intestine and reduction of the risk of dysbiosis. The presence of these beneficial bacteria in breast milk contributes to the development and / or composition of the intestinal microflora of the newborn. Breast milk is the most important source of intestinal microflora for newborns, as it is the only food that babies receive. Microbial intestinal colonization in the newborn is a step-by-step process, ensuring the maturation of the immune system and the development of the intestinal tract, to build and maintain a good intestinal barrier.

- An overview was made with an emphasis on the biological significance of **fat-soluble vitamins** that are part of breast milk. The results of numerous studies on the

relationship between the nutritional intake of these vitamins in breastfeeding and the physical and mental development of the child are presented. The benefits of these nutrients for the infant are discussed. The potential risks for the health and development of the child's body in case of insufficient intake of fat-soluble vitamins with breast milk are also commented.

- Another advantage of breast milk over milk formulas has been studied and presented, namely the provision of nutrients that have an **antioxidant effect**. During fetal development, the life of the fetus is preserved at low oxygen content. It increases rapidly when, immediately after birth, respiration begins and tissue oxygenation occurs. The antioxidant defense system matures during pregnancy and premature babies are adapted to cope with this physiological situation. However, premature babies have an immature antioxidant defense system and an increased risk of oxidative stress. They are very sensitive to the harmful effects of reactive oxygen species generated in the fetus during birth. Compared to infant formulas, breast milk provides better antioxidant protection. This is extremely important for newborns who are exposed to increased oxidative stress during birth due to increased production of reactive oxygen species (O₂⁻, H₂O₂ and OH) and a decrease in antioxidant protective components such as vitamin E or glutathione peroxidase.

Direction 3. Health benefits from the consumption of bee products:

The biological effects of royal jelly and its role in human health have been studied and described. Royal jelly is a bee product, unique in its composition and biological activity. Its proven biochemical properties have attracted the attention of researchers in recent years. The complex combination of macro - and micronutrients determines the biological effects of royal jelly. It has anti-inflammatory, antibacterial, antioxidant, antitumor, antiallergic and antihypertensive properties, which determine its growing pharmaceutical benefits and increased interest in their study. Clinical studies show that royal jelly can have a beneficial effect on atherosclerotic processes in humans. The bee product stimulates erythropoiesis, improves glucose tolerance and mental health.

Direction 4. Hygiene of children and adolescents:

- **Ergonomic factors influencing the levels of fatigue** of primary school students related to school furniture have been identified. Training in good ergonomic conditions has been shown to improve mental performance.

- **Anthropometric nutritional status of students in the initial course of study** from Varna (G 8 - 7) was assessed. It is established that among the studied students there are also those with underweight and malnutrition. The highest share of children with malnutrition is in the first grade, and the lowest - in the fourth grade. The study reveals the need to create conditions that prevent the accumulation of body weight during full-time training in the initial course.

Direction 5. Study of eating habits of different groups of the population:

- **The eating habits of workers at different levels of psycho-emotional stress** (D 8 - 2) were studied, which proves that stress at work affects the diet. The group of subjects working in conditions of psycho-emotional stress does not eat according to the recommendations for healthy eating. In order to promote health in the workplace, occupational health services should monitor eating habits and adequately advise and train workers in intense psycho-emotional stress for healthy eating behavior.

- **The study of nutrition as a significant factor in bone health** (D 7 - 5) finds that the severity of osteoporosis can be reduced through certain lifestyle changes. Nutrition plays an important role in reducing the risk of osteoporosis by affecting the development and maintenance of bone mass. Among the groups at risk for osteoporosis, it is necessary to explain the benefits of consuming certain foods that have a prophylactic effect on bone health.

- **A pilot study of the eating habits of women of childbearing age from the city of Varna** (D 7 - 3) shows that among the surveyed women there are those who do not follow a certain diet in terms of the number of meals per day. Unfavorable is the fact that among women there are those who do not consume milk and dairy products, meat and fish. This puts these women at risk of nutritional deficiencies, which could have a number of adverse effects - affecting a woman's reproductive functions, the course and outcome of pregnancy, and the long-term health of the offspring. All these consequences for public health necessitate the promotion of healthy eating and the explanation, especially among the younger ones, of the risks of applying restrictive eating patterns.

4) Teaching activity:

Dr. Rositsa Hristova Chamova has been an assistant and chief assistant in the Department of Hygiene for 10 years, and a lecturer at MU-Varna for 12 years and has a significant study load. She conducts lectures, practical exercises, seminars with trainee doctors, theoretical lecture courses (including basic course) of specialists in Nutrition and Dietetics and participates in a number of postgraduate courses.

In the presented certificate for realized study load of the candidate at MU - Varna for the period of the last 5 consecutive years shows the following: 2016/2017 - classroom employment - 303 hours; 2017/2018 - classroom employment - 408 hours; 2018/2019 - classroom employment - 418 hours; 2019/2020 - classroom employment - 407 hours; 2020/2021 - classroom employment - 411 hours

i.e. for the last 5 years its classroom workload amounts to an average of 390 teaching hours at a standard of 360 teachings h. (108% workload from the norm for study workload) and is completely sufficient for her participation in the current competition.

CONCLUSION

Ch. Assistant Professor Dr. Rositsa Hristova Chamova, Ph.D. is a doctor and scientist with extensive experience in the field of nutrition and dietetics. Contributions are derived from her research on the basis of studied literature, epidemiological and screening studies among vulnerable groups, children, pregnant and lactating women. Its scientific production and the presented documents meet the requirements of the Regulations for the development of the scientific staff of the Medical University - Varna, therefore I allow myself to give my **positive assessment** and to recommend to the esteemed scientific jury to support the choice of **Ch. Assistant Professor Dr. Rositsa Hristova Chamova, Ph.D.** for "**ASSOCIATE PROFESSOR**" in the scientific specialty "**Hygiene (including occupational, communal, school, radiation, etc.)**" for the needs of the Faculty of Public Health, Department of Hygiene and Epidemiology at the Medical University of Varna.

November 10, 2021.

Varna

Reviewer:



(Prof. Dr. Teodora Todorova Dimitrova, MD, PhD)