

REVIEW
From
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Subject: competition for the academic position "Professor" in the scientific specialty "Hygiene (incl. labor, communal, school, radiation, etc.)", professional direction 7.1. Medicine, area of higher education 7. Health care and sports, for the needs of the Department of Hygiene, Department of Hygiene and Epidemiology, Faculty of Public Health, according to an announcement published in the State Gazette, no. 32/ 26.04.2022

By order No. R-109-260/23.06.2022 of the Rector of the Medical University - Varna "Prof. Dr. Paraskev Stoyanov" - Varna, FS decision (Protocol No. 185/19.05.2022) and Protocol No. 1/07.05.2022 from a meeting of a scientific jury, I am appointed to prepare a review under a competitive procedure for occupying an academic position "Professor" in the scientific specialty "Hygiene (incl. labor, communal, school, radiation, etc.)" in the field of higher education 7. Health care and sports, professional direction 7.1. Medicine, at the Faculty of Public Health, Department of Hygiene and Epidemiology, Department of Hygiene.

The only candidate in the competition is Associate Professor Darina Naydenova Hristova, PhD, MD.

1. Brief biographical data and career development of the candidate.

Dr. Darina Naydenova Hristova graduated in Medicine from the Medical University - Varna in 2000.

Her professional development began in 2001 and until 2002 she was a resident physician at MSU "FR. Joliot-Curie". During the period 2002-2003, Dr. Hristova was a senior expert, RZOK - Varna. From 2003 until now, Dr. Hristova has been working at the Medical University "Prof. Dr. Paraskev Stoyanov"-Varna, as follows from 2003 to 2004 he was a part-time assistant in the Department of "Hygiene and Disaster Situations"; in the period 2005 - 2009, he was an assistant in the Department of "Hygiene and Disaster Situations"; from 2009 to 2011 – senior assistant in the Department of "Hygiene and Disaster Situations"; in the period 2011 - 2015 he was the main assistant in the Department of "Hygiene and Disaster Situations"; from 2015 to 2020 he was an associate professor, majoring in Hygiene, successively in the Department of "Preclinical and Clinical Sciences", "Organization and Economics of Pharmacy", "Hygiene and Epidemiology", and in 2020 until now he is the head of the "Hygiene" Department, Department of Hygiene and Epidemiology, MU - Varna. From 2011 to 2015, Dr. Hristova was a nutritionist at the Medical Center "Dr. Petinka Tsvetkova", Varna, and from 2016 to the present, she worked as a nutritionist at the "Esthetic Club" Medical Center, Varna .

Dr. Darina Naydenova Hristova, PhD, holds a medical specialty "Nutrition and Dietetics" since 2010.

The academic development of Dr. Darina Naydenova Hristova began as a PhD student of independent training at the "Hygiene and Disaster Situations" Department, "Hygiene" specialty, MU - Varna in the period 2013 - 2015. In 2015, after successfully defending her dissertation on the topic "Nutrition behavior, anthropometric indicators, physical activity and physical capacity in young men and women with underweight, normal and overweight" acquired a scientific and educational degree "Doctor" in scientific specialty: "Hygiene (incl. Nutrition)". Since 2015, Dr. Darina Naydenova Hristova has the academic position "Docent" in the scientific specialty "Hygiene".

Dr. Darina Naydenova Hristova has completed 15 additional specialized qualification courses and trainings: 2005 - course for trainers "Breastfeeding and healthy nutrition of pregnant and lactating women"; 2007 - thematic course "Principles and techniques for changing eating behavior during consultations of patients on healthy and dietary nutrition", held at the National Center for Nutrition and Dietetics, Laboratory "Nutrition and Public Health", Sofia; 2009 – a one-month breastfeeding support course organized by the National Breastfeeding Committee (NCC). Successfully passed the Lactation Consultant Exam; 2009 – accredited course at IASO (International Association for the Study of Obesity) SCOPE (Specialist Certification of Obesity Professional Education), May, Albena, Bulgaria; 2011 European Summer School of Pediatric Gastroenterology, organized by the European Society of Pediatric Gastroenterology, Hepatology and Nutrition, Department of Pediatrics, MU - Varna; 2012 "Presentation Skills" training from Consulteam Human Capital; 2013, 2014, 2015x - "Metabolic health" trainings - I, II and III part, organized by the Natural Academy; 2019 practical training for the application of the "Test for neuropsychological development of 5-year-olds. age NDT5", MU - Plovdiv; 2019 training for working with the electronic platform "Blackboard learn +", several levels and competencies; 2020 training on "Nutrigenomics: Genetic Testing for Personalized Nutrition" at Dietitians of Canada and becoming part of the first certified nutrigenomics team in Bulgaria; 2021 2 SDO courses (15-19.04.2021): Basics of aromatherapy; (13-14.11.2021):

Assoc. Prof. Dr. Hristova is a reviewer for scientific journals: Journal of IMAB"; Journal of Biomedical and Clinical Research (JBCR); Scientific publications of the Union of Scientists - Varna, "Medicine and Ecology" series; Collections of reports from International Interdisciplinary Meetings "Alumni Club and Friends", MU-Varna, 2020, 2021.

Assoc. Prof. Dr. Hristova is a member of the "Bulgarian Medical Union", "Bulgarian Society of Nutrition and Dietetics", Bulgarian Society of Public Health (BDOZ), European Society of Public Health (EUPH), "National Breastfeeding Committee", National Association "Breastfeeding Support", deputy chairman of "Alumni Club at MU - Varna".

Dr. Darina Naydenova Hristova is fluent in English and Russian.

2. General description of the presented materials and fulfillment of the scientometric criteria.

Assoc. Prof. Dr. Darina Naydenova Hristova has presented a total of 26 scientific works with relevant summaries: dissertation work for obtaining the educational and scientific degree

"Doctor" - "Nutrition behavior, anthropometric indicators, physical activity and physical capacity of young men and women with normal , underweight and overweight"; a monograph on "Eating Disorders. Aspects of the Clinical Practice of the Nutrition and Dietetics Physician," ed. Medical University - Varna, 2022; 6 publications and reports published in scientific publications, referenced and indexed in world-famous databases with scientific information, as she is the first author of one of the publications; 9 publications and reports published in non-refereed peer-reviewed journals or published in edited collective volumes, 9 full-text publications in scientific journals and anthologies, beyond the minimum scientometric requirements for holding the AD "professor", of which one is the first author; 3 contributions of Assoc. Prof. Hristova in published university textbooks and in 3 university teaching aids, two of which are in English. A list of 12 citations is presented.

Associate Professor Hristova has participated in 96 national and international scientific events.

The academic reference (No. 315/10.06.2022) for the publications, citations and scientific profiles of Assoc. Prof. Dr. Darina Naydenova Hristova, PhD, Department of Hygiene and Epidemiology, Faculty of Public Health, Medical University-Varna, prepared in the Library of MU-Varna, based on the information provided by the applicant and the automated information from the international scientific databases, in accordance with the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for the Development of the Academic Staff of the Medical University - Varna, certifies that the candidate's publications, citations and scientific profiles correspond to the minimum scientometric requirements for holding the AD "professor".

The academic reference certifies 100 p (with a mandatory minimum of 100 p) from a published monograph; 212 p from 9 scientific publications in publications that are referenced and indexed in world-famous databases with scientific information (with a mandatory minimum of 200 items); 125 p out of 12 Citations reflecting the candidate's scientific activity; 243.29 p for (with a mandatory minimum of 100 p for indicators E13-E22, referring to supervision of successfully defended doctoral students; acquired medical specialties; participation in a national and international scientific project; published university textbook or textbook that is used in the school network; training of interns, specialists and doctoral students (seminars and practical classes); 148.5 p of full-text publications in scientific journals and anthologies, beyond the minimum scientometric requirements for holding the AD "professor".

The publications presented by the candidate Assoc. Prof. Hristova for participation in the competition, such as number, citations, scientific profiles and categories, fully correspond to the recommended quantitative scientometric criteria for occupying the JSC "Professor", defined in the Regulations for the development of the academic staff at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

3. Qualitative assessment of research activity and contributions.

In the presented scientific production of Assoc. Prof. Dr. Darina Naydenova Hristova, PhD, scientific works and results of the research work are separated into 7 thematic scientific areas, including 12 sub-areas: Disorders in eating behavior and alternative models of eating;

Vitamin D in the genesis of obesity and its role as an epigenetic factor; Recommendations for nutrition during maternity and early childhood (Nutrition intake of n-3 fatty acids in pregnant and lactating women; Micronutrient status, reproductive problems and fetal programming of metabolic disorders; Breastfeeding practices; Vitamin B12 status in infancy and early childhood); Food allergies in infancy; Nutrition, nutritional status and physical activity in adolescents (Eating behavior, anthropometric parameters, dental status and physical activity in 12th grade boys and girls); Physical activity and nutritional status in adolescents with adolescent idiopathic scoliosis (Effect of Choreography on Fatigue and School Performance in Elementary School Students); Functional foods and beverages (Coffee as a functional beverage used during overtime and night shift work in the prevention of fatigue; Coffee consumption among workers in conditions of noise and vibration; Antioxidant composition of raspberry fruit juice (*Rubus idaeus*)); Nutrition, health risk and food culture among consumers (Biological hazards in food; Food additives and informed consumer choice).

The scientific contributions of Assoc. Prof. Darina Naydenova Hristova, PhD, MD in the individual thematic areas, can be outlined as follows:

I. Eating disorders and alternative eating patterns

Scientific contributions: The etiological factors for the occurrence of eating disorders (EDs) have been studied; the role of society is assessed; a pathophysiological model of NHP and the modern classification of these disorders are outlined; The diagnostic criteria, laboratory biomarkers, psychoprofile, clinical symptoms and treatment options for the individual groups of diseases are examined in detail: anorexia nervosa, bulimia nervosa, orthorexia nervosa, muscular dysmorphia, compulsive eating; The applications of the ketogenic diet in various diseases were studied and the possibilities of its use also as a therapeutic approach in metabolic disorders were evaluated. autism, Alzheimer's disease, Parkinson's disease and others.

Scientific-applied and confirmatory contributions: Practical strategies have been formulated to deal with one of the most common compulsive eating disorder - compulsive eating; Recommendations have been made for screening of subclinical NPH with an appropriate questionnaire applicable in general medical practice; One of the "youngest" forms of ADHD - orthorexia (OR) is described in detail; experience in the diagnosis and therapeutic approach in the various forms of NPH is shared and cases frequently encountered in the office of the doctor specializing in nutrition and dietetics are described with the specific laboratory markers, deviations in the anthropometric status and approaches to dealing with malnutrition incl. and among pregnant women.

II. Vitamin D in the genesis of obesity and its role as an epigenetic factor

Scientific contributions: It has been studied available literature on vitamin D and the role it plays as an epigenetic factor and regulator of gene expression; A strong reciprocity between vitamin D metabolites and epigenetic mechanisms has been established; A comprehensive review of pleiotropic effects and the role of vitamin D in the etiology of metabolic disorders, pregnancy pathology, cognitive disorders, osteoporosis, autoimmune diseases, and neoplasms has been made.

III. Recommendations for nutrition in the period of motherhood and early childhood

Scientific contributions: A review of the scientific literature was made on the role of essential fatty acids of group n-3 in pregnancy and breastfeeding; The scientific data on the importance of n-3 fatty acids for ensuring optimal brain growth and development of the child, as well as for the mental health of the mother, are summarized; Scientific evidence has been collected on the relationship between the nutritional status of the mother and the intake of a number of macronutrients (protein) and micronutrients (vitamin B9, vitamin D, iron, p-3 fatty acids, etc.); A dependency was found between the inadequate gestational gain and the increased risk of diabetes mellitus, visceral obesity and arterial hypertension in the offspring; It has been found that optimizing body weight before and during pregnancy, together with a healthy dietary intake, can improve the micronutrient status of the mother and reduce the risks of in utero programming of metabolic diseases in the offspring; The essential role of vitamin B12 in the development of the nervous system, hematopoiesis and immunity in childhood is examined; The role of child nutrition in the neonatal and nursing period as a limiting factor for normal physical and neuropsychological development with possible long-term health effects is summarized.

Scientific and applied contributions: Attention has been drawn to the high risk of inadequate (low) dietary intake of n-3 fatty acids in the population of Bulgarian mothers; proposals with clinical applicability have been made: in vegetarian mothers to monitor the levels of vit. B12 and in case of established deficiency, supplement the mother and examine the infant; Breastfeeding practices in the Varna region among 286 women were studied, as well as the way their children were fed from birth to the end of the third year; The results confirmed that cesarean women started breastfeeding later and that more highly educated women breastfed longer; An unfavorable characteristic of a short duration of breastfeeding for children has been confirmed.

IV. Food allergies in infancy

Scientific contributions: The roles of early diagnosis of clinical manifestations and dietary nutrition in preventing the severe complications of cow's milk protein allergy (CLM) have been studied; The relationship between the feeding pattern (exclusive breastfeeding, mixed feeding, infant formula feeding) and ABCM was evaluated; The risk factors for the occurrence of food allergy in infancy were analyzed: diet and lifestyle (including smoking) of the mother, birth at term or prematurely, mode of birth (per vias naturalis, s. cesarea), atopic terrain in the family and etc.

Scientific and applied contributions: Various aspects of food allergy in infancy have been studied: at what point since childhood, ABCM is manifested; what are the values of some biomarkers: immunoglobulin E (IgE) and hemoglobin (Hb) in children with ABCM in Plevna region, Bulgaria; The most frequent clinical manifestations of ABCM in infancy have been identified; The data of other authors have been confirmed, that often chronic iron deficiency anemia can be the only clinical manifestation of ABCM in young children; The role of the increased value of IgE as a sensitive diagnostic and prognostic criterion for severe and long-term course of allergy has been confirmed; An algorithm of behavior in case of established ABCM has been developed.

V. Nutrition, nutritional status and physical activity in adolescents

Scientific contributions: Trends in adolescent eating patterns were analyzed and the likely risks of nutritional deficiencies and health problems resulting from their dietary preferences

were assessed; The recommendations for physical activity in adolescents are summarized in view of the influence on their future health status; A comprehensive analysis of the various anthropometric indices, indicators and methods used to assess nutritional status was made; The advantages and disadvantages of the main groups of visualization methods for determining body composition are compared.

Scientific and applied contributions: The peculiarities of the eating habits, anthropometric status, oral status and physical activity of a representative sample of young men and women aged 18-20 years from the region were investigated. Varna; Negative characteristics of food intake and diet were found in overweight and obese girls and underweight girls; Attention was paid to a number of favorable characteristics in eating behavior: high consumption of milk and dairy products among adolescents, as well as the presence of a regular morning breakfast and the high multiplicity of the diet in the groups with underweight and normal body weight; A significant difference was found in the prognostic role of the two main anthropometric indicators: BMI and percentage of body fat (%BM); Emphasis is placed on the leading role of society and the media environment in forming the eating pattern in adolescence and the weaker influence of socio-economic factors; Practical recommendations for intervention programs aimed at limiting nutritional deficiencies among young men and women are derived.

Special attention is paid to physical activity and nutritional status in adolescents with adolescent idiopathic scoliosis.

Scientific contributions: Nutritional status was assessed in children with adolescent idiopathic scoliosis (AIS); Vitamin D levels in children with AIS and in their healthy peers were studied and compared with existing recommendations; The physical activity of children with AIS was measured.

Scientific and applied contributions: The presence of peculiarities in anthropometric indicators in children with AIS is confirmed; The high frequency of vitamin D deficiency among adolescents during the winter-spring period and the high frequency of severe deficiency among children with AIS are proven; The leading unfavorable characteristics in the children's eating pattern have been identified; Evidence is provided for the role of physical activity in the management of AIS; Recommendations for the nutrition and supplementation of children with AIS have been formulated.

VI. Functional foods and beverages

Scientific contributions: The main effects on functioning, sleep, psyche, mood and emotions of the consumption of coffee as a tonic drink in the work environment are outlined; The scientific evidence for the safe amount of caffeine for use by workers with high levels of mental stress is summarized; Attention has been drawn to the need for a complex approach in assessing the health effects of coffee consumption; Data from the scientific literature on the content of antioxidants in raspberry fruits (*Rubus idaeus*) were synthesized; The main characteristics of fluorescence methods based on applied photonics used to determine the antioxidant content of fruit juices are analyzed.

Scientific and applied contributions: Coffee consumption among workers in noise and vibration conditions was evaluated; The relationship between daily coffee consumption and work task characteristics has been proven; Recommendations are made for the safe consumption of coffee as a tonic drink at the workplace for workers exposed to high noise

levels and local vibrations given their unidirectional adverse effect; The role of added inulin and lactulose in the raspberry fruit juice samples was investigated in measuring the antioxidant activity using different fluorescence methods (DPPH and ABTS).

VII. Nutrition, health risk and food culture among consumers

Scientific contributions: The characteristics of the causative agents of some food poisonings have been analyzed in terms of their use as potential bioterrorist weapons; Morphological and biochemical characteristics, clinical features, as well as treatment and possible prevention measures of foodborne infections by bacteria from the genera *Salmonella*, *Shigella*, *Bacillus*, *Clostridium*, *Listeria*, *Campylobacter*, *Escherichia*, *Staphylococcus*, *Vibrio*, *Enterobacter* and *Yersinia* are discussed; Past examples of biological agent attacks causing food poisoning are presented, as well as the implications for society; A number of issues related to the safety of technological additives given the differences in their origin are discussed.

Scientific and applied contributions: Clinical thinking is focused on the mechanisms of transmission and factors of spread of foodborne bacterial infections and attention is paid to preventive measures; The attitudes and awareness of consumers regarding the choice of foods containing additives have been established; The need to impose a reform in the presentation of information by producers on food labels is justified in order to more successfully guide the consumer and make a healthier informed choice when buying food.

4. Teaching and learning activity

From the academic report with reg. No. 315/10.06.2022, it can be seen that Assoc. Prof. Darina Naydenova Hristova, PhD, MD is the supervisor of two successfully defended doctoral students and currently supervises 6 more doctoral students. He is the head of the training of specialists in the medical specialty of Nutrition and Dietetics and of 11 graduates from the master's programs of the Health Ministry.

Assoc. Prof. Dr. Darina Naydenova Hristova, leads classes in a number of academic disciplines: Hygiene and ecology, Bulgarian language training, medicine; Hygiene and ecology, pharmacy; Hygiene and epidemiology, Bulgarian language training, dental medicine; Current problems of the nutrition of healthy and sick people for masters of medicine, SID; Nutrition and Socially Significant Diseases for Dental Students, SID; Socially significant health problems and diseases related to nutrition for students of IOH, SID; Current problems of the nutrition of the healthy and the sick person for students in the specialty "Health Management", SID; Environment and Health, Masters "Public Health" in Russian; Hygiene and Ecology - master's program in health management in Russian; Environment, nutrition and health - masters "Health Management"; Nutrition and dietetics - masters "Rehabilitation, wellness and spa"; Food Safety. Legislation in the field of food - OKOZ master's program; Nutritional hygiene I and II part - bachelors - IOH; Pharmaco-medical aspects of nutrition, masters FMG; Nutrition and dietetics, medical cosmetologist; Nutrition and Health, Health Management Bachelor; Nutrition and health, speech therapy; Hygiene and Environment, Assistant Pharmacist; Hygiene and ecology, dental technician; Hygiene and ecology, rehabilitator; Hygiene and ecology, nurses; Hygiene and ecology, X-ray laboratory technician; Hygiene and ecology - under the Health Assistant program; Lecturer SDO

specialization Nutrition and dietetics Basic Course Part IV: Nutrition and Health Risk. Diet therapy.

She is the chairman of the state examination committee for the specialty Nutrition and dietetics, 2020, 2021. She is the author of the program, leader and lecturer of courses on food and nutrition "Disorders in eating behavior - a problem of the 21st century. Opportunities for Influence and Therapy", 2019; Lecturer at the "Breastfeeding Support" SDO, 2019; Lecturer in SDO "Nutrition during the first 1000 days", face-to-face and electronic training, 2019-2020.

Prof. Hristova's expert activity is related to participation as a lecturer in a number of programs: a certified digital course for continuing medical education Nestle Academy for Professional Excellence in Pediatrics, Module GAP, with the topic "Extreme patterns of nutrition in the family and consequences for children's health", 05.11.2021; Forum medicus, Nestle Nutrition Bulgaria, with the theme "Maternal nutrition and child health programming", 29.11-01.12.2019, Belgrade, Republic of Macedonia; Forum medicus, Nestle Nutrition Bulgaria, seminar "Child nutrition - new horizons" with the topic "Role of some essential lipids in childhood", 17-19.06.2022, Pavel Banya; BMHO (Bulgarian Medical Homeopathic Organization), professional meeting: "Disorders of eating behavior. The Place of Homeopathy." – June 13, 2021; Re: Gena on "The Nutrition Factor in Endometriosis" Webinar, 07/29/2021; Diets and Genome Webinar, 06/20/2021; webinar on "The nutritional factor in Hashimoto's thyroiditis", 15.01.2022; Endometriosis Foundation within the framework of a patient conference on endometriosis "Myths and truths about endometriosis", 19-20.03.2022 with the theme "The bio-individual approach to endometriosis. Nutrigenomics and Diet."; Binary lessons and trainings on topics related to healthy eating, energy balance, physical activity, eating behavior disorders in "Zahari Stoyanov" Elementary School and in high schools in the city of Varna in the period 2014 until now.

Prof. Hristova's teaching experience, according to the certificate provided by the University of Varna (No. 099-1537/10.06.2022), is 17 years 02 months. and 16 days, with the study load (reference Exh. No. 112-179/17.05.2022) significantly exceeding the normative requirements of MU-Varna and is as follows: academic year 2017/2018 - 378 hours; 2018/2019 year – 341 hours; 2019/2020 year – 336 hours; 2020/2021 – 296 hours.

CONCLUSION

The provided documents confirm the rich experience, productive scientific and research work, professional competence and teaching experience of Associate Professor Darina Naydenova Hristova, PhD, MD.

The analysis of the overall research, publication and teaching activities of Associate Professor Darina Naydenova Hristova, PhD, MD gives me the reason to claim that they fully correspond to the quantitative scientometric criteria for holding the academic position "Professor", defined in the Development Regulations of the academic staff at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna and of the Law on the Development of the Academic Staff in the Republic of Bulgaria.

Based on the above, I express a positive assessment and strongly recommend to the respected Scientific Jury to vote "FOR" for holding of the academic position "Professor" by

Associate Professor Darina Naydenova Hristova, PhD, MD in the scientific specialty "Hygiene (incl. labor, communal, school , radiation, etc.)" in the field of higher education 7. Health care and sports, professional direction 7.1. Medicine, at the Faculty of Public Health, Department of Hygiene, Department of Hygiene and Epidemiology, Faculty of Public Health, Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

29.08.2022

Prof. Veselka Duleva, PhD, MD:.....