

## STATEMENT

by

**Assoc. Prof. Dr. Lalka Rangelova, PhD**

Food and Nutrition Department at the NCPHA – Sofia

**Subject:** Dissertation paper for awarding an educational and scientific degree "Doctor"

**Scientific specialty:** "Hygiene"

**Doctoral candidate:** Dr. MIGLENA YORDANOVA MARINOVA – ASHKAR, a doctoral student at Medical University of Varna

**Topic:** "Importance of breastfeeding for the health of high-risk children up to 3 years of age with family history of allergy."

### **Brief details of the candidate's professional growth**

**Miglena Yordanova Marinova-Ashkar** graduated from the MU – Varna in 1989. Since July 2009, Dr. Marinova-Ashkar has been working as a head of the Neonatal Department at the Hospital "St. Anna AD – Varna".

The entire process including enrollment, successful passing of the doctoral minimum exam, taking out with the right to a public defence complies with the legal provisions and the Regulations for the Development of the Academic Staff in the Medical University of Varna. Dr. Marinova-Ashkar was enrolled as a regular doctoral student for obtaining the educational and scientific degree "Doctor" with a dissertation topic "Prevention of food allergy in infants from families with clearly demonstrated atopy in north-eastern Bulgaria" in Field of Study in Higher Education 7. Healthcare and Sports, by professional field 7.1. Medicine in the scientific specialty "HYGIENE" (incl. occupational, municipal, radiation, school, etc.) with a scientific supervisor Assoc. Prof. Ruzha Pancheva-Dimitrova, PhD, pursuant to the Rector's Order No. P-109-44/01.02.2019. After a successful internal defence, held on 22.02.2023, the doctoral student was taken out with the right to a public defence at the Departmental council of the Department of Hygiene and Epidemiology, MU – Varna, protocol No. 361/22.05.2023.

### **Characteristics and evaluation of the dissertation paper**

The dissertation paper comprises 154 standard pages and is structured according to the accepted requirements. The structural sections of the dissertation are well balanced and in the following logical sequence: review of literature – 50 pages, scope, tasks, research methodology – 7 pages, results and discussion – 40 pages, conclusions, recommendations and contributions – 4 pages. 306 literature sources have been cited, 31 of them presented in Cyrillic and 275 – in Latin. The dissertation paper includes 31 tables, 6 figures and 7 appendices, representing the volume of the research very well and providing a basis for an analytical discussion of the results. The review of literature summarizes up-to-date information and demonstrates the candidate's knowledge and practical experience in the field of childhood hygiene.

#### *Relevance of the Dissertation Topic*

Allergic diseases have been among the most common ones of the present day, affecting up to 30% of all children. Environmental pollution resulting from chemical substances, the



presence of food allergens, the unsupervised medication use, lifestyle changes of the population have been just some of the factors associated with the the development of allergic diseases. Genetic and environmental factors are increasingly interacting to influence the etiology of allergic diseases in children. Breastmilk provides all the energy and nutrients that the infant needs for the first 6 months of life, The short-term and long-term benefits of breastfeeding have been acknowledged, and in this respect, breastfeeding has proved to be essential for the growth, development and health of the child during the critical period of metabolic and immune programming.

*Review of literature:* the theoretical justification and research of the available literature sources relevant to the dissertation topic occupy about 32% of the entire paper being well structured into seven sections. The review of literature provides strong evidence on the etiology and significance of atopy in early childhood. It deals in depth with issues related to factors increasing the risk of atopy; economic losses resulting from atopy in childhood; preventive practices in families with atopy; the importance of breastfeeding for growth, especially in children at risk of developing atopy and in those suffering from atopy.

*The scope* of the dissertation paper has been precisely defined: To examine the impact of breastfeeding on the growth, development and health of children of early childhood (including physical and neuropsychological development, acute morbidity, manifestations of allergies) from families with evidence of atopy. To achieve the intended scope, four tasks have been formulated: to evaluate the impact of breastfeeding on the growth of children born into families with a history of allergy; to measure the association between breastfeeding and acute morbidity in children with a family history of allergy; to follow the manifestations of allergy and their relationship with milk feeding in the examined group of children and to evaluate the NPD (neuropsychological development) of children born into families with a history of allergy and to evaluate the influence of breastfeeding on NPD when controlling the factors: maternal smoking, number of family members and number of siblings.

The methodology has been specified. A prospective cohort study has been conducted among children with a family history of allergy. 1210 parturients have been invited to participate, 156 of them have accepted to participate in surveillance and 120 – have completed the study. Study participants were selected based on predefined inclusion and exclusion criteria.

*The results* have confirmed the fact that exclusively breastfed children have a healthier growth rate according to the World Health Organization standards and criteria, whereas in complementary-/mixed-fed children there is a faster rate of weight gain at the age of 2 years with statistical significance of the indicators , weight-for-height (WH), weight-for-age (WA) and BMI-for-age. The type of milk that the infant received during the breastfeeding period had a borderline of statistical significance in the indicators of WH, WA and BMI-for- age at the age of 2 years. Children fed with infant formula (in mixed or complementary feeding) have a faster rate of weight gain at the age of 2 years. Children without AD (atopic dermatitis) have a faster growth rate related to height and weight at the age of 2 years compared to those suffering from AD with statistical significance of the results. The study of acute morbidity in children shows in a plausible manner that both girls and boys with FA (food allergy) fall ill much more frequently than those without FA. When analysing the manifestations of allergy and their association with milk feeding in the studied



group of children, it has proven that allergies most often occur in children fed with standard infant/baby milk. Evaluation of the neuropsychological development of children born into families with a history of allergy up to 3 years of age has established that the use of formula (infant milk) compared to breastmilk are statistically significant factors for the overall neuropsychological development of boys.

*Contributions:* Dr. Marinova has made contributions which are both original and confirmatory in nature. For the first time in Bulgaria, an evaluation regarding how the type of milk feeding affects the growth, acute morbidity, the appearance of allergy and the neuropsychological development of children at risk for allergy was conducted.

*The synopsis* has been drawn up in accordance with the requirements and reflects fully and accurately the content of the dissertation, stating in detail the general results, conclusions and contributions of this scientific work.

Dr. Marinova has submitted 4 (four) publications and 7 (seven) scientific reports on the dissertation topic.

### **Conclusion**

The dissertation submitted for defence on a topic "Importance of breastfeeding for the health of high-risk children up to 3 years of age with family history of allergy." is consistent with the requirements of the Medical University of Varna. A scientific work has been developed, significant and essential for public health with vital theoretical and key applicable contributions. The topic is timely and relevant, the doctoral student's literary awareness is high, the general scope and tasks have been formulated clearly and competently. In this sense, due credit should also be given to the contribution of the scientific supervisor. The results obtained have provided a considerable amount of information – skilfully presented and interpreted, protected by statistics facts set out with an analytical approach. The drawn conclusions and recommendations are correct and comply with the results. The above-mentioned sets the ground for the doctoral candidate's scientific growth as an expert in this specific field of public health.

I, deeply convinced, give my *positive assessment* and invite the other members of the Honorable Scientific Jury to vote in favour of awarding the educational and scientific degree "Doctor" in the scientific specialty "Hygiene" to **Dr. Miglena Yordanova Marinova-Ashkar**.

10<sup>th</sup> May 2023

Respectfully:



(Assoc. Prof. Dr. Lalka Rangelova, PhD)