

## STATEMENT

**By Professor Juliana Krumova Marinova, MD, PhD**

Regarding the dissertation „**Integrative medicine – a holistic conceptual model, scientific and educational approaches**“

of Assoc. Professor Desislava Ivanova Vankova, MD, MPH, PhD

for the awarding of the scientific degree "Doctor of Science"

Scientific speciality: „**Social Medicine and Organization of Healthcare and Pharmacy**“,  
professional domain: **7.1 „Medicine**“, higher educational field: **7. Healthcare and Sport**

I present this opinion in my capacity as a member of the Scientific Jury, appointed by Order № P 109-285/11.07.2022 r. of the Rector of the Medical University “Prof. Dr. Paraskev Stoyanov”, Varna on the basis of a decision of the Faculty Council of the Medical University “Prof. Dr. Paraskev Stoyanov”, Varna (Protocol № 189/05.07.2022) for the dissertation assessment of the dissertation of Assoc. prof. Desislava Ivanova Vankova, MD, MPH, PhD for the awarding of the scientific degree "Doctor of Sciences". At the first meeting of the Scientific Jury (Protocol № 1/14.07.2022), I was appointed to present an opinion. The dissertation was discussed and proposed for defense by the Departmental Council of the Department of "Social Medicine and Organization of Health Care", Faculty of "Public Health" at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna.

**Short career profile:** Desislava Ivanova Vankova was born in 1968 in Burgas. She graduated with honors and a gold medal from the English Language School "Geo Milev", Burgas in 1989. She graduated as a "Master" in Medicine, Medical University of Varna (MU-Varna) in 1993. She began her professional career as a medical doctor in an Internal Department (1995-1996) - Municipal Hospital - Malko Tarnovo, Burgas region and successively: general practice (1995-1996) - at Avren Municipality, Varna region; epidemiologist (1997-2001) and social medicine coordinator (1996-1997) in the Hygiene and Epidemiological Inspection of Varna; key account manager at GlaxoSmithKline Bulgaria (2001-2015). She was engaged as a part-time assistant (1999-2003; 2015-2016) at the MU-Varna, and since 2016 she has been a senior assistant and currently an Associate professor (since 2018) at the Department of Social Medicine and Healthcare Organization, Medical University of Varna. In the postgraduate system of specialisation, she has a recognized specialty in "Social Medicine and Healthcare Organization" from MU-Varna since 2001. She has acquired educational and qualification degree "Master of Public Health" from Maastricht Universityq the Netherland in 1999. Dr Vankova has excellent knowledge in written and spoken English, very good knowledge of Russian and basic knowledge of French.

She holds an educational and scientific degree "Doctor of Philosophy (PhD)", in scientific specialty "Social medicine and organization of healthcare and pharmacy" since 2013, with a successfully defended dissertation: "Health-related Quality of Life" at MU - Varna. Assoc. prof. Dr. Desislava Vankova has numerous additional qualifications and realized participation in national and international research projects, including as a team leader, and in accordance with her scientific and clinical interests in the fields of public health and quality of life; health promotion and a healthy lifestyle; health technology assessment; complementary and alternative methods of therapy and teaching; scientometrics. Desislava Vankova participated in a series of training seminars and public health scientific events and projects in the field of integrative medicine, including: Introduction to Integrative Oncology, 2021, Your life and Cancer, 2020; in the seminar organised by the MEP

Interest Group on Integrative Medicine & Health in the European Parliament (EP) ‘Integrative Oncology’, 17.03.2021; in an workshop organised in the EP, 14.06.2022 - ‘Integrative Medicine and post COVID-19 syndrome’; participation in the international scientific project- representative for Bulgaria in JPIAMR “GIFTS-AMR” project and chair of the working group “Increasing the accessibility of (information of) T&CM medicinal products for infections”; Leader of a national scientific project financed by the "Nauka" Fund at the MU-Varna: „Scientific approaches to complementary and alternative medicine - concept, context, quality of life“. She is a certified teacher at the German Academy of Homeopathy and Naturopathy (DAHN) and to the German Homeopathic Union (DHU).

Over the years she has been teaching medical students (Bulgarian and English language courses), dental medicine students (Bulgarian and English language courses), midwives, nurses, optometrists, speech therapists. She is the supervisor of PhD students (two of whom have successfully defended their dissertations). She is a lecturer in the theoretical courses of the "Public Health" specialization.

**General description of the dissertation:** The dissertation contains 263 pages, structured in four main chapters, illustrated with 9 tables and 38 figures. There are 5 appendices. The bibliographic reference includes the impressive number of 714 sources, of which 92 are in Cyrillic and 622 in Latin.

**Relevance and significance of the topic of the dissertation:** The topic of the dissertation "**Integrative Medicine - Holistic Conceptual Model, Scientific and Educational Approaches**" is fully in line with the scientific interests of Assoc. prof. Vankova. She introduces us to the difficult, challenging, interdisciplinary field: **Integrative medicine as a new direction in modern healthcare** in an extremely original, fascinating way focusing on the answers of the questions: Why? How? Who? When? Where? What?. Research interest in integrative medicine reflects the growing societal and individual needs for holistic clinical, scientific, and educational approaches to health. The need for education in the field of integrative medicine has already been proven by numerous studies. Many developed countries around the world, such as the USA, Switzerland, Germany, France, offer postgraduate qualifications in integrative and complementary medicine or add disciplines to students' curricula. In Bulgaria, there are still no traditions in this field, therefore research in the direction of "integrative medicine - conceptual modeling, science and education" is challenging, relevant and would be socially significant.

**Chapter One. Literature review** is written by Assoc. prof. Vankova on 57 pages (25% of the dissertation), structured in four parts: 1. Key terms and definitions in integrative medicine; 2. Strategic documents, events, regulations related to the development of integrative medicine; 3. Scientific research in the field of integrative medicine. Current situation around the world and in Europe, modern approaches, concrete examples, facts, case studies; 4. Educational approaches in the field of integrative medicine. The World and North American Experience.

Integrative medicine is presented as a concept, practice and education in an international context. Because of its interdisciplinary and multifaceted nature, it is often used interchangeably with terms such as "holistic medicine," "individualized medicine," "complementary medicine," and others. The need for a clear definition of the research area in any scientific study is taken into account, which is why a synthesized review of key terms and definitions in integrative medicine is made. Strategic documents, events, legal acts related to the development of integrative medicine have been studied in detail and in a time continuum. I would underline Assoc. prof. Vankova's extraordinary ability to visualize the contemporary developments, presenting in a time-table the chronological continuum of

regulatory provisions, global strategies and events in the field of integrative medicine. The international political and scientific debate related to integrative medicine is a debate about the scientific validity of complementary and alternative medicine (CAM), which justifies the overview of the current development of scientific research, mainly in the field of CAM. The literature review of the dissertation ends with a presentation of the global educational approaches, which are presented in more detail in the third chapter, being systematized in the ten archetypes in Europe of the educational and research centers of integrative medicine and CAM. It is the result of a thorough research process and personal involvement of the author (participation in courses, congresses, teaching). Assoc. prof. Vankova emphasizes that the world and European experience is studied in order to be adapted and applied at a national level, with respect for the Bulgarian healing traditions and the existing standards in higher education. I accept the overview thus presented as a fundamental work, written with extreme precision, carrying the charge of a fascinating and inspiring read, expressing the exceptional competence of an erudite researcher and teacher, devoted to a particular cause. In general, thus structured in a complex interdisciplinary field, the literary review is a significant contribution to the Bulgarian scientific and educational medical literature.

**Chapter Two. Aim, objectives, design, methods and study organisation:** they are presented precisely on 10 pages of the dissertation work in three subheadings: 1. Aim and objectives of the study. Hypotheses. 2. Mix-methods design and organization of the study; 3. Material and methods of the overall study.

**The aim** is „*research of the concept of "integrative medicine" and its place in science and education in Bulgaria*". The research **objectives** are presented in 5 points, directly related to the achievement of the aim and clearly formulated: 1. Presentation and analysis of the historical and institutional development of the idea of integrative medicine; 2. Development of a short reference book with key terms and their definitions in the field of integrative medicine; 3. Creation of a holistic conceptual model of integrative medicine; 4. Educational needs-assessment of integrative medicine with two components: a) research of awareness, attitudes, behavior and interests (KAP study) of the students' and professionals' communities regarding CAM, health promotion and the concept of "integrative medicine"; b) Delphi study with an educational emphasis among experts in the field of higher medical education and healthcare; 5. Development of a conceptual educational model for achieving a profile of key (general) and functional (professional) competencies related to integrative medicine. The **main working hypothesis** of the own medico-social research is presented, that the current development of the innovative concept "integrative medicine" unites all possible science-based approaches (conventional, CAM, health promotion) to achieve optimal health and quality of life of the modern person . In this sense, 'integrative' is synonymous with 'holistic', 'harmonious', 'synergistic' rather than 'complementary and alternative'. Assoc. prof. Vankova presents six **working hypotheses** regarding the own quantitative and qualitative sociological studies, related to the educational needs-assessment in the field of CAM and integrative medicine through a study of knowledge, attitudes and practices (KAP study) of students, doctors and pharmacists.

**Mixed-methods design and study organisation:** An integrative exploratory sequential mixed-methods design is applied, which mixes alongside the sociological (quantitative and qualitative) instruments the methods of humanities, natural and engineering sciences. The study design fully corresponds to the research goals and objectives, presented in its **four phases**, described and justified in detail, with deep understanding and skilful visualization: first phase - research of the contemporary historical and institutional development of the integrative medicine and conceptual modelling (2019-2021); second phase – quantitative and qualitative study of educational needs among students and primary care professionals (2021-2022); third phase – Dynamic Delphi study (February – May 2022);

fourth phase – development of a conceptual educational model for achieving competencies related to integrative medicine and CAM (2021-2022).

**Material and methods of the overall study.** Assoc. prof. Vankova presents a complex research approach, taking into account all the characteristics of the environment. Using a sociological instruments, the awareness, attitudes, behaviours and needs of the students (of medicine and pharmacy,  $\geq 18$  years), and of general practitioners and pharmacists ( $\geq 18$  years) related to CAM are investigated; as well as awareness of integrative medicine. The information obtained through a direct individual online/paper survey leads to the delineation of a competences profile (key and professional competencies). Assoc. prof. Vankova describes in detail the **instruments** used in the research, fully developed according to the requirements of the Ethical Commission (KENI) at MU-Varna, respectively for the separate phases of the study, applied to the dissertation work. For the second phase of the study, as a result of a three-stage research process, **four instruments** (questionnaires) were developed aimed at the four target groups: general practitioners, medical students (with the possibility of dental medicine), pharmacists and assistant pharmacists, pharmacy students (with the possibility for assistant pharmacists as well) (Appendix 2). For the third phase – a dynamically adapted Delphi study (due to the pandemic situation conducted face-to-face or online as semi-structured interviews/questionnaires, once with each of the experts), the three steps for involving the participants (3 expert panels: political, institutional and teaching) are presented in detail; the instrumental toolkit – the Delphi-card and the final document – were generated sequentially (Appendix 4.). The **methods** are described in details: Systematic literature review, covering the second half of the XX<sup>th</sup> century to the present day, related to integrative medicine in fulfilment of the aim and objectives of the study; quantitative and qualitative (Delphi survey) sociological methods; statistical methods: descriptive and analytical; graphical method. The specialized software IBM SPSS Statistics, version 24, was used for the statistical processing of the primary information. In summary to this part of the dissertation work: I define it **as a good research practice model**.

**Chapter Three. A holistic conceptual model. Results of own research and discussion.** This part of the dissertation covers 68 pages, precisely arranged and illustrated, structured in four sections, sequentially for the research phases: **1.** Holistic conceptual model. Presentation and discussion; **2.** Historical roots and current state of integrative medicine in Bulgaria as part of the European educational and research space. Research, analysis and discussion; **3.** Results of own research. Discussions; **4.** Creation of a conceptual educational model for achieving key and functional competencies related to integrative medicine. The results and discussion sections fully correspond to the objectives set in the dissertation work. Each of the sections is extremely well structured, the results are thoroughly presented, discussed and summarized.

The holistic conceptual model is presented, illustrated and discussed in great depth in its 5 main building blocks of integrative medicine (1. Medical education and postgraduate training; 2. Conventional Western medicine; 3. Complementary and alternative medicine (CAM); 4. Scientific foundations, approaches and evidence (evidence-based medicine - history and innovations); 5. Health promotion and preventive medicine), the three characteristics of integrative medicine are defined (as a philosophy and cultural values; as a structure; as processes), the main organizing principles are presented (coherence; heterogeneity, equity, tolerance; efficiency and effectiveness). In connection with this part of the dissertation work, I should also emphasize the high value of the "Brief Terminological Guide to Integrative Medicine" developed by Associate professor Vankova, attached to the dissertation work (Appendix 1), structured on the basis of the 5 main building blocks of integrative medicine model. Assoc. Prof. Vankova presents the results of her own research in depth, with deep understanding and analysis. For the data analysis in fulfilment of the fourth objective of the dissertation (research of awareness, attitudes, behavior and interests of students and professional communities in relation to CAM and the concept of "integrative medicine") the four target groups indicated above are analysed as two main groups: a professional group of 185 people and a student

group of 208. The presentation and discussion of the results of the adapted Dynamic Delphi survey is filled with extreme precision, and a full picture of the whole process is also obtained from the content of Appendix 4 of the dissertation work. As a result of the proposals of the Delphi-experts, a generalized and enriched definition of integrative medicine is formulated - derived from the Delphi-opinions, acceptance/non-acceptance and analyzes of the definition proposed in the Delphi-card, which is a key result. It is a historical necessity arising from the dynamic modern development health care by upgrading the existing definition (Language Reference and Consultation Service at the Institute of the Bulgarian Language, BAS). The definition has been expanded due to the need to be meaningfully accessible to the wider civil, professional and patient communities. Regarding the fourth section: creating a conceptual educational model for the achievement of key and functional competencies related to integrative medicine, it can be summarized that the proposed educational model is a logical consequence of the results from the research, allowing to assess needs and formulate recommendations in the field of higher education related to KAM and integrative medicine. Regarding this section, Assoc. prof. Vankova emphasizes: "*Conscious qualification in the field of integrative medicine was a necessary condition.*" The presented universal competence profile related to integrative medicine (attached to the dissertation - Appendix 5) in two main parts - key/general and functional/related with the profession, competencies is also the result of long-term research work and a study of the global experience of programs (content and regulations) in CAM and integrative medicine in an institutional environment, an expression of the author's consistent professional development in the field through participation in a number of international and national initiatives, forums, trainings, projects. This part of the dissertation work deserves special attention and high evaluation for its adequate structuring, logical connection and consistency.

**Chapter Four. Conclusions, Recommendations and Contributions** covers 15 pages of the the dissertation. The conclusions are grouped according to the presented 5 study objectives. They are skilfully formulated and directly related to the research aim and objectives. As a result of the research and analysis of the survey data, Assoc. prof. Vankova presents **recommendations** for necessary actions in three overlapping and complementary areas: 1. At the national health policy and educational level; 2. At the level of development of science in the field of integrative medicine; 3. At the institutional educational level. **Contributions** are presented in two groups: **contributions of an original nature and contributions of a practical-applied nature**. Contributions of an original nature are reduced to 3: 1. For the first time in our country, the concept of "integrative medicine" is being researched as a holistic idea and a medico-social construct. For the first time, a holistic conceptual model has been created that enables the deeper study, development and application of integrative medicine and health care; 2. An original terminological reference book on integrative medicine has been developed, which can meet both research and educational needs; 3. For the first time in Bulgaria, universal educational models are being developed to serve as a basis for creating educational modules in integrative medicine and CAM. The contributions of a practical-applied nature are presented in 3 points: 1. The application of an integrative exploratory sequential mix-method design is an innovative approach in the field of research related to healthcare and education in our country. 2. The assessment of educational needs in the field of integrative medicine is being done for the first time in our country and could be an idea for monitoring the educational needs of students and health professionals. The presented study of awareness, attitudes, behaviours and interests of student and professional communities regarding CAM, health promotion and the concept of "integrative medicine" is the first such study in the field of higher medical education in Bulgaria. 3. The presented study provides an applied model for conducting a Delphi study, called Dynamic Delphi, because of the need to adapt in the conditions of social isolation.

In connection with the dissertation, Assoc. prof. Vankova presents: **10 full-text publications; 5 attendances** in scientific and educational forums; 2 participations in scientific projects – one international and one national.

Short dissertation: It is written in 99 pages, it is structured according to the requirements and reflects the main results achieved in the dissertation.

## CONCLUSION

The dissertation presented for assessment "**Integrative medicine - a holistic conceptual model, scientific and educational approaches**" is fundamental and innovative in a complex interdisciplinary field, written with extreme precision. Presenting the concept of Integrative Medicine in its entirety is a challenge that Assoc. Prof. Vankova has handled brilliantly. Such achievements are always result of many years of research work, they require qualifications and competences in various areas of socio-medical knowledge and practice, as well as personal dedication and conscientiousness, which Assoc. prof. Vankova demonstrated in the dissertation. Prof. Vankova presents her own empirical studies such as methodology, presentation of results, visualization, interpretation, analysis and synthesis in a way that I would define as a good research practice model/benchmark. The dissertation contains theoretical, methodological and applied results, which represent an original contribution to science and which I believe should be popularized among the academic community, among practitioners in the country's healthcare system, among managers in the healthcare system, as part of an advocacy strategy for the implementation of the recommendations formulated by Assoc. prof. Vankova in her dissertation. The work itself, as a whole, is of a contributing nature to the Bulgarian scientific and educational medical literature. It can be of significant benefit to the education of students and PhD students in various medical specialties.

The presented dissertation **meets all the requirements** of the Law for Development of the Academic Staff in the Republic of Bulgaria, the Rules for its implementation and the Rules of MU-Varna. The presented materials and dissertation results **fully correspond** to the specific requirements adopted in connection with the Regulations of the MU - Varna for the application of the Law for Development of the Academic Staff in the Republic of Bulgaria.

This gives me the reason to confidently give my **high overall positive assessment** of the conducted research, presented by the above-reviewed dissertation, short version of the dissertation, of the achieved results and contributions.

I **propose** to the honorable scientific jury to award the scientific degree "**Doctor of Sciences**" to **Assoc. Prof. Dr. Desislava Ivanova Vankova, MD, MPH, PhD**, in the scientific speciality: „Social medicine and the organization of healthcare and pharmacy“, professional domain: 7.1 „Medicine“, higher educational field: 7. Healthcare and Sport.

25.07.2022

Stara Zagora

  
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**Prof. Juliana Marinova, MD, PhD**