

## **STATEMENT**

by

**Assoc. Prof. Greta Velikova Koleva-Petkova, Ph.D.**

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**Angel Kanchev University of Ruse**

**Member of the Scientific Jury according to Order No. R-109-428, dated 04.12.2024 of the Rector of the Medical University “Prof. Dr. Paraskev Stoyanov” – Varna**

**Regarding** the dissertation titled: **Competencies and Roles of the Nurse as Part of the Interventional Cardiology Team** by Teodora Radeva Dimitrova, in the field of higher education, 7. Health and Sports, professional subfield 7.4. Public Health, within the scientific programme of Health Care Management, supervised by Prof. Sonya Koleva Toncheva, Ph.D., D.Sc.

### **Procedure data**

By Order No. 109-531, dated 02.12.2021 of the Rector of the Medical University of Varna (MU – Varna), **Teodora Radeva Dimitrova** was enrolled as a full-time doctoral student in the specialty of Health Care Management to obtain the educational and scientific degree of Doctor. All necessary documents have been submitted, including a Protocol No. R-109-231, dated 10.04.2023, for successfully passing the doctoral minimum exam and successfully passing a foreign language exam, according to Order No. R-100-443, dated 26.07.2022., Teodora Radeva was discharged from her enrollment status with the right to defend her dissertation by Order No.109-428, dated 04.12.2024 of the Rector of MU – Varna.

### **Biography and career progression**

Teodora Radeva Dimitrova graduated from the Semi-Higher Medical Institute of Shumen as a general practice nurse in 1997. She obtained a bachelor's degree in Social Pedagogy from the Ep. K. Preslavski University of Shumen, a master's degree in Health Care Management from the Medical University “Prof. Dr. Paraskev Stoyanov” Varna. In 2022, she obtained a specialty in Clinical Social Work.

Her career path as a nurse began in 1997 at the Emergency Medical Center of Shumen, later working in the ENT department at the Multi-profile Hospital for Active Treatment – Shumen AD. In 2013, she started working at the Madara Specialized Hospital for Active Treatment in Cardiology EAD, Shumen, as an interventional radiology (IR) nurse. In 2020, after a competition, she was appointed as a Lecturer at the Department of Health Care at the Shumen affiliate of Medical University “Prof. Dr. Paraskev Stoyanov”. She is a member of Bulgarian Association of Health Professionals, the Bulgarian Public Health Association, and the European Public Health Association.

### **Relevance of the subject**

The competencies and roles of nurses within interventional cardiology teams are highly relevant due to the rapid advancements in this field and the increasing demands on those working within it.

Interventional cardiology requires highly specialized knowledge and skills. Nurses play a central role in this field, actively participating in the preparation, execution, and post-procedure care of patients. This necessitates expanded competencies, including in-depth theoretical knowledge of cardiovascular anatomy and physiology, various angiographic procedures, potential complications, and practical skills for operating high-tech equipment and specific consumables. Implementing a Protocol for IR nurses would enhance confidence and professionalism, ultimately leading to better patient care and a more sustainable healthcare system.

Teodora Dimitrova's dissertation is 116 pages long and follows standard academic requirements. It includes an Introduction, a Literature Review on the relevance of the problem, Study Methodology, and Results and Discussion. A separate chapter presents the author's **Model of the Modern Interventional Radiology Nurse** and a **Protocol for the Roles of the Interventional Radiology Nurse**. The dissertation concludes with a summary of Conclusions, Contributions, and Proposals. It is richly illustrated with 61 figures, 19 tables, and 6 appendices. The bibliography contains 172 sources, with 46 in Cyrillic, 103 in Latin, and 14 internet addresses.

### **Literature review**

In the first chapter, which is 25 pages long, the author examines the significance of cardiovascular diseases, particularly myocardial infarction, as one of the leading causes of death and disability worldwide, primarily affecting people of working age. A separate section analyzes the emergence and development of cardiac catheterization from the early 20th century to the present, along with the evolution of interventional procedures and the continuous improvement of methods for restoring coronary perfusion. The study also explores the possibilities and requirements for the certification and specialization of nurses in interventional cardiology departments, as well as opportunities for continuing education in several countries. The literature analysis highlights the specific role of nurses in interventional cardiology and the need for professional training to ensure the provision of high-quality and safe patient care. The literature review underscores the depth of the problem's relevance and the author's ability to synthesize and analyze the selected scientific information.

### **Methodology**

In the second chapter of the dissertation, which is 14 pages long, the study methodology is presented. This includes the goal, objectives, research hypotheses, object and subject, scope and coordination of the study, stages, methods used, and research tools.

The goal of the dissertation research is clearly formulated. Eight objectives are outlined for its implementation, precisely reflecting the doctoral student's research work. Three working hypotheses are proposed. The coordination of the study is correctly and clearly presented, with the study stages visually displayed in tabular form. The study involved 196 participants, divided into three groups: patients, nurses, and experts from seven hospitals and six cities. To achieve the study goals, an author's toolkit was developed and described in detail in this chapter. A complex of methods was applied, including sociological (survey, documentary, in-depth interview, SWOT analysis), experimental (implementation of a Protocol for the Roles of the Interventional Radiology Nurse), and statistical (data processing with the statistical package IBM Statistics - SPSS for Windows, ver. 19 and MS Excel 2021).



**In the third chapter**, which is **40 pages long**, the results of the author's research are presented. The socio-demographic characteristics of the surveyed groups—patients, nurses, and experts—are described through a survey. The majority of the patient group consists of males, aged 51-60, with an average level of education. The nurses (n=35) have over 20 years of work experience, with 11 of them having experience in an interventional cardiology department. The experts (interventional cardiologists and senior nurses) also have significant professional experience.

There is a strong consensus on the need for preliminary training for nurses working in interventional cardiology departments, including real-world training with a mentor, additional theoretical preparation, and opportunities for maintaining and enhancing qualifications. The need for specialization and participation in training courses for nurses is also highlighted.

A key motivating factor for working in interventional cardiology departments is the positive work environment, teamwork, and the dynamic nature of the job. Effective training requires good concentration, responsibility, and discipline, with an adaptation period ranging from 3 to 12 months. As nurses work experience increases, so does the length of the adaptation period.

There is significant trust in nurses from patients, based on their competencies, professionalism, and empathy during procedures, which helps reduce stress and anxiety levels. Experts emphasize the necessary qualities of an IR nurse, including responsibility, discipline, communication skills, observance, stress resilience, and clinical reasoning.

Based on the comprehensive research, several groups of competencies for IR nurses are identified—clinical, technical, and communicative. The nurse's activities include various tasks and responsibilities, from patient preparation, during the procedure, post-procedure care, to administrative duties. Working in emergency settings, handling specific equipment in a sterile environment, and interprofessional collaboration are daily tasks, underscoring the need for thorough preliminary training.

Interestingly, nearly half of the respondents do not see the need for additional documentation reflecting the nurse's activities in the interventional cardiology department, expressing concerns about increased workload. However, there is a positive attitude among experts and nurses towards implementing a Protocol for the Roles of the Interventional Radiology Nurse.

**The fourth chapter** of the dissertation presents the author's theoretical **Model of the Modern Interventional Radiology Nurse**. Based on the SWOT analysis, several specific threats are identified. To prevent these, the necessary personal and professional qualities are precisely outlined, providing a stable foundation for the further professional development of the modern nurse and a comprehensive concept of how contemporary healthcare should integrate technology, human values, and teamwork.

The **Protocol for the Roles of the Interventional Radiology Nurse** developed by the author is extremely valuable. It provides essential information about the IR suite and the various roles the nurse performs during different procedures. Additionally, a **Selective Coronary Angiography (SCA) Activity Checklist** and **Standard Operating Procedures for Interventional Nursing**

**Activities during Cardiopulmonary Resuscitation** have been developed. The protocol was experimentally implemented in two angiography laboratories in two cities over three months.

Expert evaluations and assessments from nurses before and after the experiment registered a positive attitude towards the protocol's effectiveness, safety, and potential to improve work quality. The benefits for the adaptation and training of newly hired nurses and the reduction of errors and omissions are clearly demonstrated.

This dissertation research is characterized by originality and significant contributions. I accept the theoretical and practical **contributions outlined by the author, reflecting her scientific achievements.**

The doctoral candidate has made **several proposals and recommendations** based on the results, addressed to national institutions, professional organizations, and associations related to unresolved issues concerning the nurse's role, which I find appropriate and adequate.

**The abstract** is structured according to the chapters of the dissertation, accurately reproducing its content. It is developed within 52 pages and is sufficient to provide an understanding of the quality and content of the dissertation. A list of three scientific publications and participations related to the dissertation topic is presented.

#### **General impressions**

The dissertation and abstract are written in clear and scientifically accurate language. The doctoral candidate has delved deeply into the researched issues, demonstrating good scientific practice and the ability to correctly interpret and analyze her results and compare them with those of other authors.

I do not personally know the doctoral candidate Teodora Dimitrova. My impressions are based on the provided materials and the dissertation, and I believe she possesses focus, consistency, professionalism, and precision in her work.

#### **Conclusion**

The dissertation is presented in a complete and well-structured form. The research stands out for its originality and significant contribution to establishing the role and place of the nurse in the multidisciplinary interventional radiology team and the overall treatment process.

Based on the comprehensive evaluation of the provided documentation, I believe the doctoral candidate fully meets the requirements of the Law on Academic Staff Development in the Republic of Bulgaria, as well as the criteria and requirements of National Center for Information and Documentation and the Academic Staff Development Rulebook at the Medical University of Varna. All this gives me a solid basis to confidently **support** awarding Teodora Radeva Dimitrova the educational and scientific degree of Doctor in the scientific programme of Health Care Management.

**14.01.2025**

City of Ruse

**Reviewer:**

Assoc. Prof. **Greta Koleva, Ph.D.**

Заличено на основание чл. 5,  
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