

OPINION
of
Prof. Diana Krasteva Ivanova, DSc
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Subject: Dissertation defense of Ivanka Atanasova Stoyanova, full-time doctoral student on "*Management of Cardiac Care in Comorbid Patients with acute myocardial infarction*" to acquire a scientific degree "Doctor" in the field of higher education 7. Health care and sports, prof direction 7.4. Public Health and Doctoral Program in Health Care Management

By order No. P-109-475/18.12.2024 of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna on the basis of Protocol No. 236/11.12.2024 of the Faculty of Public Health at Medical University - Varna, I have been appointed as an external member of the Scientific Jury to prepare an opinion on the procedure for the acquiring of the educational and scientific degree "Doctor", candidate Ivanka Atanasova Stoyanova

This opinion has been prepared in accordance with the Academic Staff Development Act in the Republic of Bulgaria, the Regulations for the Implementation of the and the Regulations for the Development of Academic Staff at Medical University - Varna.

Brief details of the doctoral student's career development and qualifications

Ivanka Stoyanova was born on February 15.02.1989. In 2013 graduated from Medical University - Varna "Bachelor" specialty "Nurse". In 2015 obtained a Master's degree from the University of Varna with a specialty - Health Care Management. In the period 2021 – 2024 was enrolled as a full-time doctoral student majoring in Healthcare Management. In the period 2009-2013 works as a trainee nurse at Medical University - Varna. Since 2013 until 2021 works as a nurse in "Sveta Marina" UMBAL. Varna in "First Cardiology Clinic". From 2021 until now, she works as a Deputy Senior Nurse in "Sveta Marina" UMBAL. Varna in "First Cardiology Clinic".

General characteristics of the dissertation work

The dissertation work developed by Ivanka Atanasova Stoyanova has a volume and a form that meets the requirements of the Law on the Development of the Academic Staff and the Regulations for the Development of the Academic Staff of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna. It contains 240 standard pages, and is structured in five chapters: chapter one - literature review - relevance and theoretical foundations; chapter two - purpose, tasks, material and methodology of the study; chapter three – results and discussion; chapter four - Comorbid patients with AMI - challenges and opportunities in nursing practice; chapter five - conclusions, proposals and contributions.

The developed dissertation work is illustrated with 18 tables, 35 graphs and 8 appendices. 247 literary sources are cited.

The dissertation work was discussed and proposed for defense to the departmental council of the "Health Care" Department at the MU "Prof. Dr. Paraskev Stoyanov" - Varna on 05.12.2024

The relevance of the dissertation work is based on the ever-increasing number of patients with acute myocardial infarction and the multitude of concomitant diseases. This places high demands on the health care system and the importance of the role of nurses in managing the care of comorbid patients with AMI. Increased attention to the quality management of cardiac care for these patients is essential to improve therapeutic outcomes and reduce the risks of recurrent cardiac events. The development of adapted nursing interventions for patients with acute myocardial infarction would broaden the approach in managing the care of comorbid patients. A multidisciplinary approach that includes physicians, nurses, rehabilitators, and social workers is critical to providing comprehensive, high-quality care. Optimizing cardiac care to achieve the best clinical outcomes is an approach to increasing patient satisfaction and reducing the burden of cardiovascular disease on the health care system.

Evaluation of the literature review

Written on 59 pages, the review shows the good literature awareness of the doctoral student on the issues of cardiac care in comorbid patients with acute myocardial infarction.

The importance of cardiovascular diseases in the context of comorbidities, the main risk factors and mechanisms of AMI development are described in detail. Particular attention is paid to specific comorbid conditions, challenges in cardiac care in comorbid patients with acute myocardial infarction, and cardiac care in these patients. Modern medical practice increasingly considers comorbidity as a common phenomenon, which emphasizes the need for increased awareness and improvement of clinical guidelines for the treatment of patients with multiple comorbidities. Patients with AMI often have additional chronic diseases, known as comorbidities, which greatly complicate their treatment and recovery. About half of AMI patients have at least one additional chronic illness that greatly complicates their treatment and recovery after the accident. It is particularly important that different comorbid conditions can interact and amplify the pathological effects on the cardiovascular system. Cardiac care in these patients is a complex process that requires a multidisciplinary approach and careful planning of therapy. In modern medical practice, comorbidity is particularly significant, as it affects the clinical picture, treatment and prognosis of cardiac diseases. The presence of multiple comorbidities complicates both the diagnosis and the treatment of cardiac diseases. Patients with comorbidities have an increased risk of cardiovascular events, which is due to the mutual influence between the individual diseases. Nurses are actively involved in the care of patients with AMI, especially in the presence of comorbidities. These patients have specific needs related to the complex management of disease processes and increased risks of complications. Nursing care includes some basic roles and responsibilities that contribute to an easier and smoother transition through such conditions for the patient and the multidisciplinary team. The nurse needs to have skills in assessing the early signs of AMI. This requires active monitoring of the patient and regular assessment of his condition. The

evaluation is of extreme importance, since it is precisely this that provides guidelines for possible preventions.

The presented literary overview is thematically focused, logically built on serious sources. With its independent meaning, it is a very good basis for building an adequate methodology of one's own research. With the overview presented in this way, the doctoral student fulfills the scientific degree "Doctor" - to be able to use and analyze scientific literature and formulate research goals based on it.

Evaluation of the purpose, tasks, methodology and organization of the study

The purpose of the developed dissertation is to study and analyze the main nursing activities and their role in the management of cardiac care in comorbid patients with acute myocardial infarction, with the aim of developing effective approaches to improve the quality, coordination and individualization of nursing care, aimed at optimizing patient outcomes and prognosis. The goal is clearly and precisely defined, corresponding to the topic and content of the independent studies. To achieve the thus-formulated goal, the doctoral student has defined seven tasks that detail the steps for researching the problem.

- to make a theoretical analysis of Bulgarian and foreign databases on activities and care for comorbid patients with acute myocardial infarction.
- to study the demographic, social and medical characteristics of patients with AMI and concomitant diseases, in order to determine their specificity and health care needs.
- to investigate the lifestyle factors that influence the health status of patients with cardiovascular diseases.
- to identify and evaluate the main risk factors and clinical features that determine the severity and prognosis of the cardiac condition in comorbid patients with AMI.
- to analyze existing approaches and strategies for the treatment and care of comorbid patients with AMI in hospital and outpatient settings.
- to investigate the role of nursing assessment, interventions and monitoring on patients' quality of life and health outcomes.
- to prepare an integrated framework including key principles, methods and strategies for optimal management of cardiac care aimed at improving health outcomes and quality of life for patients.

Four hypotheses are presented that reflect the in-depth knowledge and practical experience of the doctoral student. They are designed taking into account the challenges in the management of cardiac care, as well as the need to optimize nursing activities aimed at improving the condition and prognosis of patients.

The subject of the present study is the role of nursing activities in the multidisciplinary team, their planning, coordination and impact on the effectiveness of treatment, the quality of care and the long-term prognosis of patients.

Depending on the subject of the research activity, the dissertation work includes two main components of scientific research: theoretical research and empirical research.

The object of the study are:

- Normative documents regulating the activities of nurses;
- Literary/electronic sources, on good practices, organization of nursing activities and care for comorbid patients with AMI;

- Cardiac care management processes - planning approaches and optimization of nursing activities; assessment of the quality and coordination of medical care;
- Nurses involved in the care of patients with AMI;
- Patients with AMI and concomitant diseases;
- The interaction between nurses, doctors and other specialists in organization and coordination of care for patients with comorbidity.

A systematic review of cardiac care management practices in comorbid AMI patients was applied to the theoretical study. Information was extracted based on formulated inclusion and exclusion criteria. An assessment of the quality of the sources was made based on: research methodology; presentation of results; applicability of conclusions.

For the empirical study, an in-depth interview data collection method was applied to obtain detailed and in-depth data on the personal experiences, attitudes, perceptions and opinions of comorbid AMI patients. Patients were selected through purposive selection sampling, ensuring diversity in terms of age, gender, socio-economic status and type of comorbidities. This allows for a deeper understanding of the individual experiences of patients and their perceptions of the treatment and care they receive.

The participants in the current study are 30 selected on a voluntary basis, according to previously formed criteria.

Also included are 223 medical specialists from the cities of Varna, Shumen, Dobrich, Burgas, Ruse and Silistra, divided into two groups - 125 nurses, senior and head nurses, as well as specialists from the Angiography sector, providing activities and care in intensive cardiology units, where comorbid patients with AMI are hospitalized and 98 doctors conducting cardiology treatment for comorbid patients in intensive cardiology units, some of whom are also specialists in the Angiography sector.

The interviews were conducted from April 2023 to December 2023.

Research methods:

Sociological methods - In-depth interview; Focus groups; Observation; Survey method.

Statistical methods – Descriptive statistics; Correlation analysis; Regression analysis; Analysis of variance.

Evaluation of results and contributions

The results are presented and discussed according to the investigated sites. As a general characteristic of the presentation of the results, it should be noted the precision in the application of the methods, skillful search for cause-and-effect relationships, continuity between literature data / good practices, set research goals and tasks and proving or rejecting the research hypotheses. The results are presented in excellently designed figures and tables, and logical scientific thought is evident in their discussion.

A multidisciplinary approach and team coordination reduces the risk of recurrent cardiac events and improves clinical outcomes in comorbid patients with acute myocardial infarction. The lack of clear rules for communication between medical professionals makes it difficult to provide quality care, and the introduction of the Care Checklist will help to optimize the clinical process, reducing gaps in the provision of nursing interventions. The comorbidities present in patients with acute myocardial infarction require individualized management algorithms. The introduction of standardized protocols for the management of

AMI in comorbid patients definitely reduces documentation time and improves coordination of care. Nurses with years of experience show better adaptation to the dynamic environment in cardiology. Specialized training in the management of comorbid patients increases the competence of nurses in the interpretation of diagnostic data.

Formulated conclusions are presented synthetically, based on the analyzed data and results.

The contributions of the dissertation work are theoretical-cognitive and applied-practical in nature.

The submitted abstract reflects the essential elements of the study and meets the technical requirements.

One article on the topic of the dissertation is presented.

Conclusion:

The dissertation work of Ivanka Atanasova Stoyanova is up-to-date, in-depth and represents a scientific product of high value, innovative in design and character, executed according to modern rules, providing rich new information, with significant theoretical-cognitive and applied-practical contributions. It fully meets the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for its Application, as well as the Regulations on the Development of the Academic Staff at the Medical University - Varna. The personal involvement of the doctoral student is indisputable, which proves her preparation and ability to carry out quality research work. The results of the dissertation have a multi-layered nature and contain potential and ideas for future research and multi-functional applications.

In conclusion, I give a positive assessment of the presented dissertation work, and convincingly recommend the members of the Scientific Jury to award the award the degree of Doctor to Ivanka Atanasova Stoyanova in the field of higher education 7. Health care and sports, professional direction 7.4. Public Health and Doctoral Program in Health Care Management.

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