

THESIS REVIEW/ STATEMENT

By Assoc. Prof. Nevyana Georgieva Feschieva, MD

on the dissertation paper of Maria Mladenova Georgieva

**on the topic: PHYSICAL WELL-BEING AND PSYCHOLOGICAL
SUPPORT FOR PATIENTS WITH HEART FAILURE**

Scientific supervisor:

Prof. Silvia Borisova, Dr.P.H.

Scientific Advisor:

Prof. Yoto Yotov, MD

for the award of the educational and scientific degree "**Doctor**"

field of higher education: 7. Healthcare and Sport

professional field : 7.4. Public Health

specialty "Health Care Management"

By Order No. P 109-38/ 25.01.2023 of the Rector of MU - Varna, prof. Valentin Ignatov, M.D. based on the report No. 102-101/13.01.2023 from prof. Sylvia Borisova Dimitrova, Dr.P.H., and on the basis of the decision of the Faculty Council of Public Health of MU-Varna on protocol No. 199/18.01.2023 by prof. Antonia Dimova-Yordanova, M.D., dean of the Faculty of Public Health at MU-Varna with No. 104-49/13.01.2023, I have been also appointed as an external member of the Scientific Jury to present a thesis preview/statement of the dissertation paper on the topic: "Physical Well-being and Psychological Support in Patients with Heart Failure" for the acquisition of educational and scientific degree "Doctor" in the scientific specialty "Health Care Management", professional field 7.4. Public Health and field of higher education 7. Health and Sport.

Brief information about the PhD student - biography and career development

Maria Mladenova Georgieva was born on 23.03.1985 in the town of Lukovit. In 2008 she graduated from Medical University "Prof. Dr. Paraskev Stoyanov" - Varna, Bachelor degree, specialty "Nurse". In the period 2008-2010 she obtained a Master's degree in "Health Care Management" at MU-Varna. Her teaching career started in 09.2017 as a guest lecturer /practical training/ at the Department of Health Care, Faculty of Public Health at MU-Varna, in the specialty "Nurse". In 2019, she was enrolled as a full-time PhD student at the same department. She has worked on two research projects, including an Erasmus programme, in which she carried out mobility at a Heart failure clinic in Wroclaw, Poland, recognised as a base for specialisation of heart failure nurses.

The beginning of her professional career as a nurse was in 2009 at the Lukovit Hospital, and continued at the University Hospital "St. Marina" Varna -II-nd Clinic of Cardiology - non-invasive from 2011 till now. Since January 2017 she is a senior nurse of the same clinic.

General characteristics of the dissertation

The dissertation presented by Maria Georgieva contains 195 pages and includes 10 tables, 36 figures, 2 diagrams and 7 appendices. The bibliographic reference contains 208 references, of which 31 are in Cyrillic and 177 - in Latin,

The paper is structured in the following main sections: Introduction, Chapter I - Literature review - 46 pages.; Chapter II - Objectives, tasks, material and methodology of the study - 14 pages.; Chapter III - Results and discussion - 47 pages.; Chapter - IV Management of heart failure - a challenge in nursing practice - 20 pages.; Chapter - V Conclusions, Suggestions, Contributions - 4 pages. Bibliography Appendices

The relevance of the chosen topic is determined first of all by the persistent global trend, especially relevant in our country, cardiovascular diseases to be the leading cause of death. Increased human life expectancy, or population ageing, has brought heart failure (the last stage of a preceding cardiovascular disease) characterized by high levels of mortality, disability and morbidity, as an important problem of public health and everyday medical practice. The search for adequate models for effective management of this progressive socially significant disease is becoming current topic. Against the background of a current and expectedly growing staffing crisis in health care service, theoretical and practical questions are raised about the possibility of developing specialized cardiac nursing care to favorably influence the prognosis of heart failure, improve the quality of life of affected patients, and reduce their rehospitalizations.. The application in a number of European countries of models of collaborative care with a high involvement of a qualified nurse in heart failure clinics has yielded encouraging results, which, however, are poorly known in Bulgaria. The dissertation's

focus on this topic is up to date and promising both in terms of practical solutions for dealing with specific and similar chronic socially significant diseases, and the development-theoretically and clinically- of graduate nurses and their opportunities for specialization and certification.

In the **introduction** of the dissertation the PhD student justifies the importance of the research problem.

Assessment of the literature review

Developed on the latest research, it presents a up to date approach/ view of heart failure (HF). The definitions of HF, epidemiology, and rehospitalizations as a measure of the status of affected patients are covered in particular detail; Attention is paid to young patients, quality of life, manifestations of depressive experiences and anxiety and the possibilities for their exploration. Evidence is presented for the significant prevalence of HF in Bulgaria, as well as for the increasing economic burden of the disease. Completely new to our scientific literature is the presentation of international experience on the implementation of outpatient cardiac care, including standardized patient follow-up and education, continuous titration of medications, linkages/relations with nurses, and support for self-monitoring are important considerations to be included in the outpatient follow-up and care of patients with HF, especially important in the period immediately following hospitalization.

The literature review is distinguished by its exceptional modernity and relevance, clarity, rich informativeness, focus on important, little studied, and in Bulgaria - unexplored issues. They have rightly been reflected in the target setting and methodology of the dissertation paper.

Assessment of objectives, tasks and methodology.

The aim of the presented dissertation is: **To improve the well-being and quality of life of patients with heart failure (HF) by implementing an Ambulatory Nursing Care Model.**

Nine tasks have been planned to meet the objective, covering the study of a range of issues related to the topic: Epidemiology of heart failure (HF), international experience of nursing care and management of HF, factors favouring HF progression, biological and psychosocial determinants of quality of life in patients with HF, monitoring the functional capacity of patients with HF; objectification of their health status through the study of the biomarker NTproBNP, assessment of psychological status and tendency to depression and anxiety through psychological support in the short and long term, analysis of the results of the implemented complex care for patients with HF, through the evaluation of rehospitalizations.

As a last task, the development of a model for the implementation of ambulatory nursing care in priority areas for activities in patients with HF is set.

Three working hypotheses are formulated. The subject and objects of the study are precisely defined. The clinical contingent included a total of 72 patients with HF, functional class II-IV according to NYHA, who were treated in the Second Clinic of Cardiology, Department of Non-invasive Cardiology, University Hospital "St. Marina" Varna.

The study design is very well conceived and described in details. It includes two studies - prospective and empirical. **The prospective** one aims to follow up each of the 72 patients for a period of 6 months in terms of:

- Adverse cardiovascular event - rehospitalization for decompensated chronic heart failure, hospitalization for cardiovascular disease or other hospitalization, as well as mortality;
- Physical, psychological status and quality of life, where the data were analyzed and compared for the period from discharge of the patient to the end of the 6-month follow-up (February-September 2022);
- Objectification of improved health status by laboratory testing of electrolytes and the biomarker NTproBNP;
- Instrumental examinations - electrocardiography and ultrasound evaluation to establish the cardiac function.

Participants were conditionally divided into two groups depending on the observation leader. **Group A** had a nurse as the main organizer of the observation – the nurse is responsible for selection of patients, contact with them and their relatives; the nurse organizes consultation with a cardiologist; performs/organizes anthropometric, hemodynamic, laboratory and all other tests planned for the follow-up, education of patients and their relatives, assists the patient in completing questionnaires on quality of life, depression and anxiety; with the help of a physician the nurse determines the functional class of heart failure; at the end of the 6-month follow-up, analyzes the results with the patient and those around him with the help of a cardiologist. **In group B**, the cardiologist is the main factor and organizer, and the nurse has a supportive function

The empirical study identified the impact of outpatient nursing care on the implementation of the treatment plan by comparing the information on the condition of patients in group A and group B, i.e. the use of the globally recognised and used in many countries Heart Failure Patient Monitoring Card (by Professor Martin Cowie, UK) enables the unification of patient care worldwide and comparability of outcomes. The developed **study organization algorithm** includes three sets of follow-up activities and their deadlines in the 6-month follow-

up. **The methods** applied in the study are quite numerous, follow the logic of the set tasks and are entirely adequate to modern scientific requirements. Along with the usual documentary, questionnaire, clinical examination, ECG, there are also electrocardiographic evaluation, laboratory methods, (biochemical tests for creatinine, sodium, potassium and chlorine), NT-proBNP monitoring, functional capacity assessment by 6-minute walk test (6MWT); Quality of life assessment using a disease-specific self-assessment questionnaire (Kansas City), a non-disease-specific health status questionnaire and a visual analogue self-assessment scale, assessment for depressive mood and anxiety. There is a surprisingly wide range of methods applied to medical-statistical data processing: statistical estimation - point and interval estimates, variational, non-parametric, correlative and linear regression analysis. The fact that all of them have been applied in the dissertation and in the most appropriate way, which strengthens the validity of the obtained results, deserves a highly positive evaluation.

The developed study methodology represents a model for the design of an in-depth clinical-epidemiological study that goes beyond the objectives of a PhD thesis. The consultancy role of Prof. Yoto Yotov is a guarantee of the quality of the methodology, but one could also consider steps to protect the intellectual property both in this part and in the Model proposed at the end of the thesis.

Evaluation of results, conclusions and contributions:

The results are substantial and arise from the execution of each of the set tasks. Of particular note are the results presented in Chapter IV, "Heart Failure Management - A Challenge in Nursing Practice". The positive effect of the ambulatory nursing care model in symptom management in patients with heart failure is established. The application of the Model improved the quality of life of these patients (0.71 on the EQ-5D scale), strongly reduced the signs of depression and anxiety, improved physical capacity, confirmed by the positive results of NT-proBNP and 6-minute walk test. Cardiac nursing care reduces the risk of rehospitalization or subsequent rehospitalization of heart failure patients. The hypothesis that ambulatory nursing care (ANC) helps to preserve, improve, and restore health, thereby enhancing the well-being and satisfaction of patients with heart failure, has been confirmed. Positive outcomes were seen in terms of renal function, improvement in NT-proBNP marker, adherence to diet and physical activity

"Guidelines for the Care of Patients with Heart Failure" have been developed and apply to all stages of cardiac nursing care. They can be used to optimize the role of health

professionals who work with cardiac patients, but can also be a good example in university nursing education.

The dissertation represents an example of successful collaboration between the Department of Health Care and the Second Cardiology Non-Invasive Clinic, which could be developed and MU-Varna could become the first place for training/certification of heart failure nurses.

Based on the results, specific proposals were made to the MoH, Medical Universities and medical institutions.

The dissertation "Physical Well-being and Psychological Support in Patients with Heart Failure" was developed and executed in accordance with all the requirements of the Law for the development of the academic staff in the Republic of Bulgaria and the Regulations for Academic Staff Development of MU - Varna with the great personal participation of the PhD student in the field work. There are theoretical-cognitive and practical-applied contributions, including:

- ✓ the management of cardiac care has been studied and analysed for the first time
- ✓ marked the beginning of theoretical and clinical nursing in cardiology practice
- ✓ presented data on the physical status of patients with HF;
- ✓ for the first time is developed a model of organization for nursing cardiac care in outpatient settings
- ✓ the first time in Bulgaria a cabinet /office is set for follow-up of patients with HF, led by a nurse ;
- ✓ developed and implemented in practice is a first-of-its-kind comprehensive and targeted cardiology model of care for patients with HF in the outpatient setting;
- ✓ outlines the role and importance of the heart failure nurse as a key role in a multidisciplinary team, paving the way for her certification as a specialist
- ✓ developed appropriate nursing documentation for working with a patient with HF.

The author's abstract reflects all essential aspects of the dissertation. Four full-text publications in reputable journals and three participations in scientific forums with subsequent printing have been made in connection with the dissertation paper.

Conclusion

In connection with all the above, I give high appraisal to the dissertation paper "Physical Well-being and Psychological Support in Patients with Heart Failure" by Maria Mladenova

Georgieva, and I confidently propose her to be awarded with scientific degree "**Doctor**" in the scientific specialty "Health Care Management", professional field 7.4. Public Health and field of higher education 7. Health Care and Sport and I appeal to the members of the esteemed Scientific Jury to support such a decision.

03.04.2023г.

The review is prepared by:
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