

REVIEW OF A DOCTORAL THESIS

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Technologies**

Member of the Scientific Jury pursuant to Order No. P-109-351/18.07.2023 of

Prof. Svetoslav Georgiev, MD, PhD –

Rector of MU "Prof. Dr. Paraskev Stoyanov" – Varna.

**I have been appointed to submit a Review as stated in the Minutes Summary
No.1/06.08.2023 of the Scientific Jury.**

REGARDING the doctoral thesis on: NURSING APPROACH IN PATIENTS WITH OBSTRUCTIVE SLEEP APNOEA – ASSESSMENT OF PHYSIOLOGICAL CHANGES AND BENEFICIAL CONSEQUENCES, by Stoyanka Hristova Yancheva, a full-time doctoral student in the Healthcare Management doctoral program, 7. Healthcare and Sports – higher education area, 7.4. Public Health – professional field; Faculty of Public Health, Medical University – Varna.

Research supervisors:

1. **Assoc. Prof. Mariana Nikolova Dimitrova, PhD**
2. **Prof. Mario Petrov Milkov, DM, PhD**

1. Outline of the procedure and brief biographical and career profile of the doctoral student

Stoyanka Hristova Yancheva was enrolled as a full-time PhD student at the Department of Department of Nursing Care, Faculty of Public Health, MU-Varna, by Order №P-109-506/04.11.2020 of Prof. Valentin Ignatov, MD, PhD, and Rector of the MU-Varna, for awarding the educational and scientific degree “Philosophy Doctor” in Healthcare Management, professional field 7.4. Public Health. The study period was three years, starting from 06.11.2020.

The documentation includes a Protocol for Foreign Language Examination and a Protocol for PhD Minimum Examination.

Stoyanka Hristova Yancheva was authorised to defend her PhD thesis in front of a scientific jury, and the members of the Scientific Jury were appointed by Order No. P-109-351/18.07.2023 of Prof. Svetoslav Georgiev, MD, PhD – Rector of MU "Prof. Dr. Paraskev Stoyanov" – Varna. The Rector's order was based on Report No. 102-1489/19.06.2023 by Prof. Sylvia Borisova, PhD,

Head of the Department of Nursing Care, and pursuant to the Minutes Summary No. 208/07.07.2023 of the Faculty Council, and Report No. 104-710/12.07.2023 by Prof. Antonia Slavcheva Dimova-Yordanova, PhD, Dean of the Faculty of Public Health.

The submitted set of documents (in print and electronic formats) is in compliance with the Rules and Regulations for Academic Staff Development, Article 69, of MU "Prof. Dr. P. Stoyanov" – Varna as of 2022 and includes all requisite documents.

Stoyanka Yancheva was born in 1966 in Devnya. In 1987, she graduated as a nurse from the Dr. Nencho Nikolaev Institute, providing training for health personnel with secondary school diplomas. In 1994, she graduated her post-secondary education in medical studies. Subsequently, she attained her Bachelor's (2001) and Master's (2018) degrees in Healthcare Management at the Medical University – Pleven. In 2017, she became a lecturer of students in the speciality "Nurse" at MU-Varna. Since 2019, Mrs. Yancheva has been an assistant professor at the Department of Nursing Care at the Faculty of Public Health, MU-Varna. In 2020, Stoyanka Yancheva was enrolled as a full-time PhD student at the Department of Healthcare Management at the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna.

The clinical experience of the doctoral student is impressive. From 1987 to 2020, Assist. Prof. Yancheva worked as a nurse in the Clinic of Pneumology and Phthiology at St. Marina University Hospital – Varna. Her extensive professional background (more than 30 years) with patients with respiratory disorders gives the impetus for selecting the research problem. Since 2021, Yancheva has worked as a nurse at the Second Psychiatric Clinic, St. Marina University Hospital – Varna. The continuous clinical experience of the doctoral student is defining and valuable both for her daily teaching activity and research interests.

The teaching activity of Assist. Prof. Yancheva is with students of the speciality "Nurse" in the disciplines of Philosophy and Introduction to Nursing, Nursing care of patients with somatic diseases, Nursing care of patients with oncological diseases, and Nursing care of mentally ill patients. She is actively involved in the clinical practice and pre-graduation internships of students of the same speciality. Enhancing students' professional competencies using standard and contextualised learning activities based on her long clinical experience are key traits defining the applicant's work with future healthcare professionals.

Stoyanka Yancheva is a member of the Bulgarian Association of Healthcare Professionals, the Bulgarian Public Health Association, the Bulgarian Scientific Society of Public Health, the European Public Health Association (EUPHA) and the Bulgarian Psychiatric Association.

She has presented reports at nine scientific conferences. She is a member of the research teams of two national projects. She has attended postgraduate courses.

The doctoral student speaks Russian and English.

The long-term commitment of Assist. Prof. Yancheva in the treatment process of patients with breathing disorders, as well as her paramount interest in the innovations in nursing practice, have determined the selection of the thesis subject.

2. Overview of the thesis and its relevance

Relevance of the topic

The proposed topic by Assist. Prof. Yancheva is of considerable relevance. Obstructive sleep apnoea is a significant medical and social problem worldwide. In recent years, one of the challenges for those involved in the treatment process is the continuous optimisation of special care for patients with chronic diseases such as obstructive sleep apnoea (OSA). According to a number of studies by professional and scientific organisations, breathing disorders during sleep have a much higher incidence than actually recorded.

For this reason, the problem is underestimated by both patients and healthcare providers and is not a priority in the prophylaxis and prevention of chronic diseases. These facts result in financial, informational and educational shortfalls on a national scale. The consequences of sleep-disordered breathing are impaired quality and length of life among diagnosed individuals and cardiovascular, cognitive and metabolic disorders. A grave challenge for nurses – the professionals actively involved in all stages of the treatment process for these patients, is the continuous improvement of specialised healthcare.

The considerable importance of the problem calls for further investigation and seeking alternatives to optimise the care of these patients.

Thesis structure

The present thesis is a classically structured research and includes the following sections: Literature Review; Methodology and Organization of the Study; Results and Discussion; Optimising healthcare for OSA patients; and Conclusions and Contributions. It is written on 211 standard pages (of which 25 pages are appendices). It is illustrated with 10 tables, 95 figures and 4 appendices. The thesis submitted for review includes a sufficient and accurate bibliography, represented by 269 sources, 68 of them in Bulgarian and 201 in Latin.

3. Evaluation of the structural parts of the thesis

Literature review, awareness of the issue

Mrs. Yancheva has a comprehensive knowledge of the issue. She made a deep analysis and creatively evaluates the available literature. In the **literature review**, the doctoral student exhibits

proficiency in relation to the historical development of obstructive sleep apnoea in the USA, Europe, and Bulgaria. The review is logically structured into six main parts. The focus is on the current aspects of diagnosis, treatment and follow-up, the profile of the somnological patient, the relevance of somnological care to contemporary nursing practice, and the medical, financial and social dimensions of Obstructive Sleep Apnoea (OSA) syndrome. Current best practices of sleep medicine nursing specialists and nursing are presented, demonstrating the significant role of a trained and competent nurse committed to effectively managing OSA patients.

The literature review concludes with a summary of the challenges facing the nursing team caring for the somnological patient. In Bulgaria, the patients themselves pay for the diagnosis and treatment due to the lack of a clinical pathway. The PhD student defines "the lack of a clear long-term strategy for the control and follow-up of patients with OSA syndrome" as a critical concern of the healthcare system in our country.

The importance of various telehealth and telemedicine technologies for continuity of care for patients living in remote areas is emphasised and impressive. The possibility of using telemedicine and telehealth for OSA patients is an objective prerequisite for applying a holistic approach to the care of these patients by optimising coordination and communication between specialists.

The review is composed in an academically appropriate style. In terms of volume, the literature review is proportionate to the overall thesis. The references are cited fully and accurately. Most of them are from the last decade.

Research Methodology

The thesis **aims** to investigate and evaluate the healthcare organisation for individuals with obstructive sleep apnoea, to define the nurse's place in the stages of the somnological process and, on this basis, to suggest approaches to patient care optimisation.

Seven tasks have been completed for this thesis. They are logical and accurately defined to achieve the aim.

Four working hypotheses relevant to the aim and objectives of the research were outlined.

The study is a complex medical and social survey using sociological methods (survey method and interview) and various statistical methods to describe and analyse the collected data. A theoretical study was carried out employing a descriptive review to identify trends in the diagnosis and treatment of OSA patients worldwide and nationally. A quantitative study involved 250 individuals, including 80 patients, 140 nurses and 30 physicians working in specialised medical institutions where OSA patients were diagnosed and treated. Eight hospitals and five pre-

hospital facilities in Bulgaria were covered. The study was conducted during the period June 2022 – December 2022.

The research was approved by the Research Ethics Committee (REC) of MU-Varna (Protocol No. 116/28.04.2022).

The chosen research methodology contributes to accomplishing the predefined aim and acquiring an adequate response to the assignments addressed in the thesis.

The methodology meets all the requirements for a rigorous scientific study with a wide range of sources. It demonstrates the author's thorough knowledge of contemporary methodological approaches in the field of social and medical research. Appropriate research *methods* have been selected. Their precise application is described in detail.

The results are presented clearly, well-structured and in a logical sequence corresponding to the seven tasks of the study. Although worldwide experience proves the effectiveness of outpatient care for patients with OSA, the nurses included in the study still need to identify home care as an alternative to improve the quality of life of these patients. The importance of autonomous nursing practices for the overall healing process of patients with OSA has been demonstrated. More than half of the surveyed healthcare providers (81.4% of nurses and 60% of physicians) and 90% of the patients believed that involving specialised nursing practices in providing care for these patients would improve the quality of services. Respondents unanimously prioritised patient education as an important activity for these practices.

Noteworthy are the results of the in-depth interview with ten OSA patients treated with PAP (positive airway pressure) and followed up over time. Conclusions drawn from the interviews highlighted significant problems such as lack of awareness and neglect of OSA syndrome by medical professionals, lack of sufficiently well-trained staff on sleep problems, lack of constant supervision by a nurse during night-time testing for OSA, lack of financial support from the state for diagnosis and treatment of OSA. The latter is the main reason for individuals not seeking help for sleep problems. Among the rest of the conclusions are the lack of adequate patient training in each stage of the treatment process, the lack of alternatives for patients who do not tolerate PAP therapy due to serious consequences on the respondents' physical and mental health, and the perceived need for psychological support.

A particularly valuable part of the thesis is the idea of organising and conducting a pilot project. The research team proposes a temporary pilot project to be conducted. Based on consensus between interested parties, conducting a temporary pilot project "Organisation of diagnosis, treatment and follow-up of patients with OSA". This kind of project could evolve into a "Model for diagnosis and treatment of patients with OSA". Implementing such a project and the

corresponding specialised documentation, such as evaluation form “*Nursing assessment patient's condition during specialised sleep examinations*”, will bring us closer to the best nursing practices successfully applied worldwide. Establishing and developing such practices in specialised sleep care and the application of Health Assessment in Nursing is an innovative approach to nursing practice in our country.

The 15 conclusions in the thesis are based on the main parts of the research – theoretical part, quantitative and qualitative research. The conclusions are relevant to the set tasks.

Overall assessment of the thesis and its contributions

I fully acknowledge the contributions of cognitive-theoretical and practical-applied nature indicated by the doctoral candidate. The thesis is an impressive, thorough study of a relevant problem – the healthcare organisation for individuals with obstructive sleep apnoea (OSA) prioritising the needs of these patients. Assist. Prof. Yancheva has made a comprehensive analysis of the available literature on the issue, including the regulatory framework in the Republic of Bulgaria. The nature and significance of obstructive sleep apnoea are discussed in detail. The cited data from studies largely reveals the social consequences, namely that the disease affects primarily working-age people.

A merit of the paper is the presentation of NGOs globally and nationally that are at the heart of developing modern methods for diagnosing, treating and the follow-up of patients with OSA syndrome. The application of unified sleep assessment scales such as the Epworth Sleepiness Scale, obstructive sleep apnoea risk assessment questionnaires, the Second International Classification of Sleep Disorders (ICSD-2) and others, are tools leading to the application of an individual approach to each patient and the improvement of the organisation of general and special care for these patients.

In her research, Assist. Prof. Stoyanka Yancheva demonstrated skills in conducting a scientific study, teamwork and ethical relationships with all participants in the study. The doctoral student's proficiency in conducting in-depth interviews is worthy of admiration.

This study presents interesting and novel insights into a current public health issue. It creates a groundwork for a number of general conclusions, mainly related to changes in public attitudes and health policy regarding the specialised care needs of patients with OSA and the nurse's role in providing this care.

The thesis summary correctly reflects the structure of the thesis and contains the most significant results and conclusions.

Three thesis-related publications are referenced and included in the proceedings of the Varna Medical Forum held in 2021 and 2022. In all publications, the PhD student is the first author.

Personal impressions about the candidate

My acquaintance with Assist. Prof. Stoyanka Yancheva goes back to 2001 when she was a student at the Faculty of Public Health at MU-Pleven, majoring in Healthcare Management, for her Bachelor's and Master's degrees. Throughout her studies, the doctoral student demonstrated incredible cognitive interest, emotional intelligence and ability to analyse the problems of patients with respiratory disorders and the importance and specificity of the nurses' work caring for these patients. During her studies for a master's degree, Stoyanka Yancheva broadened her professional involvement by exploring current topics in basic healthcare education. As a lecturer in nursing, Stoyanka Yancheva is actively involved in teaching and research and has participated in several scientific conferences and forums.

CONCLUSION


The thesis stands out for its pertinence, originality, methodological novelty and accuracy. The doctoral candidate's successful organisation and execution of research are indicative of her commendable research skills.

The thesis contains scientific and applied results, which represent an original contribution to science and meet all the requirements of the Development of the Academic Staff in the Republic of Bulgaria Act (DASRBA), its implementation rules, and the relevant Rules and Regulations of MU-Varna for academic staff development. The submitted documentation and thesis results fully comply with the specific requirements of the Rules and Regulations of MU-Varna for applying the DASRBA Act.

The thesis demonstrates that the doctoral student Stoyanka Hristova Yancheva has in-depth theoretical knowledge and proficiency in the field of Healthcare Management, thereby exhibiting the ability and skills for independent scientific research.

In view of the above, I confidently give my positive assessment of the research presented by the above-reviewed thesis, thesis summary and the results and contributions achieved. I recommend to the esteemed members of the Scientific Jury to vote positively for awarding the educational and scientific degree "Doctor" in the specialty "Management of Healthcare" to Stoyanka Hristova Yancheva.

28/08/2023

Review prepared by: 
(Prof. M. Draganova, RN, PhD)