

REVIEW OF A DOCTORAL THESIS

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Member of the Scientific Jury by Order No. P-109-548/06.12.2023 of Prof. Dr. Svetoslav Georgiev, MD, PhD - Rector of Medical University "Prof. Dr. Paraskev Stoyanov", Varna, Bulgaria and by Protocol №1/13.12.2023 of the meeting of the Scientific Jury, appointed for the preparation of the Review

ABOUT: defense of dissertation thesis entitled: **Electronic system for management of obstetric care in outpatient care**, by *Inna Stoyanova Nenova*, a full-time doctoral student in the Health Care Management” doctoral program, field of higher education 7. Health and Sport, professional field 7.4. Public Health at the Department of Health Care, Faculty of Public Health, Medical University - Varna.

Research supervisors:

Prof. Sylvia Borisova Dimitrova, PhD

Assoc. prof. eng. Margreta Vasileva, PhD

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

Inna Stoyanova Nenova was enrolled as a full-time PhD student in the doctoral program "Health Care Management" in the field of higher education 7. Health and Sport, professional field 7.4. Public Health at the Department of Health Care, Faculty of Public Health, Medical University – Varna by Order №P-109-485/04.11.2020 of Prof. Valentin Ignatov, PhD, Rector of Medical University - Varna. The period of study is three years, starting from 06.11.2020.

The documentation includes by the Protocol of the Foreign Language Examination and the Protocol of the PhD Minimum Examination.

Inna Stoyanova Nenova was authorized to defend her PhD thesis in front of a scientific jury and the members of the Scientific Jury were appointed by Order No. P-109-548/06.12.2023 of Prof. Dr. Svetoslav Georgiev, PhD, - Rector of MU "Prof. Dr. Paraskev Stoyanov", Varna. The Rector’s order was based on Report No 102-2803/15.11.2023 by Assoc.prof. Katya Egoruze, PhD, Head of the Department of Health Care, and pursuant to the Protocol No 214/22.11.2023 of the Faculty Council and Report No 104-1391/27.11.2023 by prof. Antonia Slavcheva Dimova-Yordanova, PhD, Dean of the Faculty of Public Health.

The submitted set of the documents on paper and electronic formats is in compliance with the Rules and Regulations for Academic Staff Development, Article 69, of MU "Prof. Dr. Paraskev Stoyanov" Varna as of 2022 and includes all required documents.

Inna Stoyanova Nenova was born in 1992 in Varna, Bulgaria. In 2015 she graduated from MU - Varna with a degree in midwifery. Later she obtained her Master's degree in Health Care Management and Health Management (2019) at Medical University - Varna.

The professional experience of the doctoral student in the specialty began in the Medical Center "Chaika" - Varna (2015). From 2019 to now she has been working as a midwife in Outpatient Clinic - Medical Center for Specialized Medical Care (AMCSMC) "Prof. dr. D. Stamatov – Varna where she has been the chief midwife since 2021. In 2018, she became the Manager of the Independent Obstetric Practice Unit.

Teaching activity Inna Nenova realized as a lecturer and doctoral student at the Department of Health Care of the Faculty of Health Care at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna. She is the Chairperson of the Consultative Council of Midwives at the Regional College of BAPHG - Varna.

The continuous clinical work of the doctoral student is defining and valuable for her teaching activity as well as for her research interests.

In the period 2020-2022 Inna Nenova is a teacher in clinical practice in the department of "Neonatology" of students of the specialty "Nurse" from the Faculty of Public Health of MU - Varna. Later, as a full-time doctoral student, Inna Nenova teaches practical training in the discipline "Special care of pregnant women with normal and pathological pregnancy" to students of the specialty "Midwife", Medical University - Varna.

Enhancing students' professional competencies using standard and situational real case study learning activities based on her clinical experience are defining the applicant's work with future healthcare professionals.

Inna Nenova is a member of the Bulgarian Association of Health Care Professionals (BAHCP), National Association "Support for Breastfeeding" and Bulgarian Society of Obstetrics and Gynecology. The active participation of the doctoral student in the governing bodies of the professional organization - Chairperson of the National Professional Advisory Council "Midwives" at the BFPAH and member of the Governing Board of the Regional Collegium - Sofia, Bulgaria. Member of the Board of the Regional Council of the Bulgarian Association of Health Care Professionals.

For the period 2015 - 2023 the doctoral student has participated in a total of more than 30 specialized courses and scientific conferences with reports. She has completed more than 10 postgraduate courses related to the future of obstetrics and the development of independent practices, best practices in health care, modern possibilities of maternal - fetal medicine, normal pregnancy and childbirth - observation and course, natural nutrition of the newborn and others, which proves the focused professional and research interests of Inna Nenova.

She speaks and writes English at a very good level.

The commitment of Inna Nenova in the midwifery practice, as well as her paramount interest in the innovations in midwifery care, have determined the selection of the doctoral thesis subject.

2. Overview of the thesis and its relevance

Relevance of the topic

The proposed topic by Inna Nenova is of considerable relevance. The need for accountability and written recording of activities performed by the health care professional is one of the challenges facing today's health care managers. There is a wide range of activities in outpatient care settings that midwives are entitled to and do independently or under a physician's order, but adequate, specialized documentation where this is reflected is not yet used.

In recent years, one of the challenges facing those involved in the health care process has been the continuous optimization of general and special care in women and children's healthcare. According to a number of studies by professional and scientific organizations, the priority problems of obstetric practice are the shortage of personnel, underfunding of the services offered, and the continuous increase in consumer expectations. For this reason, the problem of the documentation as an essential element of midwifery practice is underestimated by both consumers and providers of care and is not a priority for managers of health care facilities. These facts lead to deficits in the control of the care provided at national level. The consequences of the lack of documentation of obstetric care are: subjectivism in the evaluation and control of the services provided, the inability to differentiate activities and, consequently, demotivation among health care professionals and dissatisfaction on the part of consumers. A serious challenge for health care professionals is the development of research that will bring midwifery care in Bulgaria closer to the possibility of implementing evidence-based care and personalizing services. The objectification of care will inevitably both influence motivation amongst colleagues and increase the confidence and satisfaction of his Majesty Patient/Client.

The objective significance of the problem calls for the future investigations in the field and searching for alternatives to optimize the management of documentation of obstetric cares in outpatient settings.

Thesis structure

The present dissertation is classically structured research and includes the following five sections: Chapter 1 - Literature Review; Chapter 2 -Methodology and Organization of the Study; Chapter 3 - Results and Discussion; Chapter 4 - Electronic Midwifery Care Management System - Practical Application and Chapter 5 - Conclusions Recommendations and Contributions and is written on a total of 209 standard pages. It is illustrated with 66 figures, 27 tables and 8 appendices. The dissertation submitted for review includes a sufficiently complete and accurate bibliography, represented by 181 sources, 77 are in Bulgarian and 104 in Latin.

3. Evaluation of the structural parts of the dissertation

Literature review, awareness of the issue

Inna Nenova has a comprehensive knowledge of the issue. She has made a deeply analysis and creatively evaluates the available literature relevant of the issue. In the literature review, the doctoral student demonstrates competence regarding the historical development of the

midwifery care from the antiquity to the present. The review is logical structured into seven main parts. The focus is on the significance of the digitalization in modern diagnosis, treatment and follow-up of the pregnant and postpartum woman, the nature of the nursing process and its relevance to modern nursing and midwifery practice. Current best practices in the organization of midwifery care in different parts of the world (China, USA, Canada, and Europe) was presented, demonstrating the significant role of a trained and competent midwife committed to effective participation in meeting the needs of pregnant and laboring women.

In Bulgaria, the professional role of the midwife is limited, which predetermined by the reforms implemented in recent years. The doctoral student presents the results of a number of studies demonstrating an increasing need for changes in this direction, both by users and providers of midwifery care.

The importance of various telehealth and telemedicine technologies for continuity of care for patients living in remote areas is emphasized and impressive. The possibility of using telemedicine and telenursing in obstetric practice is an objective prerequisite for applying an obstetric (holistic) approach to the care of these patients and improving their quality by optimizing coordination and communication between different specialists, members of the multidisciplinary team.

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 main **aim** of this thesis is to investigate and optimize the management of obstetric care by developing a methodology for integrating an electronic obstetric record into outpatient care.

Seven tasks have completed for this study and they are logical and adequately defined to achieve the aim.

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

The study is a complex medico-social survey using sociological methods (survey method and interview), **SWOT analysis of the concept of electronic obstetric record** and various statistical methods to describe and analyze the collected data. A theoretical study through a descriptive review were conducted to reveal the structure and identify best practices in the implementation of specific nursing/midwifery documentation, and their plans of practicing midwives in performing independent midwifery care. The quantitative study included 60 individuals, including 40 practicing midwives in pre-hospital care (30 responded), 20 academic teachers in the midwifery specialty, and 10 experts, established midwifery care professionals and researchers in the field of contemporary nursing. Outpatient care facilities assessing the care of pregnant women, parturient and newborns from the cities of Varna, Veliko Tarnovo and Shumen and five universities training students in specialty "Midwife" were covered.

The study were conducted during the period January 2022 - September 2023.

The research was approved by the Research Ethics Committee (REC) of MU - Varna (Protocol No. 121/06.10.2022).

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 scientific study with a wide range of sources. It is evidence of the author's thorough knowledge of contemporary methodological approaches in the field of socio-medical research. Appropriate research methods have been selected. Their precise application is described in detail.

The results are presented clearly, well-structured and logical sequence, corresponding to the seven tasks of the study. Although worldwide experience proves the effectiveness of digitalization, the respondents included in the survey gave a different answer about using only electronic form for to patient's data. A statistically significant proportion of individuals (40%) believe that the electronic records should duplicate the paper records.

The idea of documenting the care plan as an element of the nursing process is highly innovative and relevant. The divergent opinion of the teachers included in the study in this direction, however, proves the existence of possible difficulties when working with the electronic obstetric file.

Exploring the opinion of last year students, specialty "Midwife" would also definitely help to objectify these results.

The necessity and importance of additional training to increase practicing midwives' computer skills has been demonstrated.

More than half of the respondents (57% of the surveyed midwives in practice and 91% of the educators), believed that the including of the electronic midwifery record as a part of the relevant regulations is advisable. Documenting the care of the pregnant and/or gynecologically suffering woman will increase the possibilities of monitoring and evaluating the quality of the care provided.

A particularly valuable part of the thesis is the idea of using Microsoft Access, as an applicable program for relational database management and its capabilities for importing and exporting data. ***To refine the idea, it is recommended to organize and conduct a pilot project, after reaching a consensus among interested institutions.***

The 9 conclusions in the thesis are based on the main parts of the study - theoretical part, quantitative and qualitative research and are relevant to the tasks of the study.

Overall assessment of the thesis and contributions.

I fully accept the contributions of the **cognitive-theoretical and practical-applied nature** mentioned by the doctoral candidate. The thesis is an in-depth study of a relevant issue - the challenges of modern obstetric practice and the possibilities of using an electronic obstetric record in practice.

Inna Nenova 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 autonomous obstetric practices and care for pregnant women are discussed in detail. The cited data from studies largely reveals on the social implications and benefits of implementing an obstetric model.

In her research, Inna Nenova demonstrated skills in conducting a scientific study, teamwork, and ethical relationships with all participants in the study. The doctoral student's competence in conducting an in-depth interview 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 needs for specialized prenatal care and the role of the midwife in the provision of this care in pre-hospital care.

The current study is a theoretical-empirical attempt to justify and test the reliability of an approach that enriches the known approaches for documenting midwifery activities. The research focuses on theoretical and practical reference points through which contemporary opportunities for optimizing healthcare management in the field of outpatient midwifery assistance can be revealed. In the course of the research, a model for an electronic midwifery record is justified based on the complex opinions of practicing midwives, educators, and experts in the field of midwifery care management. The current positives of digitization in midwifery practice along with its specific features and deficits, as well as the current priorities in preparing Bulgarian midwives for their roles as successful managers of their own activities are outlined. Further development of the idea in the future through expanding the scope of research and experimenting with digital proposals would undoubtedly bring Bulgarian midwifery practice closer to contemporary European practices.

The abstract of the dissertation correctly reflects the structure of the dissertation and contains the most significant results and conclusions of the study.

Three thesis-related papers are referenced - one real publication in a collection of papers, one in print and two reports at scientific forums held in between 2021 and 2023, of which the doctoral student is an independent author.

Personal impressions about the candidate

I have no personal impressions of the candidate. I know Inna Nenova from her activity in the Bulgarian Association of Health Care Professionals. The doctoral candidate impresses with her cognitive interest, ambition and ability to analyze the problems of health care for pregnant and postpartum women in outpatient care.

CONCLUSION

The presented dissertation is distinguished by its topicality, originality, methodological innovation and precision. The overall organization and conduct of the study are a personal work of the doctoral candidate and proves her good research capabilities.

The dissertation contains scientific, scientific and applied results, which represent an original contribution to science and meet the requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria (DASRB), the Regulations for the Implementation of the DASRB and the Regulations of MU - Varna. The submitted materials and dissertation results comply with the specific requirements adopted in connection with the Regulations of MU - Varna for the application of the DASRB.

The dissertation work shows that the doctoral candidate Inna Stoyanova Nenova possesses in-depth theoretical knowledge and professional skills in the scientific specialty "Health Care Management", demonstrating qualities and skills for independent scientific research.

Considering the above, I give my **positive evaluation** for the conducted research, presented by the above-reviewed dissertation, abstract and the achieved results and **contributions, and propose to the esteemed members of the Scientific Jury to award to Inna Stoyanova Nenova the educational and scientific degree 'Doctor' in the scientific specialty 'Health Care Management'**.

16.01.2024

Prepared the review.

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(Prof. M. Draganova, PhD)