

REVIEW

by

Prof. Delyana Petrova Hadzhideleva, PhD

Faculty of Public Health "Prof. Tzekomir Vodenitcharov, MD, SDe"

Department of Health care

Medical University – Sofia

E-mail: d.hadzhideleva@foz.mu-sofia.bg Mobile: 0899920512

Appointed as an external member of the Scientific Jury pursuant to Order No. R 4494 / 06.08.2026 of the Vice-Rector for Research of Medical University – Plovdiv and designated to prepare a Review.

Regarding the PhD thesis entitled:

"MEDICO-SOCIAL ASPECTS AND EXPECTED EFFECTS OF ELECTIVE CAESAREAN SECTION UPON REQUEST"

for the award of the educational and scientific degree of Doctor (PhD) in the doctoral programme of *Health Care Management*, within Area of Higher Education 7. Healthcare and Sports, Professional Field 7.4 Public Health

Author: **Zlatina Ivanova Nikolova-Rancheva**

Mode of study: Independent research mode

Faculty of Public Health, Department of Midwifery Care

Academic Supervisors:

Assoc. Prof. Milena Sandeva, PhD

Assoc. Prof. Nikoleta Parahuleva-Rogacheva, MD, PhD

1. General Overview of the Procedure and the PhD Candidate

Zlatina Ivanova Nikolova-Rancheva was enrolled as an independent PhD candidate at the Department of Midwifery Care by Order No. R-2125/23.12.2024 of the Rector of Medical University – Plovdiv. She has successfully passed the required doctoral examinations. By Rector's Order No. R-4302/24.07.2026, she was officially granted the right to proceed to public defence.

In connection with the procedure, I have been provided with a set of materials in hard copy and electronic format, in accordance with the Development of Academic Staff in the Republic of Bulgaria Act (ZRASRB), the Regulations for its Implementation, and the Regulations for the Development of Academic Staff at Medical University of Plovdiv. The submitted dossier comprises all the necessary documents for the public defence of a PhD thesis. They have been meticulously prepared and, in my assessment, fully comply with the statutory requirements.

The submitted dossier includes:

- Application to the Rector of Medical University of Plovdiv;
- Academic Curriculum Vitae (CV);
- Copies of Master's degree diplomas;

- Enrolment Order No. R-2125/23.12.2024;
- Order No. R-75/07.01.2026 for the appointment of a second academic supervisor;
- Order No. R-4302/24.07.2026 granting the right to proceed to public defence;
- Doctoral examination protocol;
- Doctoral examination certificate;
- PhD thesis;
- Summary of the PhD thesis;
- Declaration of authenticity and confidentiality;
- List and copies of publications related to the topic of the PhD thesis;
- List of participations in academic conferences and scientific forums.

2. Brief Biographical Details of the PhD Candidate

Zlatina Ivanova Nikolova-Rancheva was born in 1987 in Plovdiv. In 2010, she graduated from Medical University – Plovdiv with a Bachelor's degree (BSc) in Midwifery. In 2012, she obtained a Master's degree (MSc) in Health Care Management from Medical University – Plovdiv, and in 2014, she earned a second Master's degree in Preventive Pedagogy from Plovdiv University "Paisii Hilendarski". She also holds a postgraduate specialisation in Hospital Hygiene, Infection Prevention and Control. She is proficient in English.

From 2021 to the present, she has served as an Assistant at the Department of Midwifery Care, Faculty of Public Health, Medical University – Plovdiv, where she conducts practical classes and clinical placements for students. Zlatina Nikolova is actively involved in the teaching and administrative activities of the department. She has co-authored three textbooks and has authored numerous publications in peer-reviewed scientific journals. She is also a participant in one research project.

3. Relevance and Significance of the Research Topic and Appropriateness of the Aims and Objectives

The topic of the PhD thesis is of high medical, social, and practical significance, given the persistently high rate of Caesarean sections in Bulgaria and the necessity for an in-depth investigation into the factors determining the choice of operative delivery. The relevance of the problem is defined not only by the frequency of operative deliveries but also by the multifactorial nature of the decision to perform a Caesarean section.

A crucial aspect of this relevance is the need to distinguish medically indicated Caesarean sections from operative deliveries where non-medical factors may exert a significant influence. The PhD thesis places specific emphasis on the potential for early identification of women at an elevated risk of an unjustified preference for operative delivery, as well as on the need for timely counselling and support.

The scientific significance of the PhD thesis is determined by the multidimensional and interdisciplinary approach to the investigated subject matter. The differences between elective and emergency Caesarean sections have been analysed with regard to maternal characteristics, medical factors, complications, and the condition of the newborns. The higher frequency of neonatal interventions, complications, and prolonged hospital stays observed following

emergency Caesarean sections underscores the necessity for a comprehensive assessment of the consequences of the mode of delivery for both the mother and the neonate.

4. Familiarity with the Subject Matter

The PhD candidate has presented an in-depth and systematised literature review spanning 50 pages, which provides a comprehensive and holistic overview of the current state of the investigated research problem. The bibliography spans 16 pages and comprises a total of 242 references, of which 11 are by Bulgarian and 231 by international authors. This demonstrates the candidate's broad academic awareness and critical approach to the referenced literature.

Based on the analysed sources, the literature review is structured into eight main sections with logically delineated subsections, which thoroughly examine a broad spectrum of issues related to Caesarean section. The review explores the definition and primary medical indications, the types of Caesarean section, the historical evolution of operative delivery, and the short- and long-term effects on the mother and the neonate. Additionally, it addresses tokophobia and the desire for Caesarean section, the factors contributing to its rising incidence, as well as strategies for reducing unnecessary operative deliveries. Special attention is devoted to elective Caesarean section upon maternal request and the specific aspects of the issue within the countries of the Balkan Peninsula.

Particular attention within the literature analysis is given to the medical, psychological, social, and organisational factors that may influence the choice of mode of delivery. This establishes the requisite theoretical foundation for the subsequent empirical research, which is directed towards the core problem areas and potential solutions. Consequently, this demonstrates the PhD candidate's solid theoretical background, analytical capabilities, and comprehensive familiarity with the literature concerning the investigated problem.

5. Research Methodology

Drawing upon the data analysed in the literature, Assistant Zlatina Nikolova has purposefully and logically defined the aim of her PhD thesis, which is directed towards the investigation and analysis of the incidence and the medico-social factors associated with elective Caesarean section upon maternal request and its expected effects within the Plovdiv region. To achieve this, six specific objectives have been formulated. These are relevant to the primary aim and facilitate a sequential investigation of the problem, its determining factors, and the development of a practical tool to address it.

The sequence of the research stages is accurately and clearly described, allowing for a proper understanding of the nature of the procedures undertaken. The methodological approach is sufficiently comprehensive, enabling the collection of high-value data and the attainment of the set aim and objectives. Through the application of documentary, sociological, and statistical methods appropriate for the established aims, the PhD candidate investigates the incidence of Caesarean sections, the factors influencing the choice of mode of delivery, the differences between elective and emergency Caesarean sections, as well as the associated complications and neonatal outcomes. The PhD candidate has also achieved an in-depth analysis of the investigated issues through a direct, individual, anonymous survey utilizing a custom-designed

research instrument (a 30-item questionnaire), administered to two groups of respondents comprising a total of 420 individuals, as follows:

- Group I ("cases") – 210 patients following a Caesarean section; and
- Group II ("controls") – 210 patients who delivered vaginally.

The chosen methodology facilitates a comprehensive and multifaceted investigation of the problem, providing the necessary empirical basis for formulating well-founded conclusions and recommendations, as well as for developing an algorithm for the early identification of the risk of unnecessary Caesarean section.

The mathematical and statistical methods employed for the processing and analysis of the collected data are presented accurately and effectively illustrate the obtained results.

6. Characteristics and Evaluation of the PhD Thesis

The PhD thesis presented by Assistant Zlatina Ivanova Nikolova-Rancheva is dedicated to a highly relevant and significant issue in contemporary obstetrics and public health, namely the incidence of Caesarean section, the factors associated with its selection, and the strategies for reducing unnecessary operative deliveries. The topic holds substantial medical and medico-social significance, given the high rate of Caesarean sections in Bulgaria and the necessity to strike a balance between medical necessity, the safety of the mother and the neonate, and the informed choice of the woman.

The PhD thesis is structured in accordance with the established framework for academic research and comprises: an introduction, literature review, analysis of the literature review, aim and objectives, materials and methods, results and discussion, an algorithm for addressing unnecessary Caesarean sections, conclusions, contributions, recommendations, bibliography, and appendices. The main text spans up to page 132, followed by the bibliography and the appendices. In terms of content, the individual sections are logically sequenced and interconnected. The thesis is illustrated with 44 figures and 12 informative tables, which present the results of the study and provide clarity on the investigated problem. It is written in a clear and academic style, employing precise scientific terminology. The PhD candidate also presents three appendices related to the research instruments.

The introduction convincingly substantiates the relevance of the issue. Caesarean section is examined as a life-saving mode of delivery under specific medical indications; however, emphasis is concurrently placed on the necessity to evaluate cases in which operative delivery might be performed without sufficient medical justification. The PhD candidate emphasises the significance of the woman's informed decision, alongside the need for a better understanding of the factors shaping preferences regarding different modes of delivery.

The literature review is comprehensively developed and encompasses a broad spectrum of issues related to Caesarean section. It explores the definition and primary medical indications, the types of Caesarean section, the historical evolution of operative delivery, the short- and long-term effects on the mother and the neonate, tokophobia and the desire for Caesarean section, the factors contributing to its rising incidence, as well as the strategies for reducing unnecessary operative deliveries. The author has also devoted special attention to elective Caesarean section upon maternal request and the specific aspects of the issue within the countries of the Balkan Peninsula. Particular emphasis within the literature analysis is placed on the medical, psychological, social, and organisational factors that may influence the

choice of mode of delivery. This establishes the requisite theoretical foundation for the subsequent empirical research.

The core of the PhD thesis is presented in the *Results and Discussion* section. Over a span of 60 pages, the results of the conducted study are detailed. They are presented in a logical sequence, characterised by their comprehensiveness, and supported by meticulously structured figures or detailed tables. These present the obtained data in a more synthesised format, ensuring their accurate interpretation and comprehension. The volume of information is sufficient, thereby ensuring the reliability of the results. The analysis is structured into two primary stages, wherein Assistant Nikolova incorporates both objective medical data and information concerning the women's attitudes, fears, and experiences.

In the *first stage*, the PhD candidate conducted an analysis of the trends and regional variations in the incidence of Caesarean sections in Bulgaria. The data demonstrate a decrease in the total number of deliveries during the 2019–2023 period by approximately 7%, whilst maintaining a high relative proportion of Caesarean sections. A particularly high rate of operative deliveries was recorded for the Plovdiv region during the investigated period.

The retrospective analysis of the examined clinical sample, comprising 609 women who underwent surgery (342 elective CS and 267 emergency CS), allows for the assessment of socio-demographic characteristics, medical history, clinical parameters, indications for operative delivery, maternal complications, and neonatal outcomes.

The results of the first stage of the study demonstrate that elective Caesarean sections predominate over emergency ones (56.20% versus 43.80%). The comparative analysis between them merits particular attention. The author establishes statistically significant differences across a range of parameters, including neonatal outcomes, the requirement for resuscitation procedures, the administration of antibiotic therapy, and the incidence of complications. A prolonged hospital stay was also recorded for neonates following emergency Caesarean section.

In the *second stage* of the study, the PhD candidate focused on investigating the attitudes and experiences of women concerning the mode of delivery. The obtained results indicate that socio-demographic characteristics do not, in isolation, statistically determine the mode of delivery to a significant degree. The type of previous delivery is of substantial significance, as a prior Caesarean section is strongly associated with a subsequent operative delivery.

It is further established that the fear of vaginal delivery is widespread; however, it does not independently dictate the choice of Caesarean section. A categorical refusal of vaginal delivery was identified exclusively among women who had delivered via Caesarean section. An important finding is the prominent influence of medical professionals—doctors and midwives—in shaping women's opinions regarding the mode of delivery. Personal experience from a previous delivery also exerts a substantial influence on future preferences.

The obtained results support the necessity for the development and implementation of an algorithm for the early identification and mitigation of the risk of unnecessary Caesarean section. This algorithm is directed towards alleviating fears, improving awareness, and facilitating informed choices regarding the mode of delivery, which represents one of the primary objectives of the doctoral research.

Based on the in-depth and comprehensive analysis of the study results, the PhD candidate has theoretically substantiated and developed an *"Algorithm for Early Screening and Risk Stratification for Performing Unnecessary CS"*. It incorporates early screening within the

antenatal clinic, an assessment of the obstetric history, medical risk, psychological attitudes, and the woman's awareness, followed by subsequent risk stratification and management tailored to the identified risk group. Re-evaluation during the pregnancy, as well as postnatal feedback, are also integrated into the algorithm.

The practical value of the algorithm lies in its focus on the early identification of women at an elevated risk of an unjustified preference for Caesarean section, coupled with timely and structured counselling. The proposed sequence facilitates an individualised approach, tailored to the medical and psychological characteristics of the woman.

7. Contributions and Significance of the PhD Thesis

I acknowledge and endorse the contributions outlined by the research findings and the formulated conclusions. They are categorised as scientific-theoretical, confirmatory, and applied. Notable among these are the execution of a combined epidemiological and medico-social study on the factors influencing Caesarean section; the investigation of postpartum women's views regarding the mode of delivery using a case-control design; the confirmation of the multifactorial nature of the reasons associated with operative delivery; the development of a survey instrument; and the creation of an algorithm for early screening and risk stratification for unnecessary Caesarean section.

Of particular significance is the applied nature of the developed algorithm, which can serve as a foundation for structuring the counselling and early identification of women in whom psychological, informational, or prior obstetric factors may influence the choice of mode of delivery.

8. Assessment of the Publications Related to the PhD Thesis

The PhD candidate presents three publications related to the topic of the thesis, in two of which she is the first author. They have been published in scientific journals, with two of them featuring in a journal with an Impact Factor.

9. Summary of the PhD Thesis

The presented summary, spanning 49 pages, is formatted in accordance with the statutory requirements and concisely, accurately, and comprehensively reflects the PhD thesis.

10. Personal Contribution of the PhD Candidate

In the submitted PhD thesis, the candidate demonstrates full personal involvement; all conclusions drawn, contributions made, and results obtained are entirely her own independent work.

11. Critical Remarks

For the sake of greater methodological rigour, I would note the absence of an explicitly formulated working hypothesis. Whilst this does not diminish the value of the collected data, defining a scientific hypothesis would have further enhanced the analytical nature of the thesis.

CONCLUSION

The presented PhD thesis, titled "Medico-social aspects and expected effects of elective Caesarean section upon request", by Assistant Zlatina Ivanova Nikolova-Rancheva, meets all the requirements of a completed doctoral dissertation, contains contributions of theoretical and practical significance, and fully complies with the criteria established by the Development of Academic Staff in the Republic of Bulgaria Act and the Regulations on the Terms and Conditions for Awarding Degrees and Academic Appointments at Medical University – Plovdiv. The dissertation demonstrates that the PhD candidate possesses in-depth theoretical knowledge and professional skills in the specialty of Health Care Management, displaying the capacity and ability to conduct independent scientific research. Based on the comprehensive evaluation of the PhD thesis and the summary (abstract), I give my **unqualified positive assessment** and recommend that the esteemed Scientific Jury award the educational and scientific degree of **Doctor (PhD)** to **Assistant Zlatina Ivanova Nikolova-Rancheva** in the specialty of Health Care Management, within Professional Field 7.4 Public Health, Area of Higher Education 7. Healthcare and Sports.

21 September 2026

Review prepared by 
(Prof. Delyana Hadzhideleva, PhD)

Заличено на основание
Чл.5 §1, 6. "В" Регламент (ЕС)2016/679